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MB-500

Microsoft Dynamics 365: Finance and Operations Apps Developer (beta)



## Testlet 1

### Case study

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To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

#### To start the case study

To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All **Information** tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

### Background

Wide World Importers sell office supplies, furniture, and fittings to their customers across the United States. The company has the following locations:

- a retail store in Seattle ▪  
a warehouse in Seattle
- a customer support and call center in Atlanta ▪ a team of field workers that provide  
furniture installation services at customer sites.

Wide World Importers plans to implement Dynamics 365 Finance and Microsoft Azure cloud platform features.

### Current environment

Customers may place orders by email, phone, or by using the company's website. The company authorizes and processes credit card transactions by using a web-based application. Customer, inventory, supplier, and other master and transactional data is stored in a legacy database.

The company collects feedback from customers by phone or a form on the company's website and maintains the data in a Microsoft Excel workbook.

Wide World Importers runs on-premises applications to manage payroll and workers compensation. The company has a set of Microsoft Power BI dashboards that present data from a reporting database.

The company creates a Lifecycle Services (LCS) implementation project and completes Dynamics 365 Finance onboarding.

The company maintains production, quality assurance (QA), development, user acceptance testing (UAT), and build environments.

### Requirements

#### General

- You must configure a cloud-based Dynamics 365 Finance development environment and enable code extension that support updates. ▪  
You must configure version control and a Build environment.
- You must migrate all legacy data to the new system.
- You must implement best practices for X++ coding, the data model, caching, and security.
- All new code must be unit tested in a development environment and then validated by the QA team before code is added to source control. **Business**

#### processes

- You must configure vendor trade agreements.
- Products must be shipped directly from suppliers to customers depending on customer location to save indirect costs.
- You must collect customer feedback on products shipped directly from vendors.
- You must deploy code to a UAT environment for testing before deploying code to production.
- You must validate all entries for the purchase order creation form.
- You must develop a web portal that allows customers to browse products, place orders, and check order status. Product data for the web portal must be integrated as periodic batches.

### Business systems

- You must install and configure a third-party solution for credit card processing within Dynamics 365 Finance. The third-party company will provide a deployable package ▪
- The workers compensation application must be able to call an API to update worker compensation details in Dynamics 365 Finance.
- You must develop a process to import payroll journals into the system.
- You must configure the warehouse mobile device portal for warehouse operations.
- You must install a third-party solution to support web portal integration. The solution is supplied as a source code model file.

#### Vendor exclusion list

You must develop a new solution to maintain a Vendor exclusion list for each customer and item combination. The solution must meet the following requirements:

- Isolate all new vendor exclusion codes as a new assembly by creating a table named VendExclusions.
  - Create an index for the table named PrimaryIdx that uses the following fields: CustAccount, ItemId, VendAccount.
  - Ensure that users can open the Vendor Exclusion list report from the customer master form. The list must display the customer account, Item ID, and Vendor account fields.
  - Implement the Excel integration for the Vendor Exclusion List form.
  - Provide functionality to periodically export the Vendor exclusion list to prepare reports by using standard reporting capabilities of Dynamics 365 Unified Operations.
  - Develop necessary security permissions to view and maintain the new Vendor exclusion list functionality and reporting. Users with maintain rights will be able create, update, and delete the exclusion list. Permissions must be assigned to security roles to match company security model.
  - Maintain referential integrity with other tables.
  - Users must be presented with a warning message before a direct delivery purchase order is created for a vendor in exclusion list. ▪
- Sales managers must be alerted when a new exclusion record is added to the system.

#### Security

- You must implement the record level audit feature to identify the users who created the record.
- Grant specific users rights to maintain the vendor exclusion list by using Excel.
- You must implement validation to check whether a proposed direct delivery purchase order vendor is on the exclusion list for the customer and product combination.

#### Issues

User1 is not able to access many features in the system. You must provide User1 administrator rights.

A sales manager suspects a data-related issue in the vendor exclusion list. User1 must identify the user who created the referenced exclusion records.

Developer2 joins the company and does not have access to a development environment or source control.

User2 reports performance issues when they generate direct delivery purchase orders after current updates are applied.

User2 reports that they cannot access new functionality and reports.

#### QUESTION 1 HOTSPOT

You need to create the new table for the vendor exclusion list.

What should you do? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

## Answer Area

What should you create?

	▼
a table extension for Vendors and a relation for Vendor exclusions	
a relation between the Vendor exclusions table and the Vendors table	
a table extension for Vendors and add a Delete Action for Vendor exclusions	

For which property on the relationship node should you set a value?

	▼
Delete Action	
Validate	
OnDelete	
Relationship Type	

Correct Answer:

## Answer Area

What should you create?

	▼
a table extension for Vendors and a relation for Vendor exclusions	
a relation between the Vendor exclusions table and the Vendors table	
a table extension for Vendors and add a Delete Action for Vendor exclusions	

For which property on the relationship node should you set a value?

	▼
Delete Action	
Validate	
OnDelete	
Relationship Type	

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Scenario: You must develop a new solution to maintain a Vendor exclusion list for each customer and item combination. The solution must meet the following requirements:

- Isolate all new vendor exclusion codes as a new assembly by creating a table named VendExclusions.
  - Create an index for the table named PrimaryIdx that uses the following fields: CustAccount, ItemId, VendAccount.
  - Ensure that users can open the Vendor Exclusion list report from the customer master form. The list must display the customer account, Item ID, and Vendor account fields. ▪
- Maintain referential integrity with other tables.

Box 1: a table extension for Vendors and relation for the Vendor exclusions

Box 2: Relationship Type

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/data-entities/develop-composite-data-entities>

**QUESTION 2** You need to apply a form pattern to the Vendor exclusion list.

Which pattern should you use?

- A. Workspace
- B. Simple List
- C. List Page
- D. List View

**Correct Answer:** C

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

A list page presents a set of data on a user interface that is optimized so that you can browse records, find the right record, and then take an action upon that record. The list page lets the user search, filter, and sort the data. FactBoxes on the right side of the grid show related data for the active record. Actions that are relevant to the record are located on the ActionPane at the top of the page.

Scenario: You must develop a new solution to maintain a Vendor exclusion list for each customer and item combination. The solution must meet the following requirements:

- Isolate all new vendor exclusion codes as a new assembly by creating a table named VendExclusions.
- Create an index for the table named PrimaryIdx that uses the following fields: CustAccount, ItemId, VendAccount.
- Ensure that users can open the Vendor Exclusion list report from the customer master form. The list must display the customer account, Item ID, and Vendor account fields.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/user-interface/list-page-form-pattern>

**QUESTION 3** You need to meet the requirements for the purchase order creation form.

What are two possible ways to achieve this goal? Each correct answer presents a complete solution.



**NOTE:** each correct selection is worth one point.

- A. Create a class and add a form data source event handler method to the class.
- B. In Application Explorer, create a table extension and implement validation.
- C. In Application Explorer, create a form extension and implement validation.
- D. Implement Chain of Command (CoC) and method wrapping by creating a form extension class.

**Correct Answer:** CD

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario:

Users must be presented with a warning message before a direct delivery purchase order is created for a vendor in exclusion list.

You must implement validation to check whether a proposed direct delivery purchase order vendor is on the exclusion list for the customer and product combination.

**QUESTION 4**

DRAG DROP

You need to develop, test, and deploy the Vendor Exclusion list solution.

What should you create? To answer, drag the appropriate objects to the correct actions. Each element may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

**NOTE:** Each correct selection is worth one point.

**Select and Place:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: package

An AOT package is a deployment and compilation unit of one or more models that can be applied to an environment. It includes model metadata, binaries, reports and other associated resources. One or more AOT packages can be packaged into a deployable package, which is the vehicle used for deployment of code (and customizations) on demo, sandbox, and production environments.

Box 2: New model

Model - You configure your model to refer to two other models. This enables your model to reference metadata and code elements that are in other packages.

Box 3: project

Project - You create a project and then associate your project to your new model. You add elements to your project, which are also added to your model. Specifically, you add an extended data type (EDT). You also add a table that you populate with fields and a method.

Box 4: deployable package

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-tools/create-data-model-elements>

## Testlet 2

### Case study

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

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#### To start the case study

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### Background

#### Overview

First Up Consultants provides Commercial Cleaning services to its clients. The company purchases all its cleaning supplies from Best For You Organics Company.

First Up Consultants is using a cloud-based Dynamics 365 Finance instance. The system has a foundation table named CashDisc that contains one cash discount record for each cash discount type.

Best For You Organics Company invoices First Up Consultants and allows cash discounts based on how fast an invoice is paid. First Up Consultants is entitled to a two percent discount from Best for You Organics for any invoice that is paid within 10 days and has a minimum invoice amount of \$2,500. **Business requirements**

All new and extended objects must be located in an existing model named FinanceExt. The creation of new models is not permitted.

Best For You Organics Company requires that First Up Consultants apply specific minimum invoice amounts to each cash discount record. A cash discount may only be applied when the minimum invoice amount requirement has been met. The new field must be added to the CashDisc form grid with the allowable visible number of characters set to 10.

First Up Consultants must retrieve the required Cash Discount methods and corresponding minimum invoice amounts directly from Best For You Organics Company's enterprise resource planning (ERP) system.

The Chief Financial Officer (CFO) requires the following reports:

- A report that shows all outstanding invoices, their cash discount types including the new minimum threshold applicable, and the amount of the discount. The report must only be accessed by users who are members of the Accounts Payable Manager role.
- You must create a Microsoft Excel workbook that lists unpaid invoices to Best For You Organics Company that have a due date earlier than 5/1/2019 and an Invoice Amount between \$20,000 and \$100,000.

Cash discounts for unpaid invoices must be updated with the new minimum invoice amounts.

#### Financial requirements

##### Vendor Invoices Past Due form

You must be able to filter the grid on the Vendor Invoices Past Due form. By default, you must filter the form based on the Due Date, Invoice Amount, and Vendor columns. Users must be able to apply reusable user-specific filters to a page using multiple fields.

##### CashDisc form

You must extend the CashDisc form to add a new field named MinimumInvoiceAmount to the form. You must add a new Extended Data Type to the extension model for the new field. The new field must be added above the discount method field. The field must display 10 characters.

The accounts payable manager and the accounts payable clerk have Delete access to the form. You must alter permissions to limit accounts payable clerks to have only View access to the form.

##### Cash Discount Records report

You must create a report that shows a list of CashDisc records. You must include the MinimumInvoiceAmount field and filtered data by using the CashDisc.DiscMethod field. Applicable security objects must be created in the existing "FinanceExt" model and configured so the report is accessible by those users to the accounts payable role.



## Batch jobs

You must create a batch job that runs on the last day of each month to update the current unpaid invoices with changes in the minimum invoice amount. The job must meet the following requirements:

- Accept the following parameters: Vendor, DueDate.
  - Be callable by an Action menu item.
  - Allow users to specify vendors to include in the job. ▪
- Use SysOperation Framework for all batch jobs.

You must create a batch job to identify modified CashDisc.MinimumInvoiceAmount values and apply these to open Purchase Lines.

**QUESTION 1** You need to configure filtering for the Vendor Past Due Invoices form.

Which two filtering types can you use? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. QuickFilter
- B. Advanced Filter
- C. Grid Column Filtering
- D. Filter pane

**Correct Answer:** AC

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

A: QuickFilter: A framework-provided filtering mechanism that can appear above any list or grid, and that provides fast single-column filtering.

C: Grid column filtering: The user can define filter conditions and perform single-column sorting by using a drop dialog that is opened from the grid column header.

Scenario: You must create a batch job that runs on the last day of each month to update the current unpaid invoices with changes in the minimum invoice amount. The job must meet the following requirements:

- Allow users to specify vendors to include in the job.
- Accept the following parameters: Vendor, DueDate.
- Be callable by an Action menu item.
- Use SysOperation Framework for all batch jobs.

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/user-interface/filtering>

## Question Set 3

### QUESTION 1

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You create a new form in a project.

You need to display tabs in a vertical alignment.

Solution: Apply the Simple List pattern.

Does the solution meet the goal?

- A. Yes



B. No

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Reference: <https://docs.microsoft.com/sv-se/dynamics365/fin-ops-core/dev-itpro/user-interface/simple-list-details-form-pattern>

## QUESTION 2

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You create a new form in a project.

You need to display tabs in a vertical alignment.

Solution: Apply the Operational Workspaces pattern.

Does the solution meet the goal?

A. Yes

B. No

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/user-interface/workspace-form-pattern>

## QUESTION 3

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You create a new form in a project.

You need to display tabs in a vertical alignment.

Solution: Apply the Details Master pattern.

Does the solution meet the goal?

A. Yes

B. No

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/user-interface/details-master-form-pattern>

## QUESTION 4 HOTSPOT

You are a Dynamics 365 Finance and Operations developer.

You need to monitor system performance.

Which tools should you use? To answer, select the appropriate option in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: LCS Environment Monitoring tool

Microsoft Dynamics Lifecycle Services (LCS) provides to help you monitor, diagnose, and analyze the health of the Finance and Operations environments that you manage.

Box 2: Trace Parser

You can use the Trace parser to consume traces and analyze performance in your deployment.

Box 3: SQL Profiler

Incorrect Answers:

Fiddler:

Fiddler can help in different ways with Dynamics 365 troubleshooting, including determine what errors are being reported, and by speeding up the JavaScript development process.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/lifecycle-services/monitoring-diagnostics>

**QUESTION 5** You are a Dynamics 365 Finance and Operations developer. You have a virtual machine that includes Visual Studio.

You need to display the elements by model.

What should you do?

- A. Select **Model management** from the menu and then select **View all package dependences**.
- B. Right-click the Application Object Tree (AOT) node in Application Explorer and select **Model View**.
- C. Select **Metadata Search** from the Dynamics 365 menu.
- D. Select **Model Management** from the menu and then select **Refresh Models**.

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

1. In Microsoft Visual Studio, on the Dynamics 365 menu, click Model Management > Refresh Models.
2. Open Application Explorer by clicking View > Application Explorer.
3. Right-click the AOT root node, and then click Model view.

A list of installed models is displayed.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-tools/manage-runtime-packages>

**QUESTION 6 HOTSPOT**

You have a Dynamics 365 Finance and Operations development environment.

You must add default filters to the fleet management form. You must view only sales that occur in the current sales period and where the Customer name field contains the next **Wholesales**.

You need to configure filtering.

What should you do? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

**QUESTION 7** You need to prepare to deploy a software deployable package to a test environment.

What are two possible ways to achieve the goal?

Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. In Visual Studio, export the project and upload the project to the asset library.
- B. In Azure DevOps, queue a build from the corresponding branch and upload the model to the asset library.
- C. In Azure DevOps, queue a build from the corresponding branch and upload the package to the asset library.
- D. In Visual Studio, create a Dynamics 365 deployment package and upload the package to the asset library.

**Correct Answer:** CD

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

C: Dynamics Lifecycle Services (LCS) Asset Upload : Upload a software deployable package to an LCS project's Asset Library. This task is only available as a release pipeline task. It requires an LCS connection to be setup in the Azure DevOps project's service connections.

D: Deployable packages can be created by using Visual Studio dev tools.  
After a deployable package is created, it must be uploaded to the Lifecycle Services (LCS) project's asset library.

Reference: <https://marketplace.visualstudio.com/items?itemName=Dyn365FinOps.dynamics365-finops-tools>  
<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/deployment/create-apply-deployable-package>

**QUESTION 8**

DRAG DROP

You are configuring your developer environment by using Team Explorer.

There are several developers working on a customization.

You need to ensure that all code is checked in and then merged to the appropriate branches.

In which order should you perform the actions? To answer, move all actions from the list of actions to the answer area and arrange them in the correct order.

**NOTE:** More than one order of answer choices is correct. You will receive credit for any of the correct orders you select.

**Select and Place:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Reference: <https://docs.microsoft.com/en-us/azure/devops/repos/tfvc/branching-strategies-with-tfvc?view=azure-devops>

**QUESTION 9** You are a Dynamics 365 Finance and Operations developer.

You need to create an extension class.

Which action should you perform?

- A. Mark the class as final.
- B. Add the suffix **.extension** to the file name.
- C. Mark the class as protected.
- D. Mark the class as private.

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/method-wrapping-coc>

**QUESTION 10** You are training a new Dynamics 365 Finance developer.

You need to explain the relationships between models, packages, and projects to the new hire.

Which three design concepts should you explain? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. A project can contain elements from multiple models.
- B. A model is a group or collection of elements that constitute a distributable software solution.
- C. A Visual Studio project can belong to more than one model.
- D. A model is a design time concept.
- E. A package is a deployment unit that may contain one or more models.

**Correct Answer:** BDE

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

B: A model is a group of elements, such as metadata and source files, that typically constitute a distributable software solution and includes customizations of an existing solution.

D: A model is a design-time concept, for example a warehouse management model or a project accounting model.



E: A package is a deployment and compilation unit of one or more models.

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-tools/models>

#### QUESTION 11

DRAG DROP

You are a Dynamics 365 Finance developer.

Users must be able to view a filtered customer list from within a workspace.

You need to add the customer form to a workspace.

Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them on the correct order.

**Select and Place:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

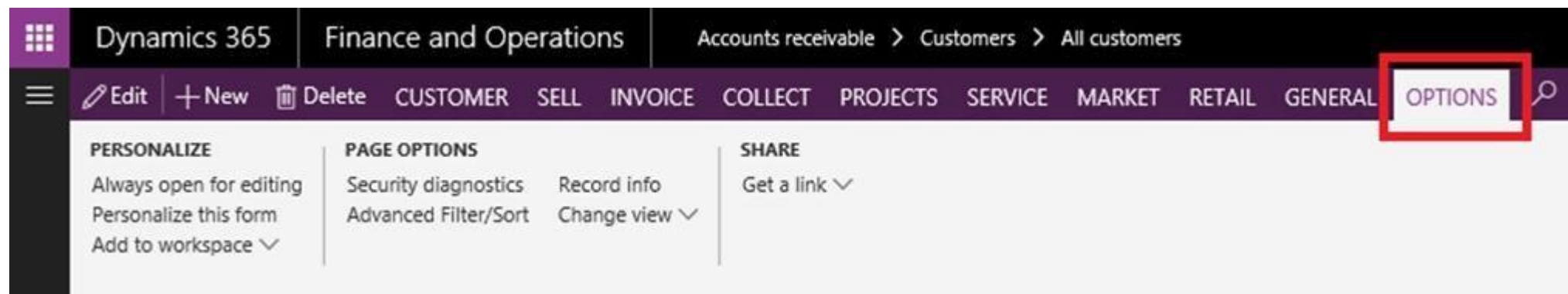
Step 1: Open the customer form and apply filters to the grid.

To add a list to a workspace, first sort or filter the list on the page so that it shows the information as you want it to appear in the workspace.

Step 2: Select the General menu item then select Add to workspace This workspace will be selected in step 3.

Step 3: Select the Options actions pane tab and then select Add to workspace.

For some pages that include lists, the Add to workspace personalization feature is available in the Personalize group on the Options tab of the Action Pane. This feature lets you push relevant information from the current list to a specific workspace.



**PERSONALIZE**

Always open for editing

Personalize this form

Add to workspace ▾

**Add to workspace**

Workspace

Presentation

Tile

Configure

Step 4: Select Configure

After you select Configure, a dialog box appears, where you can select the columns that should appear in the list in the workspace.

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/fin-ops/get-started/personalize-user-experience>

## QUESTION 12

DRAG DROP

You are a Dynamics 365 Finance developer.

You need to troubleshoot performance issues for a client.

Which Lifecycle Services (LCS) tools should you use for each environment? To answer, drag the appropriate environment types to the correct tools. Each environment type may be used once, more than once, or not at all. You may need to drag the split bar between panes scroll to view content.

**NOTE:** Each correct selection is worth one point.

**Select and Place:**

### Answer Area

#### Environment types

User Acceptance Testing (UAT) only

Build only

User Acceptance Testing (UAT) and Build

#### Tool

Activity Monitoring

SQL Insights

System Diagnostics

#### Environment type

**Correct Answer:**

Environment types	Tool	Environment type
User Acceptance Testing (UAT) only	Activity Monitoring	User Acceptance Testing (UAT) and Build
Build only	SQL Insights	User Acceptance Testing (UAT) only
User Acceptance Testing (UAT) and Build	System Diagnostics	Build only

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1: User Acceptance Testing (UAT) and Build

Box 2: User Acceptance Testing (UAT) Only

Not all environments contain all the tools. The following table shows the tools that are available for each type of environment.

Environment type	Tools
Production systems	<ul style="list-style-type: none"> <li>Activity monitoring</li> <li>Environment monitoring</li> <li>SQL insights</li> <li>System diagnostics</li> </ul>
User acceptance testing (UAT)/sandbox	<ul style="list-style-type: none"> <li>Activity monitoring</li> <li>SQL insights</li> <li>System diagnostics</li> </ul>
Demo/build	<ul style="list-style-type: none"> <li>Activity monitoring</li> <li>System diagnostics</li> </ul>

Box 3: Build only

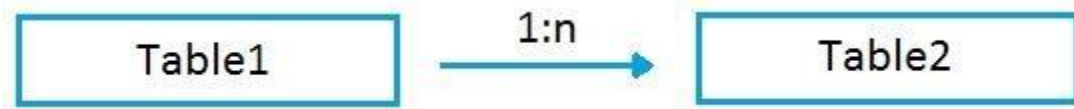
Reference:

<http://axhelper.com/?p=16527>



### QUESTION 13

You are a Dynamics 365 Finance developer. You have two tables as shown in the following exhibit:



You need to configure Table1 to ensure that records cannot be deleted from Table1 if Table2 contains related records.

Which value should you use for the **OnDelete** property?

- A. None
- B. Cascade
- C. Cascade + Restricted
- D. Restricted

**Correct Answer:** D

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Example of Restricted

Suppose we have two tables (Customer & Order) and the relation is of One-To-Many i.e Customer can have many orders.

So on a parent table i.e.(Customer) if I set a delete action property to “RESTRICTED” for Order table. Then If I go and delete the record from a Customer table. It will first check the record in the child table and if exist that warning prompt saying that first we need to delete a record from child table.

Incorrect Answers:

B: Example of Cascade:

Suppose we have two tables (Customer & Order) and the relation is of One-To-Many i.e. Customer can have many orders.

So on a parent table i.e.(Customer) if I set a delete action property to “CASCADE” for Order table. Then If I go and delete the record from a Customer table. It will also delete all the related records in Order table automatically.

C: Example of Cascade + Restricted

Suppose we have three tables (Person ,Customer & Order) Now Person is a parent of Customer table, and Customer is a parent of Order table having (One-To-Many) relations

If I set a Delete action property on Person table to “CASCADE” for customer table and If I set a Delete Action property on a CUSTOMER table for Order table to “CASCADE +RESTRICTED”.

So if I delete a record from Customer table then It will first check the record in the child table(order table) and if exist that warning prompt saying that first we need to delete a record from child table.

But if I delete a record from Person table it will automatically delete a record in Customer table and all records related to customer table in Order table would also be deleted.

Reference: <https://amazingax.wordpress.com/2013/01/13/microsoft-dynamics-ax-2012example-of-cascaderestricted-and-cascade-restricted-delete-action-property-for-a-table-relation/>

## Testlet 1

### Case study

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### Background

Wide World Importers sell office supplies, furniture, and fittings to their customers across the United States. The company has the following locations:

- a retail store in Seattle ▪ a warehouse in Seattle
- a customer support and call center in Atlanta ▪ a team of field workers that provide furniture installation services at customer sites.

Wide World Importers plans to implement Dynamics 365 Finance and Microsoft Azure cloud platform features.

### Current environment

Customers may place orders by email, phone, or by using the company's website. The company authorizes and processes credit card transactions by using a web-based application. Customer, inventory, supplier, and other master and transactional data is stored in a legacy database.

The company collects feedback from customers by phone or a form on the company's website and maintains the data in a Microsoft Excel workbook.

Wide World Importers runs on-premises applications to manage payroll and workers compensation. The company has a set of Microsoft Power BI dashboards that present data from a reporting database.

The company creates a Lifecycle Services (LCS) implementation project and completes Dynamics 365 Finance onboarding.

The company maintains production, quality assurance (QA), development, user acceptance testing (UAT), and build environments.

### Requirements

#### General

- You must configure a cloud-based Dynamics 365 Finance development environment and enable code extension that support updates. ▪ You must configure version control and a Build environment.
- You must migrate all legacy data to the new system.
- You must implement best practices for X++ coding, the data model, caching, and security.
- All new code must be unit tested in a development environment and then validated by the QA team before code is added to source control. **Business**

#### processes

- You must configure vendor trade agreements.
- Products must be shipped directly from suppliers to customers depending on customer location to save indirect costs.
- You must collect customer feedback on products shipped directly from vendors.
- You must deploy code to a UAT environment for testing before deploying code to production.
- You must validate all entries for the purchase order creation form.
- You must develop a web portal that allows customers to browse products, place orders, and check order status. Product data for the web portal must be integrated as periodic batches.

### Business systems

- You must install and configure a third-party solution for credit card processing within Dynamics 365 Finance. The third-party company will provide a deployable package.
- The workers compensation application must be able to call an API to update worker compensation details in Dynamics 365 Finance.
- You must develop a process to import payroll journals into the system.
- You must configure the warehouse mobile device portal for warehouse operations.
- You must install a third-party solution to support web portal integration. The solution is supplied as a source code model file.

#### Vendor exclusion list

You must develop a new solution to maintain a Vendor exclusion list for each customer and item combination. The solution must meet the following requirements:

- Isolate all new vendor exclusion codes as a new assembly by creating a table named VendExclusions.
- Create an index for the table named PrimaryIdx that uses the following fields: CustAccount, ItemId, VendAccount.
- Ensure that users can open the Vendor Exclusion list report from the customer master form. The list must display the customer account, Item ID, and Vendor account fields.
- Implement the Excel integration for the Vendor Exclusion List form.
- Provide functionality to periodically export the Vendor exclusion list to prepare reports by using standard reporting capabilities of Dynamics 365 Unified Operations.
- Develop necessary security permissions to view and maintain the new Vendor exclusion list functionality and reporting. Users with maintain rights will be able create, update, and delete the exclusion list. Permissions must be assigned to security roles to match company security model.
- Maintain referential integrity with other tables.
- Users must be presented with a warning message before a direct delivery purchase order is created for a vendor in exclusion list.
- Sales managers must be alerted when a new exclusion record is added to the system.

#### Security

- You must implement the record level audit feature to identify the users who created the record.
- Grant specific users rights to maintain the vendor exclusion list by using Excel.
- You must implement validation to check whether a proposed direct delivery purchase order vendor is on the exclusion list for the customer and product combination.

#### Issues

User1 is not able to access many features in the system. You must provide User1 administrator rights.

A sales manager suspects a data-related issue in the vendor exclusion list. User1 must identify the user who created the referenced exclusion records.

Developer2 joins the company and does not have access to a development environment or source control.

User2 reports performance issues when they generate direct delivery purchase orders after current updates are applied.

User2 reports that they cannot access new functionality and reports.

#### QUESTION 1

DRAG DROP

You need to deploy the web portal integration solution.

Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

**Select and Place:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: You must install and configure a third-party solution for credit card processing within Dynamics 365 Finance. The third-party company will provide a deployable package.

You must develop a web portal that allows customers to browse products, place orders, and check order status. Product data for the web portal must be integrated as periodic batches. You must configure the warehouse mobile device portal for warehouse operations.

You must install a third-party solution to support web portal integration. The solution is supplied as a source code model file.

Step 1: Add the package to source control and check in the changes.

Deployable packages from third parties can be manually installed on a development VM, and the installed artifacts can then be added to source control.

Step 2: Import the model into a Development environment.

Install a model in a development environment

Step 3: Synchronize the models in the Developer environment by using Get latest feature

Because the models and runtime packages are in source control, other developers who use other development environments can just synchronize the models and packages to their workspace by using the Get latest feature of source control.

Step 4: Build and create a deployment package

The build process will include this runtime package in the final deployable package. This allows customers to take the deployable package from the build and have one package to deploy to their environments. The one package includes both custom solutions and all the third party solutions.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-tools/manage-runtime-packages>

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-tools/manage-runtime-packages#deploying-third-party-code>



## Question Set 2

### QUESTION 1

You are a Dynamics 365 Finance and Operations developer. You are testing a workflow in a user acceptance testing environment.

You need to ensure that a specific user can accept purchase requisitions only if the requisition is in a specific status.

Which two options can you configure to achieve the goal? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. manual decision
- B. approval process
- C. conditional decision
- D. automated task
- E. manual task

**Correct Answer:** BC

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

B: The approval step that you're configuring might be required only if specific conditions are met.

C: A conditional decision is a point at which a workflow divides into two branches. The system determines which branch is used by evaluating the submitted document to determine whether it meets specific conditions.

Reference: <https://docs.microsoft.com/en-sg/dynamics365/fin-ops-core/fin-ops/organization-administration/configure-conditional-decision-workflow>

**QUESTION 2** You are a Dynamics 365 Finance developer.

Several users check out a custom form version control and modify the form.

You need to find the user that has added a specific line of code to the form.

What should you do?

- A. Open the object in Object Designer, select the title of the object, and then right-click **View History**.
- B. In Solution Explorer, navigate to the object and right-click **View History**.
- C. Using Visual Studio, navigate to the object. Add the object to a new solution, and then right-click **View History**.
- D. Using Visual Studio, navigate to the object in Application Explorer and right-click **View History**.

**Correct Answer:** D

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

In Visual Studio, Go to source control explorer > Select the object > right click > View history

Reference: <https://dynamicsuser.net/ax/f/developers/93354/how-to-rollback-a-change-set-completely-automatically-in-tfs>

**QUESTION 3** You are a Dynamics 365 Finance developer.

You need to ensure that an integration is triggered when a specific process starts.

Which tool should you use to retrieve the status from the Production order?

- A. Batch job
- B. Periodic flow
- C. Business event
- D. Recurring Data Entity export

**Correct Answer:** C

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Business events can be used as triggers from D365FO in Power Automate/MS Flow in an end to end way.

Reference: <https://community.dynamics.com/ax/b/happyd365fo/posts/triggers-using-business-event-in-power-automate-and-microsoft-dynamics-365-finance-and-operations>

#### QUESTION 4 HOTSPOT

You create the following cloud-based Dynamics 365 Finance environments:

Name	Comments
Development	Visual Studio workspace is configured and connected to an Azure DevOps branch.
Build	A Build pipeline is configured.
Standard Acceptance Test	This is a sandbox environment for testing customizations.

A developer creates code extensions in the Development environment. The developer checks the code changes into an Azure DevOps branch.

You need to deploy the code changes to the Standard Acceptance Test environment.

What should you do? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Build the code in the DevOps pipeline.

Box 2: Asset library

Run the export to the Asset library in Microsoft Dynamics Lifecycle Services (LCS).

Box 3: Select Maintain and Apply updates.

eprovision the target environment

If you copy a database between environments, the copied database won't be fully functional until you run the Environment reprovisioning tool to make sure that all Commerce components are up to date.

Follow these steps to run the Environment reprovisioning tool.

1. In your project's Asset Library, in the Software deployable packages section, click Import.
2. From the list of shared assets, select the Environment Reprovisioning Tool.
3. On the Environment details page for your target environment, select Maintain > Apply updates.

4. Select the Environment Reprovisioning tool that you uploaded earlier, and then select Apply to apply the package.
5. Monitor the progress of the package deployment.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/database/dbmovement-scenario-exportuat#back-up-to-the-asset-library>





## Testlet 1

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The company creates a Lifecycle Services (LCS) implementation project and completes Dynamics 365 Finance onboarding.

The company maintains production, quality assurance (QA), development, user acceptance testing (UAT), and build environments.

### Requirements

#### General

- You must configure a cloud-based Dynamics 365 Finance development environment and enable code extension that support updates. ▪ You must configure version control and a Build environment.
- You must migrate all legacy data to the new system.
- You must implement best practices for X++ coding, the data model, caching, and security.
- All new code must be unit tested in a development environment and then validated by the QA team before code is added to source control. **Business**

#### processes

- You must configure vendor trade agreements.
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- You must collect customer feedback on products shipped directly from vendors.
- You must deploy code to a UAT environment for testing before deploying code to production.
- You must validate all entries for the purchase order creation form.
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- The workers compensation application must be able to call an API to update worker compensation details in Dynamics 365 Finance.
- You must develop a process to import payroll journals into the system.
- You must configure the warehouse mobile device portal for warehouse operations.
- You must install a third-party solution to support web portal integration. The solution is supplied as a source code model file.

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You must develop a new solution to maintain a Vendor exclusion list for each customer and item combination. The solution must meet the following requirements:

- Isolate all new vendor exclusion codes as a new assembly by creating a table named VendExclusions.
  - Create an index for the table named PrimaryIdx that uses the following fields: CustAccount, ItemId, VendAccount.
  - Ensure that users can open the Vendor Exclusion list report from the customer master form. The list must display the customer account, Item ID, and Vendor account fields.
  - Implement the Excel integration for the Vendor Exclusion List form.
  - Provide functionality to periodically export the Vendor exclusion list to prepare reports by using standard reporting capabilities of Dynamics 365 Unified Operations.
  - Develop necessary security permissions to view and maintain the new Vendor exclusion list functionality and reporting. Users with maintain rights will be able create, update, and delete the exclusion list. Permissions must be assigned to security roles to match company security model.
  - Maintain referential integrity with other tables.
  - Users must be presented with a warning message before a direct delivery purchase order is created for a vendor in exclusion list. ▪
- Sales managers must be alerted when a new exclusion record is added to the system.

#### Security

- You must implement the record level audit feature to identify the users who created the record.
- Grant specific users rights to maintain the vendor exclusion list by using Excel.
- You must implement validation to check whether a proposed direct delivery purchase order vendor is on the exclusion list for the customer and product combination.

#### Issues

User1 is not able to access many features in the system. You must provide User1 administrator rights.

A sales manager suspects a data-related issue in the vendor exclusion list. User1 must identify the user who created the referenced exclusion records.

Developer2 joins the company and does not have access to a development environment or source control.

User2 reports performance issues when they generate direct delivery purchase orders after current updates are applied.

User2 reports that they cannot access new functionality and reports.

#### QUESTION 1 HOTSPOT

You need to implement the integration for the Vendor Exclusion List form.

What should you do? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Table extension

Isolate all new vendor exclusion codes as a new assembly by creating a table named VendExclusions. Implement the Excel integration for the Vendor Exclusion List form.

The table extension object allows you to add additional fields or to change some properties on a table provided by the Dynamics 365 Business Central service. In this way, you can add data to the same table and treat it as a single table.

Box 2: Unique key

Create an index for the table named PrimaryIdx that uses the following fields: CustAccount, ItemId, VendAccount.

Box 3: Build and synchronize the database.

A project property lets you specify that the synchronize operation for the database should be performed every time that you build the project. This can be useful when you're making changes to the table structure for an application. Each time that you build, you will know that the database is synchronized with the tables as they are defined in the project.

Reference: <https://docs.microsoft.com/en-us/dynamics365/business-central/dev-itpro/developer/devenv-table-ext-object>

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-tools/build-operations#synchronizing-the-database-at-each-build>

## QUESTION 2

### HOTSPOT

The system includes the following code: (Line numbers are included for reference only.)

```
01 public boolean checkVendor(CustAccount _custAccount, ItemId _itemId,
    VendAccount _vendAccount)
02 {
03     boolean ret;
04     CustAccount custAccount;
05     ItemId itemId;
06     VendExclusion vendExclusion;
07     select vendExclusion
08     index hint PrimaryIdx
09     where vendExclusion.CustAccount == _custAccount
        && vendExclusion.ItemId == _itemId
        && vendExclusion.VendAccount == _vendAccount;
10     if (vendExclusion.RecId)
11     {
12         ret = false
13     }
14     return ret;
15 }
```



You need to apply changes to address User2's issues.

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: User2 reports performance issues when they generate direct delivery purchase orders after current updates are applied.

Also: You must implement validation to check whether a proposed direct delivery purchase order vendor is on the exclusion list for the customer and product combination.

Box 1: No

The firstOnly keyword helps speed up the fetch by returning only the first row.

Box 2: No

Box 3: Yes

Box 4: Yes

RecId stands for Record Identifier. It is often called RowId (row identifier). It is a unique and incremental value stored with each and every row of the table. In Microsoft Dynamics AX 2012 and Microsoft Dynamics 365 for Finance and Operations, RecId is used as unique identifiers and to create relations between tables.

Another important point is the difference between RecId and Id. In simple words, RecId is generated by the kernel whereas the Id is generated by the application itself.

RecId is used to find out the unique row in the table.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-ref/xpp-data-query>

<https://community.dynamics.com/ax/b/nevoitechax/posts/what-is-recid-in-microsoft-dynamics-ax-365fo>



## Testlet 2

### Case study

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### Background

#### Overview

First Up Consultants provides Commercial Cleaning services to its clients. The company purchases all its cleaning supplies from Best For You Organics Company.

First Up Consultants is using a cloud-based Dynamics 365 Finance instance. The system has a foundation table named CashDisc that contains one cash discount record for each cash discount type.

Best For You Organics Company invoices First Up Consultants and allows cash discounts based on how fast an invoice is paid. First Up Consultants is entitled to a two percent discount from Best for You Organics for any invoice that is paid within 10 days and has a minimum invoice amount of \$2,500. **Business requirements**

All new and extended objects must be located in an existing model named FinanceExt. The creation of new models is not permitted.

Best For You Organics Company requires that First Up Consultants apply specific minimum invoice amounts to each cash discount record. A cash discount may only be applied when the minimum invoice amount requirement has been met. The new field must be added to the CashDisc form grid with the allowable visible number of characters set to 10.

First Up Consultants must retrieve the required Cash Discount methods and corresponding minimum invoice amounts directly from Best For You Organics Company's enterprise resource planning (ERP) system.

The Chief Financial Officer (CFO) requires the following reports:

- A report that shows all outstanding invoices, their cash discount types including the new minimum threshold applicable, and the amount of the discount. The report must only be accessed by users who are members of the Accounts Payable Manager role.
- You must create a Microsoft Excel workbook that lists unpaid invoices to Best For You Organics Company that have a due date earlier than 5/1/2019 and an Invoice Amount between \$20,000 and \$100,000.

Cash discounts for unpaid invoices must be updated with the new minimum invoice amounts.

#### Financial requirements

##### Vendor Invoices Past Due form

You must be able to filter the grid on the Vendor Invoices Past Due form. By default, you must filter the form based on the Due Date, Invoice Amount, and Vendor columns. Users must be able to apply reusable user-specific filters to a page using multiple fields.

##### CashDisc form

You must extend the CashDisc form to add a new field named MinimumInvoiceAmount to the form. You must add a new Extended Data Type to the extension model for the new field. The new field must be added above the discount method field. The field must display 10 characters.

The accounts payable manager and the accounts payable clerk have Delete access to the form. You must alter permissions to limit accounts payable clerks to have only View access to the form.

##### Cash Discount Records report

You must create a report that shows a list of CashDisc records. You must include the MinimumInvoiceAmount field and filtered data by using the CashDisc.DiscMethod field. Applicable security objects must be created in the existing "FinanceExt" model and configured so the report is accessible by those users to the accounts payable role.

## Batch jobs

You must create a batch job that runs on the last day of each month to update the current unpaid invoices with changes in the minimum invoice amount. The job must meet the following requirements:

- Accept the following parameters: Vendor, DueDate.
  - Be callable by an Action menu item.
  - Allow users to specify vendors to include in the job. ▪
- Use SysOperation Framework for all batch jobs.

You must create a batch job to identify modified CashDisc.MinimumInvoiceAmount values and apply these to open Purchase Lines.

### QUESTION 1 HOTSPOT

You need to modify the CashDisc form to meet the requirements.

Which objects should you use? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

Hot Area:

### Answer Area

#### Action

Create the following object on the CashDisc table:

	▼
duplicate	
extension	
inheritance	
overlaying	

Add a

	▼
relation	
field	
display method	
field group	

to the table and then add the object to an existing

	▼
index	
field group	
map	
relation	

Restore the

	▼
design	
data source	
form parts	
form methods	

of the CashDisc form.

Correct Answer:



## Answer Area

### Action

Create the following object on the CashDisc table:

	▼
duplicate	
extension	
inheritance	
overlayering	

Add a

	▼
relation	
field	
display method	
field group	

to the table and then add the object to an existing

	▼
index	
field group	
map	
relation	

Restore the

	▼
design	
data source	
form parts	
form methods	

of the CashDisc form.

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: CashDisc form

You must extend the CashDisc form to add a new field named MinimumInvoiceAmount to the form. You must add a new Extended Data Type to the extension model for the new field. The new field must be added above the discount method field. The field must display 10 characters.

Box 1: extension

To add a new field to an existing table, you must first create a table extension.

Box 2: field

Box 3: field group

Box 4: data source

Often, the information that is stored in existing tables doesn't satisfy customer requirements. Therefore, additional tables must be created, and data from those tables must be shown on pages.

You can add new data sources to existing forms through extension. Follow these steps.

1. In the extension model, create a form extension for the selected form.
2. Right-click the form extension, and then select New Data Source.

Reference:



<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/add-datasource>

**QUESTION 2** You need to modify the environment to meet User1's requirements.

What should you do?

- A. Create an extension of CashDisc in a new project and add the field to the extended table,
- B. Create a new table named CashDiscExtension in the project.
- C. Use Open Designer to add the field to the table.
- D. Create an overlay of CashDisc in a new project and add the field.

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: A sales manager suspects a data-related issue in the vendor exclusion list. User1 must identify the user who created the referenced exclusion records.

**QUESTION 3** You need to update the CashDisc report to meet the requirements.

What should you do?

- A. Delete the existing CashDisc report in the extension model and create a new report.
- B. Extend the existing CashDisc report in the extension model and add the new field to the design.
- C. Duplicate the existing CashDisc report in the extension model and add the new field to the design.
- D. Customize the existing CashDisc report in the overlaying model and add the new field to the design.

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

**Question Set 3**

**QUESTION 1**

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You are adding a new field to the SalesTable form.

You must use an extension to add a status field onto the form.

You need to create the extension in the Application Object Tree (AOT) and add the extension to the demoExtensions model.

Solution: Navigate to the user interface forms section for the SalesTable form and create an extension.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

You can customize model elements by creating extensions.

In Dynamics 365 Finance and Operations, the new fields will need to be added via a table extension. Create the extensions on the SalesTable.

Reference: <https://stoneridgesoftware.com/how-to-extend-sales-order-update-functionality-to-custom-fields-in-d365-finance-and-operations/>

**QUESTION 2**

**Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.**

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You are adding a new field to the SalesTable form.

You must use an extension to add a status field onto the form.

You need to create the extension in the Application Object Tree (AOT) and add the extension to the demoExtensions model.

Solution: Navigate to the user interface forms section for the SalesTable form and create a customization.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer: B**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Instead navigate to the user interface forms section for the SalesTable form and create an extension.

Note: In Dynamics 365 Finance and Operations, the new fields will need to be added via a table extension. Create the extensions on the SalesTable.

Reference: <https://stoneridgesoftware.com/how-to-extend-sales-order-update-functionality-to-custom-fields-in-d365-finance-and-operations/>

**QUESTION 3**

**Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.**

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You are adding a new field to the SalesTable form.

You must use an extension to add a status field onto the form.

You need to create the extension in the Application Object Tree (AOT) and add the extension to the demoExtensions model.

Solution: Add a new form object to the project and name the form **SalesTable.Extension**.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer: B**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Instead navigate to the user interface forms section for the SalesTable form and create an extension.

Note: In Dynamics 365 Finance and Operations, the new fields will need to be added via a table extension. Create the extensions on the SalesTable.

Reference: <https://stoneridgesoftware.com/how-to-extend-sales-order-update-functionality-to-custom-fields-in-d365-finance-and-operations/>

#### **QUESTION 4**

DRAG DROP

You are a Dynamics 365 Finance developer for a company that sells pre-owned vehicles. When the company acquires a new vehicle, vehicle identification (VIN) numbers are added to the VIN field in the CustTable.

You need to create an event handler to validate that new VIN values are at least 10 characters long. Validation must occur when records are saved.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

**Select and Place:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Step 1: Add the event handler method to a class.

Step 2: Copy the validateWrite event handler on the CustTable object. validateWrite is published Table method. ValidatingWriting is the preceeding event.

Step 3: Add code to perform the validation.

Incorrect Answers: validatingWrite is not a published Table method.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/customization-overlayering-extensions>

**QUESTION 5** A company has an extension that makes changes to a base form.

You need to identify all extension changes made to the base form.

What are two possible ways to achieve the goal? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. In the search bar on the form extension element, enter the text **c:**.
- B. In the search bar on the base form, enter the text **e:**.
- C. Right-click the base form and select **view references**.
- D. In the search bar on the form extension element, enter the text **e:**.
- E. In the search bar on the base form, enter the text **c:**.

**Correct Answer:** CD

**Section: [none]**

**Explanation**

#### Explanation/Reference:

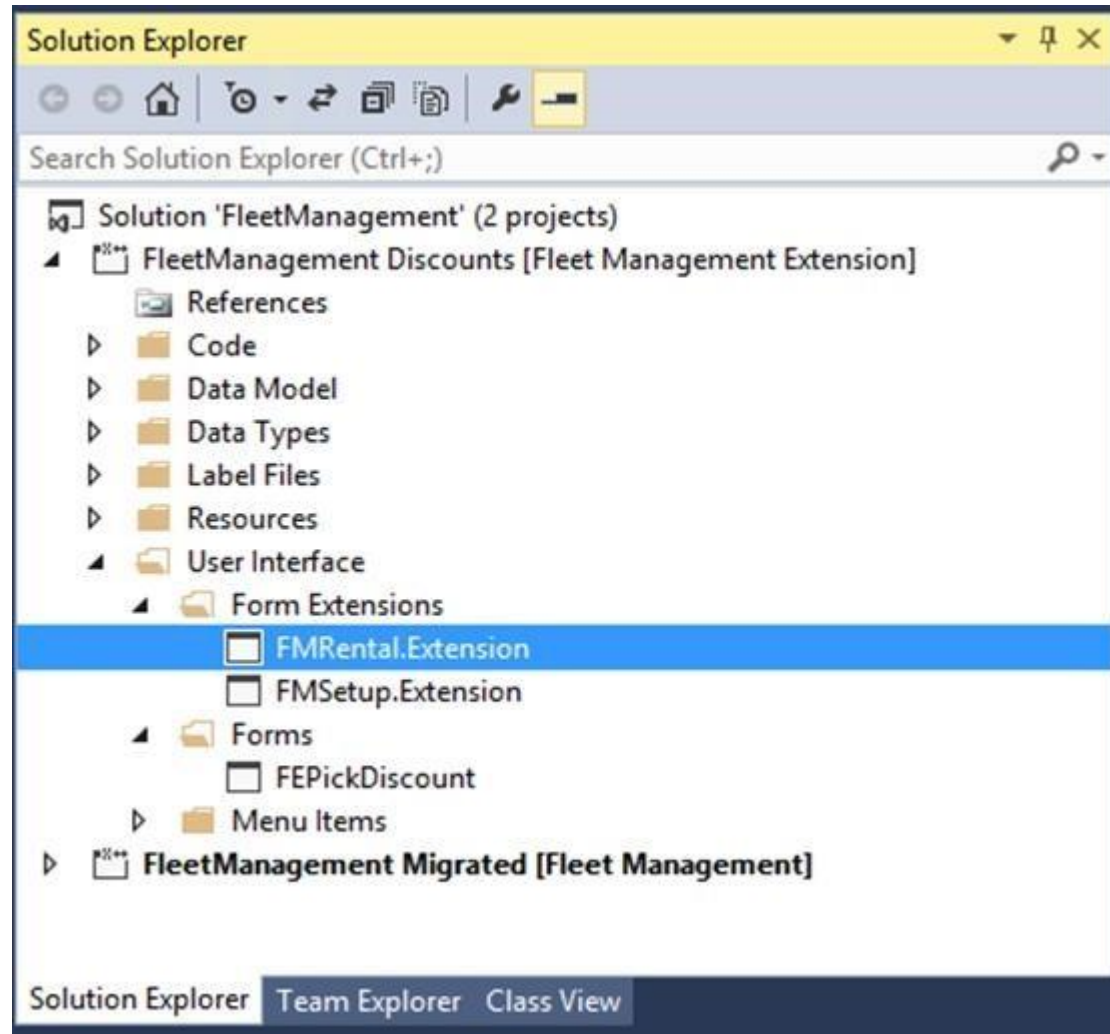
Explanation:

C: Customization and Extension

View references	Create a diagram that shows the other elements that reference the selected element.
-----------------	---

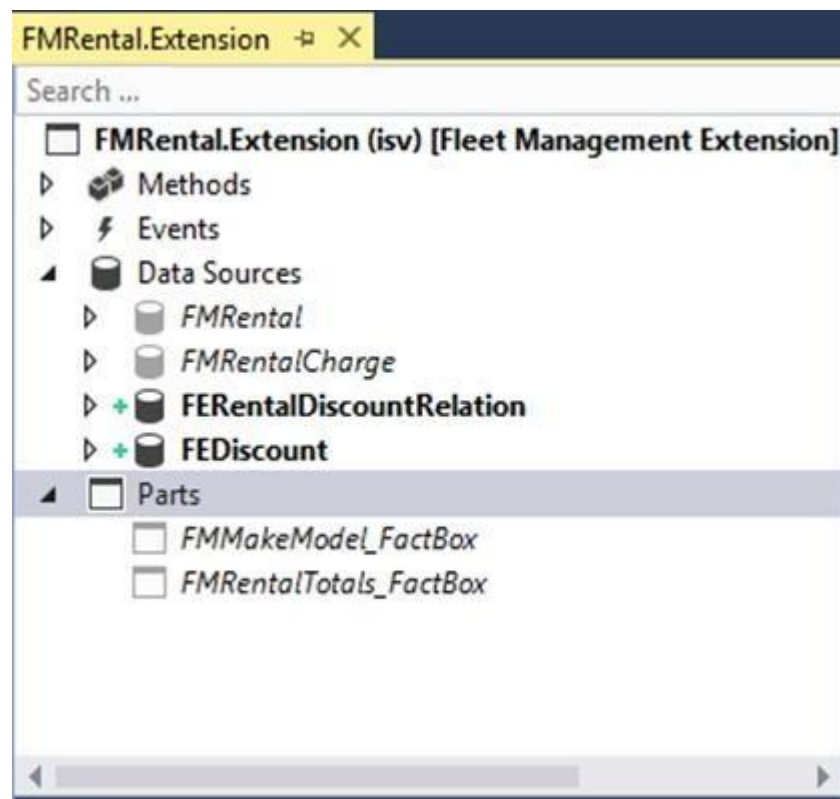
D: Example: Navigate to FMRental.Extension in the Tree Designer

1. In the Visual Studio, in Solution Explorer, in the FleetManagement Discounts project, expand User Interface > Form Extensions.



The FMRental.Extension element is an extension element that extends the functionality of the FMRental form by adding two new data sources and a new tab control.

2. In Solution Explorer, double-click FMRental.Extension to open the designer.



3. In the designer's search box, type 'e:' as shown in the image below. This filters the current designer to only show nodes that belong to the current extension.



Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/customize-model-elements-extensions>

#### QUESTION 6 HOTSPOT

You are creating entities that will have unmapped fields.

You need determine which types of unmapped fields to use.

Which field types should you use? To answer, drag the appropriate field types to the correct requirements. Each field type may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Computed

Computed field: Value is generated by an SQL view computed column.

During read, data is computed by SQL and is fetched directly from the view.

Box 2: Computed

Box 3: Virtual

Virtual field:

Is a non-persisted field.

Is controlled by custom X++ code.

Read and write happens through custom X++ code.

Virtual fields are typically used for intake values that are calculated by using X++ code and can't be replaced by computed columns.

Box 4: Virtual

Virtual field is a non-persisted field.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/data-entities/data-entity-computed-columns-virtual-fields>

**QUESTION 7** You are a Dynamics 365 Finance and Operations developer.

You have a form that displays customer records by using a listpage control. You must add related sales total information for the selected customer to the form.

You need to display the required related sales total information.

What should you add to the form?

- A. a custom lookup
- B. a tile
- C. a factbox
- D. an external feed
- E. a quick filter

**Correct Answer: C**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

A list page presents a set of data on a user interface that is optimized so that you can browse records, find the right record, and then take an action upon that record. The list page lets the user search, filter, and sort the data. FactBoxes on the right side of the grid show related data for the active record.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/user-interface/list-page-form-pattern>

**QUESTION 8** You are developing a customization for Dynamics 365 Unified Operations.

The customization must extend objects from the Application Foundation package.

You need to create and configure a new model for the customization.

Which two actions should you perform? Each correct answer presents part of the solution.

**NOTE:** Each correct selection is worth one point.

- A. Create an extension class that references the Application Foundation.
- B. Assign the model to the USR layer.
- C. Reference the Application Foundation package when creating the extension model.
- D. Create a new model that builds into two its own separate assembly.
- E. Create a new model that is part of an existing package.

**Correct Answer: A**

**Section: [none]**

**Explanation**



**Explanation/Reference:**

Explanation:

A: You must create a class.

D: Extension lets you extend existing artifacts in a new model.

A model that contains only extension customizations can be compiled into its own assembly and be deployed in its own package.

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/class-extensions>

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-tools/model-split>

**QUESTION 9** You are working with extended data types in Visual Studio.

You need to create an extension of an Extended Data Types (EDT) that is derived from base data types.

Which three properties can be modified? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. String size
- B. IsExtensible
- C. Form help
- D. Alignment
- E. Label

**Correct Answer:** ACE

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

String size can be defined only on root EDTs. The system will use the largest value that is defined across the EDT and its extensions.

Labels and Help text properties can be changed by an extension, but only one value can remain.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/extensible-edts>

**QUESTION 10**

You have a table in which multiple properties must be changed. Multiple table properties are locked down at the base table and must not be overwritten.

You need to modify the table properties by extending the table.

Which table property can you populate in a table extension by using the property sheet?

- A. Cache lookup
- B. Modified date time
- C. Configuration key
- D. Table group

**Correct Answer:** C

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

You can now modify the following properties through the property sheet:

- Created By





- Created Date Time
- Modified By
- Modified Date Time
- Country Region Codes

Reference:

<https://docs.microsoft.com/sv-se/dynamics365/fin-ops-core/dev-itpro/extensibility/modify-properties>

#### QUESTION 11

DRAG DROP

A company has a Dynamics 365 Finance and Operations environment.

You need to implement indices for new tables.

Which types of indexes should you use? To answer, drag the appropriate types of indexes to the correct requirements. Each type of index may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

**NOTE:** Each correct selection is worth one point.

**Select and Place:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Primary

Box 2: Clustered

A clustered index is a special type of index that reorders the way records in the table are physically stored. Box

3: Non-clustered

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/indexes/clustered-and-nonclustered-indexes-described>

**QUESTION 12** You are creating a new form in Visual Studio.

You need to apply the Simple List pattern and apply the pattern to a form.

What are the two possible ways to achieve the goal? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. Use form statistics.
- B. Use the Application Object Tree (AOT).
- C. Use metadata properties.
- D. Use the designer.

**Correct Answer:** AD

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

A: In Microsoft Visual Studio, on the Dynamics 365 menu, expand the Add-ins option, and click Run form patterns report. A background process generates the report. After several seconds, a message box appears in Visual Studio to indicate that the report has been generated and inform you about the location of the Form Patterns report file. You can filter this file by pattern to find forms that use a particular pattern.

D: Right-click Design, point to Apply pattern, and then click Details Master.

Reference:

<http://axtechsolutions.blogspot.com/2018/09/form-patterns-in-d365.html>

### QUESTION 13

You are a Dynamics 365 Finance and Operations developer. You have a solution that records product weights.

You must store up to four decimals of precision by using a standard Extended Data Type (EDT).

You need to add the field in a new table.

Which EDT should you extend?

- A. AmountMST
- B. MarkupValue
- C. Weight
- D. WeightBase

**Correct Answer: D**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Weight data can be maintained with a maximum of two decimals by default. If you require the ability to enter, maintain, and view weight data with a maximum precision of six decimals, you must extend the decimal point precision for the WeightBase extended data type.

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/decimal-point-precision>

### QUESTION 14

**Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.**

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You are developing a form for Dynamics 365 Finance.

You need to add a button that allows users to run a report.

Solution: Create an output menu item. Add the output menu item to the form button and then link the report to the output menu item.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer: B**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Instead create an action menu item.

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/user-interface/action-controls>

#### QUESTION 15

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You are developing a form for Dynamics 365 Finance.

You need to add a button that allows users to run a report.

Solution: Create an action menu item. Add the action menu item to the form button and then link the report to the action menu item.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/user-interface/action-controls>

#### QUESTION 16

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You are developing a form for Dynamics 365 Finance.

You need to add a button that allows users to run a report.

Solution: Create a display menu item. Add the menu display item to the form button and then link the report to the display menu item.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Instead create an action menu item.

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/user-interface/action-controls>

#### QUESTION 17

You are a Dynamics 365

Finance developer.

You must extend the validate method of the SalesLine table by using Chain of Command. The value of a variable named SalesPrice must be greater than or equal to zero when adding new lines.

You need to create an extension class.

Which two code segments can you use? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

```
[ExtensionOf(tableStr(SalesLine))]  
final class SalesLine_Extension  
{  
    boolean validateWrite(boolean _skipCreditLimitCheck)  
    {  
        boolean ret;  
        ret = next validateWrite(_skipCreditLimitCheck);  
        if (ret && this.SalesPrice < 0)  
        {  
            ret = false;  
            return ret;  
        }  
    }  
}
```

```
[ExtensionOf(tableStr(SalesLine))]  
final class SalesLine_Extension  
{  
    boolean validateWrite(boolean _skipCreditLimitCheck = false)  
    {  
        boolean ret;  
        ret = next validateWrite(_skipCreditLimitCheck);  
        if (ret && this.SalesPrice < 0)  
        {  
            ret = false;  
            return ret;  
        }  
    }  
}
```

A.

B.



```
[ExtensionOf(tableStr(SalesLine))]
public class SalesLine_Extension
{
    boolean validateWrite(boolean _skipCreditLimitCheck)
    {
        boolean ret;
        ret = next validateWrite(_skipCreditLimitCheck);
        if (ret && this.SalesPrice < 0)
        {
            ret = false;
            return ret;
        }
    }
}

[ExtensionOf(tableStr(SalesLine))]
final class SalesLine_Extension
{
    boolean validateWrite(boolean _skipCreditLimitCheck)
    {
        boolean ret;
        try
        {
            ret = next validateWrite(_skipCreditLimitCheck);
        }
        catch
        {
            ret = false;
        }
        if (ret && this.SalesPrice < 0)
        {
            ret = false;
        }
        return ret;
    }
}
```



C.

D.



**Correct Answer:** AD

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Incorrect Answers:

B: Can't use = false in the 4th line.

C: Second line must be start final class, public class

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/data-entities/validations-defaults-unmapped-fields> <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/method-wrapping-coc>

#### QUESTION 18

You are a Dynamics 365 Finance developer. You have the following Extended Data Types (EDTs):

Name	Comments
AccountBase	Root EDT
AccountId	Derives from AccountBase

You plan to modify the EDT properties by using an extension.

You need to determine which operations can be performed.



Which operation is possible?

- A. Create an extension for AccountBase and decrease the field size.
- B. Create an extension for AccountId and increase the field size.
- C. Create a derived EDT for AccountId and decrease the field size.
- D. Create an extension for AccountBase and increase the field size.

**Correct Answer:** D

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

You can only set the new String size to a value equal to or larger than the base EDT value.

Incorrect Answers:

B, C: You can only modify the value if the EDT does not extend from another EDT.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/modify-edt>

#### QUESTION 19

You have a table in which multiple properties must be changed. Multiple table properties are locked down at the base table and must not be overwritten.

You need to modify the table properties by extending the table.

Which table property can you populate in a table extension by using the property sheet?

- A. Primary index
- B. Configuration key
- C. Save data per company
- D. Modified date time



**Correct Answer:** D

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

You can now modify the following properties through the property sheet:

- Modified Date Time
- Created By
- Created Date Time
- Modified By
- Country Region Codes

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/modify-properties>

#### QUESTION 20

HOTSPOT

You are a Dynamics 365 Finance developer.

You need to add a new status named **InTransit** to the SalesTable.SalesStatus field and use the status in code.

What should you do? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Create an extension of SalesStatus

To modify properties on an existing field in a table, you must first create an extension for the table. Box

2: SalesStatus::InTransit

Incorrect Answers:

Overlay: Overlaying code, the now-outdated way to implement customer-specific functionality under Dynamics AX, involved customizing programming within Microsoft's code and recompiling the application.

Reference:

<https://docs.microsoft.com/sv-se/dynamics365/fin-ops-core/dev-itpro/extensibility/modify-existing-field>

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/extensible-enums>

**QUESTION 21** You add a field to the SalesTable entity by using an extension.

You need to ensure that the new field is available for use in forms, reports, and code.

What are three possible ways to achieve this goal? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. Right-click the table and select **Synchronize**.
- B. Navigate to the Dynamics 365 menu and select **Synchronize database**.
- C. Right-click the solution and select **Synchronize with database**.
- D. Set the project property for Synchronize database on build to **true** and build the solution.
- E. Right-click the project and select **Synchronize with database**.



**Correct Answer:** ADE

**Section: [none]**

**Explanation**

**Explanation/Reference:**

**QUESTION 22**

DRAG DROP

An organization uses Visual Studio to develop customizations for Dynamics 365 Supply chain Management.

You need to create an extension for the CustTable form and add the extension to the Visual Studio project.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

**Select and Place:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Step 1: In Solution Explorer, drag the CustTable form into the project.  
Step 2: In The Application Object Tree (AOT), right-click the CustTable form. Step  
3: Select Create extension.

Note: To create an extension (in general terms), follow these steps:

1. In the Application Explorer window, expand the AOT node.
2. Expand the node for the element that you want to extend. For example, in Classic view, extend the Data Models node, and then extend the Tables node to view all available tables.
3. Right-click the element that you want to extend.
4. Select Create extension to add an extension to your current project. Select Create extension in new project if you want to add the extension to a new project. The element will be added to a project in the Solution Explorer window, and it will open in the element designer.

Reference:

<https://docs.microsoft.com/en-us/dynamics365/business-central/dev-itpro/developer/devenv-extension-example>

### QUESTION 23

#### HOTSPOT

A user reports that a form takes a long time to load. You suspect that the issue relates to a display method.

You need to resolve the issue.

Which actions should you perform? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Yes

The caching will avoid executing the display method unnecessarily.  
To improve the performance of a display method, you can cache the method.

Box 2: No

Box 3: No

Box 4: No

Reference: <https://docs.microsoft.com/en-us/dynamicsax-2012/developer/using-the-display-method-modifier>



## Question Set 1

### QUESTION 1

#### HOTSPOT

You are a Dynamics 365 Finance and Operations developer. You have the following code: (Line numbers are created for reference only.)

```

01 class TestQuestion
02 {
03     public static void main(Args _args)
04     {
05         TestQuestion testQuestion = new testQuestion();
06         testQuestion.run();
07     }
08     public void run()
09     {
10         TmpFrmVirtual tmpFrmVirtual;
11         str salesId;
12         int salesQty
13         tmpFrmVirtual.Id = "SID1234";
14         salesQty = 5;
15         this.updateValues(tmpFrmVirtual, salesQty);
16         info(tmpFrmVirtual.Id);
17         info(salesQty);
18     }
19     public void updateValues(TmpFrmVirtual _tmpFrmVirtual, str _salesQty)
20     {
21         TmpFrmVirtual tmpFrmVirtual = _tmpFrmVirtual;
22         int salesQty = _salesQty;
23         tmpFrmVirtual.Id = "SID1234"-Updated";
24         salesQty = 10;
25     }
26 }

```

Which values does the info() method return? To answer, select the appropriate option in the answer area.

**NOTE:** Each correct selection is worth one point.

Hot Area:

Correct Answer:

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1: SID1234

Parameters

All methods have their own scope. A method can take one or more parameters. Within the scope of the method, these parameters are treated as local variables and are initialized with a value from the parameter in the method call. All parameters are passed by value, which means that you can't change the value of the original variable. You can change only the local variable in the method. This local variable is a copy of the original variable.

Box 2: 5

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-ref/xpp-classes-methods>

**QUESTION 2** You are a Dynamics 365 Finance developer.

You have a table named FMVehicle that contains a field named VehicleId. The table has a clustered index named VehicleIdIdx on the VehicleId field. You declare a table buffer named **vehicle** to refer to the table.

You need to select all records from the FMVehicle table in ascending order based on VehicleId field in the vehicle variable.

Which embedded-SQL statement should you use?

- A. `select vehicle index VehicleIdIdx;`
- B. `select vehicle order by VehicleId desc;`
- C. `select VehicleId from vehicle order by VehicleId asc;`
- D. `select vehicle order by VehicleIdIdx desc;`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer: C**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

All select statements use a table variable to fetch records. The results of a select statement are returned in a table buffer variable, here vehicle.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-ref/xpp-data-query>

**QUESTION 3** You are a Dynamics 365 Finance and Operations developer. You create a class.

You need to mark the class to ensure that when code is compiled, the process fails if a specific method is called in the source code.

Which attribute should you use?

- A. SysEntryPointAttribute
- B. getAttributes
- C. SysAttribute
- D. SysObsoleteAttribute

**Correct Answer: D**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

One use of the SysObsoleteAttribute class is to notify the compiler that the compile should fail if a particular method is called in the source code. The compiler rejects the compile, and displays the specific message that is stored in this use of the attribute.

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-ref/xpp-attribute-classes>

**QUESTION 4** HOTSPOT

You have a Dynamics 365 Finance and Operations environment.

You have the following code: (Line numbers are included for reference only.)

```

01 class SalesPriceDiscount
02 {
03     ...
04     public void calculatePrice
05     {
06         ...
07     }
08     public static AmountCur getDiscount(Percent markup)
09     {
10         ...
11     }
12 }
13 [ExtensionOf(classStr(SalesPriceDiscount))]
14 final class SalesPriceDiscountMy_Extension
15 {
16     public void calculatePrice()
17     {
18         ...
19         next calculatePrice()
20         ...
21     }
22 }

```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Yes

Class extension - Method wrapping and Chain of Command.

The functionality for class extension, or class augmentation, has been improved. You can now wrap logic around methods that are defined in the base class that you're augmenting. You can extend the logic of public and protected methods without having to use event handlers. When you wrap a method, you can also access public and protected methods, and variables of the base class. In this way, you can start transactions and easily manage state variables that are associated with your class.

Box 2: Yes

In the following example, the wrapper around doSomething and the required use of the next keyword create a Chain of Command (CoC) for the method. CoC is a design pattern where a request is handled by a series of receivers. The pattern supports loose coupling of the sender and the receivers

```
[ExtensionOf(classStr(BusinessLogic1))]
```

```
final class BusinessLogic1_Extension
```

```
{
```

```
    str doSomething(int arg)
```

```
    {
```

```
        // Part 1
```

```
        var s = next doSomething(arg + 4);
```

```
// Part 2  
return s;  
}  
}
```

Box 3: Yes

Instance and static methods can be wrapped by extension classes. If a static method is the target that will be wrapped, the method in the extension must be qualified by using the static keyword.

Box 4: No

Wrapper methods must always call next.

Note: Wrapper methods in an extension class must always call next, so that the next method in the chain and, finally, the original implementation are always called. This restriction helps guarantee that every method in the chain contributes to the result.

In the current implementation of this restriction, the call to next must be in the first-level statements in the method body.

Here are some important rules:

- Calls to next can't be done conditionally inside an if statement.
- Calls to next can't be done in while, do-while, or for loop statements.
- A next statement can't be preceded by a return statement.
- Because logical expressions are optimized, calls to next can't occur in logical expressions. At runtime, the execution of the complete expression isn't guaranteed.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/method-wrapping-coc>

#### QUESTION 5 HOTSPOT

You are a Dynamics 365 Finance and Operations developer.

You have the following code: (Line numbers are included for reference only.)





```
01 public void tryMethod(int a, int b)
02 {
03     try
04     {
05         info("One");
06         int c = a/b;
07         info("Two");
08     }
09     catch
10     {
11         info("Three");
12         if (a == 2);
13         {
14             return;
15         }
16         else if (a == 3)
17         {
18             b = 3;
19             retry;
20         }
21     }
22     finally
23     {
24         info("Four");
25     }
26     info("Five");
27 }
```



You need to evaluate the code.

What is the correct output for the method? To answer, select the appropriate option in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: One, Two, Four, Fire

The statements in the finally clause are executed when control leaves the try block, either normally or through an exception.

Box 2: One, Three, Four, Five

Box 3: One, Three

Return ends the call.

Box 4: One, Three, One, Two, Four, Five Retry  
restarts the try statement.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-ref/xpp-exceptions>

#### QUESTION 6 HOTSPOT

You have the following code:

```
public void CompareValues ()
{
    Date myDate = str2date('01/08/1901',123);
    boolean result1, result2, result3;
    result1 = (myDate + 1 == str2date('02/08/1901', 123));
    result2 = (int2str(real2int(myDate)) + 1 == str2date('02/08/1901', 123));
}
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Yes

Add 1 to a date adds one day.

Box 2: No

You cannot do a real2int conversion on a Date.

Reference: <https://docs.microsoft.com/en-us/dynamics365/customerengagement/on-premises/customize/types-of-fields>

**QUESTION 7** You are using the SysTest framework to test code in  
Visual Studio.

You need to create a unit test class.

Which three attributes can you use to create the class? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. TestFilter
- B. Priority
- C. Owner
- D. EntryPoint
- E. Test Property

**Correct Answer:** BCE



**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

The SysTest framework now supports the major test attributes in the adaptor to be on par with the MSTest framework adaptor. This includes attributes like Category, Owner, Priority, and Test Property.

Note:

The Priority attribute SysTestPriority, which requires an integer value, is now available. A priority can only be specified once, but is supported on both the class and method level, with method level taking precedence over class level.

The Owner attribute, SysTestOwner, has also been added. This attribute was technically already supported for filtering in the Test Toolbox window, but the attribute itself was missing in X++. Similar to Priority, an owner can only be specified once and is supported on both the class and method level, with the method level taking precedence.

SysTestProperty specifies a property and a value (two strings), and can now be used in the Test Toolbox window in Visual Studio. Test Property can be specified multiple times, and can exist on both the class and method level.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/perf-test/systest-filtering>

#### QUESTION 8 HOTSPOT

You have the following class definition:

```
class UnitConv
{
    public static real PoundsToKilograms(real _pounds)
    {
        return _pounds * 0.45359237;
    }
    public static real FahrenheitCelsius(real _fahrenheit)
    {
        return (_fahrenheit - 32) * 5/9;
    }
}
```



You need to create an extension class and create a new static method in it that converts miles to kilometers and then call the method from another class.

How should you complete the code and call the method? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: final class UnitConv\_MyExtension Box

2: var km = UnitConv::miToKm(62.1371);

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/method-wrapping-coc> **QUESTION 9** You are a Dynamics 365 Finance developer. You create an integer variable named totalSales.

You need to display the value from totalSales in an info statement.

Which three code segments can you use? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. `info(int2str(totalSales));`
- B. `info(totalSales);`
- C. `info(any2str(totalSales));`
- D. `info(strfmt("%1", totalSales));`
- E. `info(strLine(totalSales, 1));`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** ACD

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

A: int2Str converts an integer to the equivalent string.

C: any2Str converts an anytype value to a str value. The anytype data type is a placeholder for any data type.

D: Example: void

MyMethod()

```
{  
    for (int i = 0; i < 10; i++)  
    {  
        info(strfmt("i is %1", i));  
    }  
}
```

Reference: [https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-ref/xpp-variables-data-](https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-ref/xpp-variables-data-types)

[types https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-ref/xpp-data-primitive#anytype](https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/dev-ref/xpp-data-primitive#anytype)

## QUESTION 10

### HOTSPOT

You are the Dynamics 365 Finance Developer.

You have the following class definition:

```
class WebShopOrderValidations  
{  
    public static void checkQtyValue(int Qty = 0)  
    {  
        ...  
    }  
}
```

You need to create an extension class and wrap the method by using Chain of Command (CoC), if the value of the Qty variable is less than 5, the code must cause an exception.

How should you complete the code segment? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: final class WebShopOrderVal\_Extension Box

2: public static void checkQtyValue(int Qty)

Incorrect Answers:

Public void ...

If a static method is the target that will be wrapped, the method in the extension must be qualified by using the static keyword.

Int Qty=0

The method signature in the wrapper method must not include the default value of the parameter. Public

int

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/method-wrapping-coc>



**QUESTION 11**

**HOTSPOT**

You have the following code:

```
[SysEntryPointAttributeRole]
class CashDiscountDP extends SRSReportDataProviderBase
{
    CashDiscountTmp cashDiscountTmp;
    [SRSReportDataSetAttribute(tableStr(CashDiscountTmp))]
    public CashDiscountTmp getCashDiscountTmp()
    {
        select cashDiscountTmp;
        return cashDiscountTmp;
    }
    public boolean processReport()
    {
        ...
    }
}
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Yes

Here CashDiscountDP is the name of the secure server method that is tagged with the SysEntryPointAttribute attribute.

Box 2: Yes

To define a report data provider class

An RDP class extends the SRSReportDataProviderBase class. You set the SRSReportParameterAttribute attribute to the data contract you created for the RDP class.

Box 3: No

Instead:

```
public void processReport()
```

Reference: <https://docs.microsoft.com/en-us/dynamicsax-2012/developer/security-privilege-properties>

<https://docs.microsoft.com/en-us/dynamicsax-2012/appuser-itpro/how-to-use-a-report-data-provider-class-in-a-report>

## QUESTION 12

DRAG DROP

You create a Visual Studio project named ProductUpdates.

You must update data in a table named ProductTable. You must be able to run the code from Visual Studio.

You need to create an X++ class.

Which five actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

**Select and Place:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Step 1: Create a runnable class and add it to the ProductUpdates project.

Step 2: Create a class extension of the ProductTable and add it to the ProductUpdates project.

Step 3: Write database manipulation code in the class

Step 4: Build and run the class.

Step 5: Set the class as the startup project.

Reference: <https://community.dynamics.com/365/financeandoperations/b/daxology/posts/runnable-class>



## Testlet 1

### Case study

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

#### To start the case study

To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All **Information** tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

### Background

Wide World Importers sell office supplies, furniture, and fittings to their customers across the United States. The company has the following locations:

- a retail store in Seattle ▪ a warehouse in Seattle
- a customer support and call center in Atlanta ▪ a team of field workers that provide furniture installation services at customer sites.

Wide World Importers plans to implement Dynamics 365 Finance and Microsoft Azure cloud platform features.

### Current environment

Customers may place orders by email, phone, or by using the company's website. The company authorizes and processes credit card transactions by using a web-based application. Customer, inventory, supplier, and other master and transactional data is stored in a legacy database.

The company collects feedback from customers by phone or a form on the company's website and maintains the data in a Microsoft Excel workbook.

Wide World Importers runs on-premises applications to manage payroll and workers compensation. The company has a set of Microsoft Power BI dashboards that present data from a reporting database.

The company creates a Lifecycle Services (LCS) implementation project and completes Dynamics 365 Finance onboarding.

The company maintains production, quality assurance (QA), development, user acceptance testing (UAT), and build environments.

### Requirements

#### General

- You must configure a cloud-based Dynamics 365 Finance development environment and enable code extension that support updates. ▪ You must configure version control and a Build environment.
- You must migrate all legacy data to the new system.
- You must implement best practices for X++ coding, the data model, caching, and security.
- All new code must be unit tested in a development environment and then validated by the QA team before code is added to source control. **Business**

#### processes

- You must configure vendor trade agreements.
- Products must be shipped directly from suppliers to customers depending on customer location to save indirect costs.
- You must collect customer feedback on products shipped directly from vendors.
- You must deploy code to a UAT environment for testing before deploying code to production.
- You must validate all entries for the purchase order creation form.
- You must develop a web portal that allows customers to browse products, place orders, and check order status. Product data for the web portal must be integrated as periodic batches.

### Business systems



- You must install and configure a third-party solution for credit card processing within Dynamics 365 Finance. The third-party company will provide a deployable package ▪
- The workers compensation application must be able to call an API to update worker compensation details in Dynamics 365 Finance.
- You must develop a process to import payroll journals into the system.
- You must configure the warehouse mobile device portal for warehouse operations.
- You must install a third-party solution to support web portal integration. The solution is supplied as a source code model file.

#### Vendor exclusion list

You must develop a new solution to maintain a Vendor exclusion list for each customer and item combination. The solution must meet the following requirements:

- Isolate all new vendor exclusion codes as a new assembly by creating a table named VendExclusions.
  - Create an index for the table named PrimaryIdx that uses the following fields: CustAccount, ItemId, VendAccount.
  - Ensure that users can open the Vendor Exclusion list report from the customer master form. The list must display the customer account, Item ID, and Vendor account fields.
  - Implement the Excel integration for the Vendor Exclusion List form.
  - Provide functionality to periodically export the Vendor exclusion list to prepare reports by using standard reporting capabilities of Dynamics 365 Unified Operations.
  - Develop necessary security permissions to view and maintain the new Vendor exclusion list functionality and reporting. Users with maintain rights will be able create, update, and delete the exclusion list. Permissions must be assigned to security roles to match company security model.
  - Maintain referential integrity with other tables.
  - Users must be presented with a warning message before a direct delivery purchase order is created for a vendor in exclusion list. ▪
- Sales managers must be alerted when a new exclusion record is added to the system.

#### Security

- You must implement the record level audit feature to identify the users who created the record.
- Grant specific users rights to maintain the vendor exclusion list by using Excel.
- You must implement validation to check whether a proposed direct delivery purchase order vendor is on the exclusion list for the customer and product combination.

#### Issues

User1 is not able to access many features in the system. You must provide User1 administrator rights.

A sales manager suspects a data-related issue in the vendor exclusion list. User1 must identify the user who created the referenced exclusion records.

Developer2 joins the company and does not have access to a development environment or source control.

User2 reports performance issues when they generate direct delivery purchase orders after current updates are applied.

User2 reports that they cannot access new functionality and reports.

#### QUESTION 1 HOTSPOT

You need to implement the reporting requirements for the Vendor exclusion list.

Which options you should use? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: Provide functionality to periodically export the Vendor exclusion list to prepare reports by using standard reporting capabilities of Dynamics 365 Finance.

Box 1: Financial Reporting

The financial reporting functions are available to users who have the appropriate privileges and duties assigned to them through their security roles.

Box 2: UIBuilder class

Example:

Defining parameters defaulting using code

1. In Solution Explorer, double-click on the FMRentalsByCustUIBuilder class to open the designer.
2. Locate the class build method and update the initialization code.

The parameter initialization code sets the default values of the report execution relative to today's date. Use the classes UIBuilder to override the framework's default handling of report parameters. Additional extension scenarios supported include:

Automatically set query ranges based on session context using Controller classes

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/analytics/create-nextgen-reporting-solutions> <https://docs.microsoft.com/en-us/dynamics365/finance/general-ledger/financial-reporting-getting-started>



## Testlet 2

### Case study

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

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At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

#### To start the case study

To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an **All Information** tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

### Background

#### Overview

First Up Consultants provides Commercial Cleaning services to its clients. The company purchases all its cleaning supplies from Best For You Organics Company.

First Up Consultants is using a cloud-based Dynamics 365 Finance instance. The system has a foundation table named CashDisc that contains one cash discount record for each cash discount type.

Best For You Organics Company invoices First Up Consultants and allows cash discounts based on how fast an invoice is paid. First Up Consultants is entitled to a two percent discount from Best for You Organics for any invoice that is paid within 10 days and has a minimum invoice amount of \$2,500. **Business requirements**

All new and extended objects must be located in an existing model named FinanceExt. The creation of new models is not permitted.

Best For You Organics Company requires that First Up Consultants apply specific minimum invoice amounts to each cash discount record. A cash discount may only be applied when the minimum invoice amount requirement has been met. The new field must be added to the CashDisc form grid with the allowable visible number of characters set to 10.

First Up Consultants must retrieve the required Cash Discount methods and corresponding minimum invoice amounts directly from Best For You Organics Company's enterprise resource planning (ERP) system.

The Chief Financial Officer (CFO) requires the following reports:

- A report that shows all outstanding invoices, their cash discount types including the new minimum threshold applicable, and the amount of the discount. The report must only be accessed by users who are members of the Accounts Payable Manager role.
- You must create a Microsoft Excel workbook that lists unpaid invoices to Best For You Organics Company that have a due date earlier than 5/1/2019 and an Invoice Amount between \$20,000 and \$100,000.

Cash discounts for unpaid invoices must be updated with the new minimum invoice amounts.

#### Financial requirements

##### Vendor Invoices Past Due form

You must be able to filter the grid on the Vendor Invoices Past Due form. By default, you must filter the form based on the Due Date, Invoice Amount, and Vendor columns. Users must be able to apply reusable user-specific filters to a page using multiple fields.

##### CashDisc form

You must extend the CashDisc form to add a new field named MinimumInvoiceAmount to the form. You must add a new Extended Data Type to the extension model for the new field. The new field must be added above the discount method field. The field must display 10 characters.

The accounts payable manager and the accounts payable clerk have Delete access to the form. You must alter permissions to limit accounts payable clerks to have only View access to the form.

##### Cash Discount Records report

You must create a report that shows a list of CashDisc records. You must include the MinimumInvoiceAmount field and filtered data by using the CashDisc.DiscMethod field. Applicable security objects must be created in the existing "FinanceExt" model and configured so the report is accessible by those users to the accounts payable role.

## Batch jobs

You must create a batch job that runs on the last day of each month to update the current unpaid invoices with changes in the minimum invoice amount. The job must meet the following requirements:

- Accept the following parameters: Vendor, DueDate.
  - Be callable by an Action menu item.
  - Allow users to specify vendors to include in the job. ▪
- Use SysOperation Framework for all batch jobs.

You must create a batch job to identify modified CashDisc.MinimumInvoiceAmount values and apply these to open Purchase Lines.

### QUESTION 1

#### DRAG DROP

You need to create the outstanding invoice report for the CFO.

Which attributes should you use? To answer, drag the appropriate attributes to the requirements. Each attribute answer may be used once, more than once, or not at all. You may need to drag the split between panes or scroll to view content.

**NOTE:** Each correct selection is worth one point.

**Select and Place:**

Attributes	Requirement	Attribute
SRSReportParameterAttribute	Identify the class that provides parameters for the report.	
SysOperationDisplayOrderAttribute	Enable contract parameters in the report dialog.	
DataMemberAttribute	Indicate the contract name in the data provider class.	
DataContractAttribute		

**Correct Answer:**

Attributes	Requirement	Attribute
SRSReportParameterAttribute	Identify the class that provides parameters for the report.	DataContractAttribute
SysOperationDisplayOrderAttribute	Enable contract parameters in the report dialog.	DataMemberAttribute
DataMemberAttribute	Indicate the contract name in the data provider class.	SRSReportParameterAttribute
DataContractAttribute		

Section: [none]  
Explanation

**Explanation/Reference:**

Explanation:

Scenario: The Chief Financial Officer (CFO) requires the following reports:

- A report that shows all outstanding invoices, their cash discount types including the new minimum threshold applicable, and the amount of the discount. The report must only be accessed by users who are members of the Accounts Payable Manager role.

Box 1: DataContractAttribute

DataContractAttribute – This attribute is applied to an X++ class and specifies that the class can be used as a data contract (that it should be serialized).

Box 2: DataMemberAttribute

DataMemberAttribute – This attribute is applied to a parm (parameter) method on an X++ data contract class and specifies that the data member should be serialized.

Box 3: SRSReportParameterAttribute

You set the SRSReportParameterAttribute attribute to the data contract you created for the RDP class.

Reference: <https://docs.microsoft.com/en-us/dynamicsax-2012/appuser-itpro/how-to-use-a-report-data-provider-class-in-a-report>



### Question Set 3

#### QUESTION 1 HOTSPOT

You are creating a Dynamics 365 Finance and Operations report. You cannot query the data for the report directly.

You must include parameters to specify data for the report.

You need to create the report.

What should you use? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

Hot Area:

#### Answer Area

Which type of class should you create to pass parameters to the report?

	▼
Data contract class	
Report data provider class	
Report controller class	
Report UI builder class	

Which type of class should you create to access and process the data for the report?

	▼
Data contract class	
Report data provider class	
Report controller class	
Report UI builder class	

Which attribute should you use to identify the class that defines report variables?

	▼
DataContractAttribute	
DataMemberAttribute	
SysOperationContractProcessingAttribute	
SysOperationGroupAttribute	

Which attribute should you use to identify parm methods to send data for the report?

	▼
DataContractAttribute	
DataMemberAttribute	
SysOperationContractProcessingAttribute	
SysOperationGroupAttribute	

Which attribute should you use to define the contract class for a provider class?

	▼
SRSReportQueryAttribute	
SRSReportParameterAttribute	
SRSReportDataProviderBase	

Correct Answer:



## Answer Area

Which type of class should you create to pass parameters to the report?

	▼
Data contract class	
Report data provider class	
Report controller class	
Report UI builder class	

Which type of class should you create to access and process the data for the report?

	▼
Data contract class	
Report data provider class	
Report controller class	
Report UI builder class	

Which attribute should you use to identify the class that defines report variables?

	▼
DataContractAttribute	
DataMemberAttribute	
SysOperationContractProcessingAttribute	
SysOperationGroupAttribute	

Which attribute should you use to identify parm methods to send data for the report?

	▼
DataContractAttribute	
DataMemberAttribute	
SysOperationContractProcessingAttribute	
SysOperationGroupAttribute	

Which attribute should you use to define the contract class for a provider class?

	▼
SRSReportQueryAttribute	
SRSReportParameterAttribute	
SRSReportDataProviderBase	

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Data contract class

A data contract class defines the parameters for a report that is bound to a report data provider (RDP) class. You can specify one or more groups of report parameters, the order of the groups, and the order in which the report parameters appear in a print dialog box.

Box 2: Report data provider class

Report data provider class – processes business logic based on parameters and a query, and then returns the tables as a dataset for the report.

Box 3: DataContractAttribute

DataContractAttribute – This attribute is applied to an X++ class and specifies that the class can be used as a data contract (that it should be serialized).



Box 4: DataMemberAttribute

DataMemberAttribute – This attribute is applied to a parm (parameter) method on an X++ data contract class and specifies that the data member should be serialized.

Box 5: SRSReportParameterAttribute

You set the SRSReportParameterAttribute attribute to the data contract you created for the RDP class.

Reference: <https://docs.microsoft.com/en-us/dynamicsax-2012/appuser-itpro/how-to-use-a-report-data-provider-class-in-a-report>

**QUESTION 2** You are a Dynamics 365 Finance and Operations developer.

You need to deploy a new report in a development environment.

From which two locations can you deploy the report? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. Package deployment
- B. Build project
- C. Application Explorer
- D. Solution Explorer
- E. Build Models options

**Correct Answer:** AD

**Section:** [none]

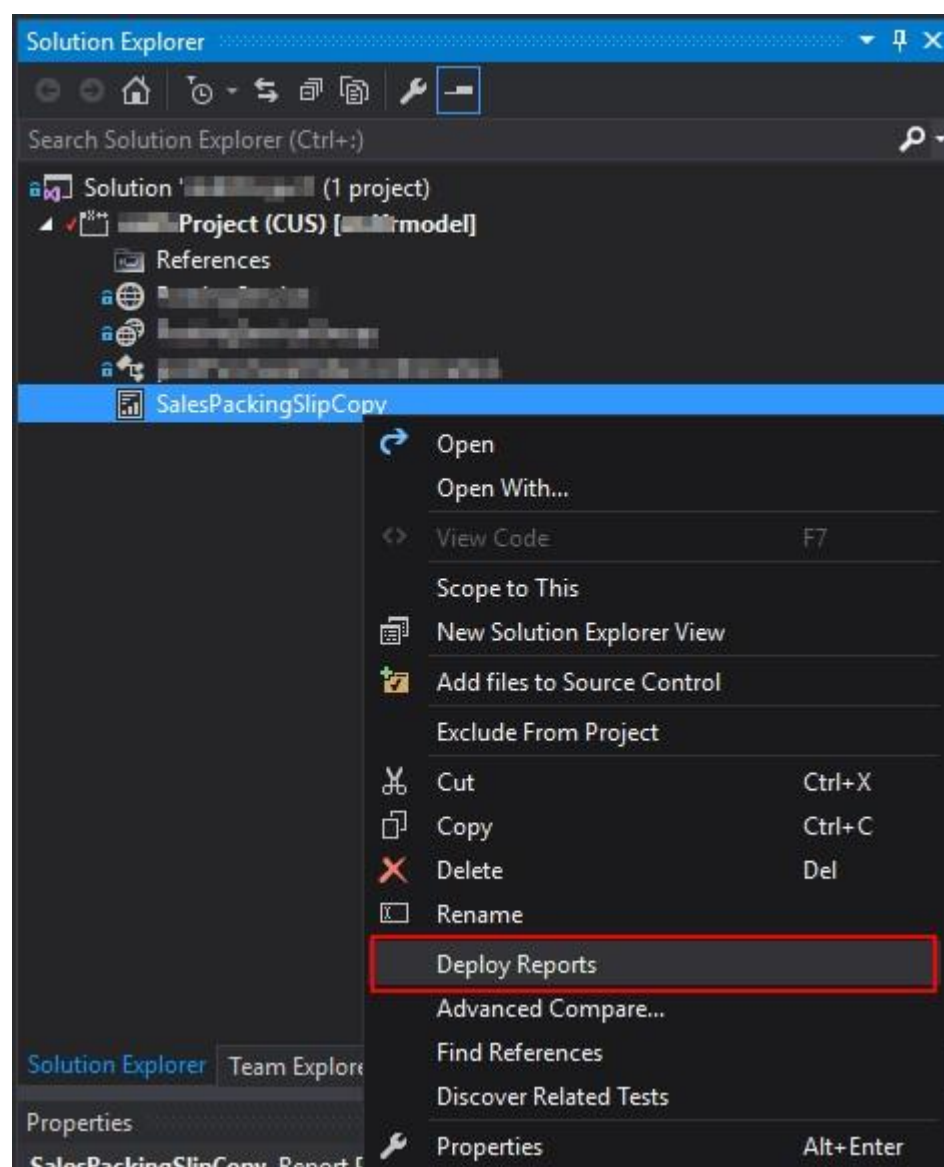
**Explanation**

**Explanation/Reference:**

Explanation:

A: An AOT package is a deployment and compilation unit of one or more models that can be applied to an environment. It includes model metadata, binaries, reports and other associated resources.

D:



Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/deployment/create-apply-deployable-package>

### QUESTION 3

#### DRAG DROP

You are a Dynamics 365 Finance and Operations developer.

The sales department manager must to be able to view total customers by region and total sales by regions.

You need to build key performance indicators (KPIs) and display them on a tile in the application.

How should you model the KPI? To answer, drag the appropriate objects to the correct KPI components. Each object may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

**NOTE:** Each correct selection is worth one point.

**Select and Place:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Aggregate measurements

Measures are aggregate numbers, such as Total Sales or Number of Orders.

Box 2: Aggregate dimension

Dimensions are slicers, such as Product, Vendor, or Customer, that help you analyze the measure.

Box 3: Aggregate data entity

By using the model-driven approach, you can create data entities by directly referencing aggregate measurements and aggregate dimensions. These are known as aggregate data entities. Aggregate data entities are read-only data entities that are used for reporting purposes. To consume aggregate data when you build charts and other client controls, add the aggregate data to a form as a data source.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/analytics/analytics>

**QUESTION 4**

DRAG DROP

You are a Dynamics 365 Finance and Operations developer.

You have a report in an existing model that connects with the following objects:

- in-memory table ▪
- data provider class ▪
- controller class ▪
- contract class

The report is locked for modifications.

You need to create an extension of the in-memory table in a model and you add the new field to the extension.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

**Select and Place:**

**Answer Area****Actions**

Create a duplicate from the report in the model and add the new field on the report design.

Create an extension of the existing report controller class in the model. Update the class logic to point to the new report.

Create a duplicate from the existing data provider class in the model. Update the class to fill the value of the newly added field.

Create a duplicate from the existing report controller class in the model. Update the class logic to point to the new report.

Create an extension of the existing data provider class in the model. Update the class to fill the value of the newly added field.

Correct Answer:

### Actions

Create a duplicate from the report in the model and add the new field on the report design.

Create an extension of the existing report controller class in the model. Update the class logic to point to the new report.

Create a duplicate from the existing data provider class in the model. Update the class to fill the value of the newly added field.

Create a duplicate from the existing report controller class in the model. Update the class logic to point to the new report.

Create an extension of the existing data provider class in the model. Update the class to fill the value of the newly added field.

### Answer Area

Create a duplicate from the report in the model and add the new field on the report design.

Create a duplicate from the existing report controller class in the model. Update the class logic to point to the new report.

Create an extension of the existing data provider class in the model. Update the class to fill the value of the newly added field.



Section: [none]

Explanation

Explanation/Reference:

**QUESTION 5** You are a Dynamics 365 Finance and Operations developer.

You need to initialize an embedded Microsoft Power BI report.

Which code segment should you add to the form initialization method?

- A. `addReportControl(formGroupControl)`
- B. `initializeReportControl(workspaceName, FormGroup)`
- C. `initializeReportControlOnWorkspace(powerBIConfiguration, reportParameters, FormGroupControl)`
- D. `deployOrUpdateReport(powerBIConfiguration, reportName, resourceName)`

**Correct Answer: B**

Section: [none]

Explanation

Explanation/Reference:

Explanation:

PBIReportHelper.initializeReportControl method is used to embed a Power BI report (.pbix resource) in a form group control.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/analytics/add-analytics-tab-workspaces?toc=%2Ffin-and-ops%2Ftoc.json>

**QUESTION 6** You are a Dynamics 365 Finance developer.

You need to create a key performance indicator (KPI) that shows total sales by region.

Which two objects should you create? Each correct answer presents part of the solution.

**NOTE:** Each correct selection is worth one point.

- A. dimension for region
- B. dimension for total sales
- C. aggregated view for total sales
- D. measure for region
- E. measure for total sales

**Correct Answer:** BE

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

An aggregate measurement is a model that contains a collection of measures together with their corresponding dimensions. Measures are aggregate numbers, such as Total Sales or Number of Orders. Dimensions are slicers, such as Product, Vendor, or Customer, that help you analyze the measure. For example, the measure of Total Sales isn't useful unless it can be sliced by Product, Region, and Customer.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/analytics/analytics>

**QUESTION 7**

The warehouse manager at Contoso, Ltd. wants to display a tile in the user interface that will show total RAFs per hour.

You need to create a key performance indicator (KPI) that meets these requirements.

What two components should you create? Each correct answer presents part of the solution.

**NOTE:** Each correct selection is worth one point.

- A. aggregate dimensions
- B. data entity
- C. aggregate measurements
- D. TempDB table

**Correct Answer:** BC

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

When you have completed modeling the aggregate measurement, you can deploy the aggregate measurement and continue with building KPIs and visualizations. You have 2 deployment choices: ▪

Stage in Entity Store

▪ In-memory real-time Note:

RAF = report as finished

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/analytics/model-aggregate-data>

**QUESTION 8**

You have a cloud-based Dynamics 365 Finance production environment.

You need to access the data to create Microsoft Power BI reports for the business.

What should you use?



- A. aggregate measurements
- B. DirectQuery
- C. Analysis Cubes
- D. Entity store

**Correct Answer:** D

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

When you have completed modeling the aggregate measurement, you can deploy the aggregate measurement and continue with building KPIs and visualizations. You have 2 deployment choices:

- Stage in Entity Store. This option leverages Entity store, the operational data store that enables near real-time PowerBI reporting.
- In-memory real-time

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/analytics/model-aggregate-data>

### QUESTION 9 HOTSPOT

You are a Dynamics 365 Finance developer.

A report uses a synchronous call based on a saleID value. There are long wait times for the report to complete printing. You must allow the user to continue to work while the report processes and inform the user immediately when the report completes printing.

You need to implement the correct method calls and behavior.

Which code segments should you use? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

#### Answer Area

Requirement	Code segment or object
Run the form asynchronously.	<div>▼</div> <div>                     element.runAsynch(classNum(CallReport), staticMethodStr(CallReport,RunReport)...</div> <div>                     Global:runAsync(classNum(CallReport), staticMethodStr(CallReport,RunReport)...</div> <div>                     SysOperationSandbox::callStaticMethod(classNum(CallReport), staticMethodStr(CallReport,RunReport)...</div>
Pass parameters to the method.	<div>▼</div> <div>data contract class</div> <div>container</div> <div>parm method</div>

**Correct Answer:**



## Answer Area

Requirement	Code segment or object
Run the form asynchronously.	<div>▼</div> <div>                     element.runAsynch(classNum(CallReport), staticMethodStr(CallReport,RunReport)...  <b>Global:runAsync(classNum(CallReport), staticMethodStr(CallReport,RunReport)...</b>                      SysOperationSandbox::callStaticMethod(classNum(CallReport), staticMethodStr(CallReport,RunReport)...)                 </div>
Pass parameters to the method.	<div>▼</div> <div>                     data contract class  <b>container</b>                      parm method                 </div>

Section: [none]

Explanation

**Explanation/Reference:**

Explanation:

Box 1: Global:runAsync

Use runAsync methods on the Global or FormRun classes.

Box 2: container

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/migration-upgrade/deprecated-apis>

**QUESTION 10** You are a Dynamics 365 Finance developer. You create a key performance indicator (KPI) in a development environment.

You need to display the KPI.

What should you do?

- A. Create a new workspace and add the KPI to the workspace.
- B. Create a tile and add the KPI to the tile.
- C. Add the KPI to an existing form.

**Correct Answer:** A

Section: [none]

Explanation

**Explanation/Reference:**

Explanation:

KPIs and aggregate data that are shown on the dashboard, or a workspace, can be secured by using menu items.

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/analytics/model-aggregate-data>

**Testlet 1**

**Case study**

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

### To start the case study

To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All **Information** tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

### Background

Wide World Importers sell office supplies, furniture, and fittings to their customers across the United States. The company has the following locations:

- a retail store in Seattle ▪  
a warehouse in Seattle
- a customer support and call center in Atlanta ▪ a team of field workers that provide  
furniture installation services at customer sites.

Wide World Importers plans to implement Dynamics 365 Finance and Microsoft Azure cloud platform features.

### Current environment

Customers may place orders by email, phone, or by using the company's website. The company authorizes and processes credit card transactions by using a web-based application. Customer, inventory, supplier, and other master and transactional data is stored in a legacy database.

The company collects feedback from customers by phone or a form on the company's website and maintains the data in a Microsoft Excel workbook.

Wide World Importers runs on-premises applications to manage payroll and workers compensation. The company has a set of Microsoft Power BI dashboards that present data from a reporting database.

The company creates a Lifecycle Services (LCS) implementation project and completes Dynamics 365 Finance onboarding.

The company maintains production, quality assurance (QA), development, user acceptance testing (UAT), and build environments.

### Requirements

#### General

- You must configure a cloud-based Dynamics 365 Finance development environment and enable code extension that support updates. ▪  
You must configure version control and a Build environment.
- You must migrate all legacy data to the new system.
- You must implement best practices for X++ coding, the data model, caching, and security.
- All new code must be unit tested in a development environment and then validated by the QA team before code is added to source control. **Business**

#### processes

You must configure vendor trade agreements.

Products must be shipped directly from suppliers to customers depending on customer location to save indirect costs.

You must collect customer feedback on products shipped directly from vendors.

You must deploy code to a UAT environment for testing before deploying code to production.

You must validate all entries for the purchase order creation form.

You must develop a web portal that allows customers to browse products, place orders, and check order status. Product data for the web portal must be integrated as periodic batches.

### Business systems

- You must install and configure a third-party solution for credit card processing within Dynamics 365 Finance. The third-party company will provide a deployable package. ▪  
The workers compensation application must be able to call an API to update worker compensation details in Dynamics 365 Finance.
- You must develop a process to import payroll journals into the system.
- You must configure the warehouse mobile device portal for warehouse operations.
- You must install a third-party solution to support web portal integration. The solution is supplied as a source code model file.

## Vendor exclusion list

You must develop a new solution to maintain a Vendor exclusion list for each customer and item combination. The solution must meet the following requirements:

- Isolate all new vendor exclusion codes as a new assembly by creating a table named VendExclusions.
  - Create an index for the table named PrimaryIdx that uses the following fields: CustAccount, ItemId, VendAccount.
  - Ensure that users can open the Vendor Exclusion list report from the customer master form. The list must display the customer account, Item ID, and Vendor account fields.
  - Implement the Excel integration for the Vendor Exclusion List form.
  - Provide functionality to periodically export the Vendor exclusion list to prepare reports by using standard reporting capabilities of Dynamics 365 Unified Operations.
  - Develop necessary security permissions to view and maintain the new Vendor exclusion list functionality and reporting. Users with maintain rights will be able create, update, and delete the exclusion list. Permissions must be assigned to security roles to match company security model.
  - Maintain referential integrity with other tables.
  - Users must be presented with a warning message before a direct delivery purchase order is created for a vendor in exclusion list. ▪
- Sales managers must be alerted when a new exclusion record is added to the system.

## Security

- You must implement the record level audit feature to identify the users who created the record.
- Grant specific users rights to maintain the vendor exclusion list by using Excel.
- You must implement validation to check whether a proposed direct delivery purchase order vendor is on the exclusion list for the customer and product combination.

## Issues

User1 is not able to access many features in the system. You must provide User1 administrator rights.

A sales manager suspects a data-related issue in the vendor exclusion list. User1 must identify the user who created the referenced exclusion records.

Developer2 joins the company and does not have access to a development environment or source control.

User2 reports performance issues when they generate direct delivery purchase orders after current updates are applied.

User2 reports that they cannot access new functionality and reports.

**QUESTION 1** You need to implement the migration requirements.



Which two options can you use? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. a data entity and bring your own database (BYOD)
- B. a public data entity and the Excel add-in
- C. a data entity and Entity store
- D. a data entity and a Data management import job

**Correct Answer:** BC

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: Implement the Excel integration for the Vendor Exclusion List form.

B: By opening entity data in Excel, you can quickly and easily view and edit the data by using the Excel add-in.

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/office-integration/use-excel-add-in>

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/analytics/power-bi-integration> **QUESTION**

**2 DRAG DROP**

You need to implement the company's integration requirements.

Which integration strategies should you use? To answer, drag the appropriate integration strategies to the correct requirements. Each integration strategy may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

**NOTE:** Each correct selection is worth one point.

**Select and Place:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: asynchronous

An asynchronous pattern is a non-blocking pattern, where the caller submits the request and then continues without waiting for a response.

Box 2: Synchronous

A synchronous pattern is a blocking request and response pattern, where the caller is blocked until the callee has finished running and gives a response.

Box 3: Synchronous

Box 4: asynchronous Batch  
data is asynchronous.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/data-entities/integration-overview#synchronous-vs-asynchronous-integration-patterns>

**QUESTION 3** You need to investigate the Vendor exclusion list issue.



What should you do?

- A. Navigate to the General tab, select **Record Info**, and then select **Show all fields**.
- B. Navigate to the Options tab, select **Record Info**, and then select **Show all fields**.
- C. Navigate to the Options tab and select **Database log**.
- D. Navigate to the Page options tab, select **Record Info**, and then select **Show all fields**.

**Correct Answer: C**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: A sales manager suspects a data-related issue in the vendor exclusion list. User1 must identify the user who created the referenced exclusion records.

Database logging is a feature in D365FO which helps us to track inserts, updates, and deletes on the intended tables provided if we are fine with the overhead of extra logging for every database operation on enabled tables.

Reference: <https://community.dynamics.com/365/financeandoperations/b/daxology/posts/database-logging-setup-in-d365fo>

**QUESTION 4**

You need to implement the payroll application data process.

Which two objects should you create? Each correct answer presents part of the solution.

**NOTE:** Each correct selection is worth one point.

- A. a data contract class that uses the DataContractAttribute attribute

- B. a service class that has a public method which accepts a single parameter for a contract
- C. a class that extends SysOperationServiceBase
- D. an UIBuilder class that extends SysOperationAutomaticUIBuilder

**Correct Answer:** AC

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: You must develop a process to import payroll journals into the system.

A: Data Contract: Data contract class is the model class defining attributes needed for batch operations. These attributes are provided by the user, in a dialog. DataContractAttribute attribute is needed for the class and the properties methods requires DataMemberAttribute attribute.

C: Service: Service class extends from the SysOperationServiceBase class and contains the business logic for the batch operation. Developers often tend to add the business logic in controller classes, which violates the Single responsibility principle.

Incorrect Answers:

D: UI Builder: UI Builder class extends from SysOperationAutomaticUIBuilder class and is used for adding custom behavior to dialog / dialog fields dynamically constructed by the SysOperation framework.

Reference: <http://daxingwitheshant.blogspot.com/2018/06/sysoperation-framework.html>



## Question Set 2

### QUESTION 1

DRAG DROP

A company uses Dynamics 365 Unified Operations.

Client companies require weekly updates for services performed. You create data entity by using the Data Entity wizard.

You need to expose a list of services to external business companies.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

**Select and Place:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Step 1: Synchronize the database

Entities are created as views in Microsoft SQL Server, and staging tables are also added. Therefore, you must sync a database when you build entities.

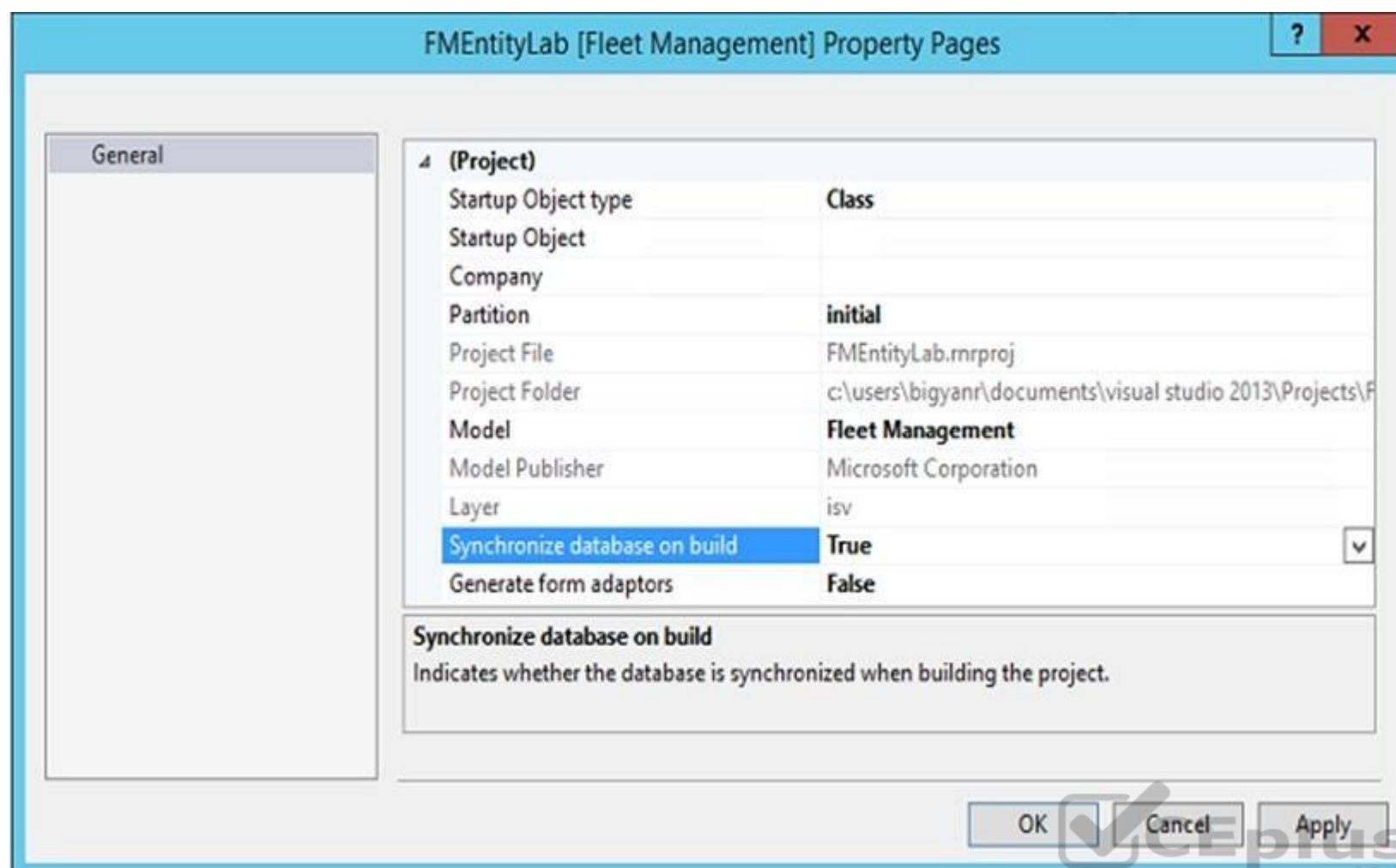
Step 2: Build the solution

Build your project

In Solution Explorer, right-click your project, and then click Properties.

Change the value of the Synchronize database on build property to True, and then click OK. This property must be set only one time per project.





On the Visual Studio toolbar, click Build > Build Solution to build the project.

Step 3: Configure properties for the data entity After build visually validate and customize an entity

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/data-entities/build-consuming-data-entities>

## QUESTION 2

DRAG DROP

A company is migrating from a legacy system to Dynamics 365 Unified Operations.

You need to import the customer data by using the Data Management workspace.

In which order should you perform the actions? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

**Select and Place:**

**Correct Answer:**

**Section:** [none]  
**Explanation**

**Explanation/Reference:**  
Explanation:

Step 1: Create a new import project.



Step 2: Specify the project category for the import.

Step 3: Specify the Source Data Format.

Step 4: Specify the target entity.

Step 5: Import the source file to the project.

The import process is done through the Import tile in the Data Management workspace.

Import a data package

1. Log into the environment using a login with sufficient privileges (typically this is the Administrator role).
2. On the dashboard, click the Data Management workspace.
3. Click the Import tile.
4. On the next page, do the following: Provide a name.

In the Source Data Format field, select Package.

Click the Upload button and choose the appropriate package file from the location for the data being imported. This will import all the files from the package. Click Save, and then click Import.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/data-entities/data-entities-data-packages>

### QUESTION 3

#### DRAG DROP

A company uses Dynamics 365 Unified Operations.

You need to integrate the system with third-party applications.

Which data integration strategies should you use? To answer, drag the appropriate data integration strategies to the correct scenarios. Each strategy may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

**NOTE:** Each correct selection is worth one point.

**Select and Place:**

Strategies	Scenario	Strategy
OData endpoint	Users have a customer portal and must be able to query the status of orders for customers in near real time. Less than 500 status requests occur per hour.	
batch data API	Employees use a third-party app to record customer orders. You must upload orders to the system once each hour. The company processes approximately 10,000 orders each hour.	
custom service	Employees use a third-party software as a service app to manage delivery schedules. The software must be able to calculate and obtain inventory availability for deliveries in real time. Approximately 5,000 requests occur each hour.	
Excel integration		

**Correct Answer:**

Strategies	Answer Area	Scenario	Strategy
OData endpoint		Users have a customer portal and must be able to query the status of orders for customers in near real time. Less than 500 status requests occur per hour.	custom service
batch data API		Employees use a third-party app to record customer orders. You must upload orders to the system once each hour. The company processes approximately 10,000 orders each hour.	batch data API
custom service		Employees use a third-party software as a service app to manage delivery schedules. The software must be able to calculate and obtain inventory availability for deliveries in real time. Approximately 5,000 requests occur each hour.	OData endpoint
Excel integration			

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: custom service

Custom service peak data volume is 1,000 records per hour.

Box 2: batch data API

This scenario is best implemented by using batch data APIs, which has a peak data volume of 300,000 records per hour.

Box 3: OData endpoint

Peak data volume for reading Odata status of orders is 5,000 records per hour.

This scenario is best implemented by using the OData service endpoints to read order status information.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/data-entities/integration-overview>

**QUESTION 4** You are training a new Dynamics 365 Finance and Operations developer.

You need to recommend where asynchronous integrations should be used instead of synchronous integrations.

For which scenario should you recommend asynchronous integration?

- A. A retailer requires all new customer data captured at point of sale (POS) terminals through the day sent back to the system.
- B. A service company needs workers to be able to access just-in-time inventory data from the field by using a third-party Software as a Service (SaaS) application to ensure they have parts to complete a service.
- C. A retailer wants to ensure gift card balances are communicated back to the system from point of sale (POS) terminals in near real-time.
- D. A company uses workflow for purchasing approvals, which then sends just-in-time approval information to a third-party application for approvers to review.

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Classic data integration: Asynchronous,

Classic data integration provides asynchronous and uni-directional data synchronization experience between model-driven applications in Dynamics 365 and Dynamics 365 Finance and Operations applications. It's an IT-administrator led experience and you must schedule the data sync jobs to run on a specific cadence. Classic data integration is suitable for business scenarios that involves bulk ingress/egress of data across Dynamics 365 applications.

Incorrect Answers:

B: Just-in-time inventory data required.

C: Real-time required.

Not D: Bi-directional.

Note: Dual-write: Synchronous, Bi-directional.

Dual-write provides synchronous, bi-directional, near-real time experience between model-driven applications in Dynamics 365 and Finance and Operations applications. Data synchronization happens with little or no intervention and is triggered by create, update and delete actions on an entity. Dual-write is suitable for interactive business scenarios that span across Dynamics 365 applications.

#### QUESTION 5

DRAG DROP

A company plans to deploy Dynamics 365 Unified Operations.

You need to recommend deployment options for the company.

What should you recommend? To answer, drag the appropriate deployment options to the correct application requirement. Each deployment option may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

**NOTE:** Each correct selection is worth one point.

**Select and Place:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/fin-ops/get-started/cloud-prem-comparison>



#### QUESTION 6

DRAG DROP

You need to set up a recurring integration to enable file exchanges between Dynamics 365 Finance and a third-party system.

In which order should you perform the actions? To answer, move all actions from the list of actions to the answer area and arrange them in the correct order.

**Select and Place:**

Actions	Answer Area
Set up the processing recurrence.	
Link a new application ID to the data recurring data job.	
Specify whether you are using a file or data package.	
Set up a data project.	
Create a recurring data job.	

Correct Answer:

Actions	Answer Area
Set up the processing recurrence.	Set up a data project.
Link a new application ID to the data recurring data job.	Create a recurring data job.
Specify whether you are using a file or data package.	Specify whether you are using a file or data package.
Set up a data project.	Set up the processing recurrence.
Create a recurring data job.	Link a new application ID to the data recurring data job.

Section: [none]  
Explanation

Explanation/Reference:  
Explanation:

Step 1: Set up a data project

Step 2: Create a recurring data job  
1. Create a recurring data job



2. On the Data project page, select Create recurring data job (Step 2)
3. Enter a valid name and a description for the recurring data job.
4. On the Set up authorization policy tab, enter the application ID that was generated for your application, and mark it as enabled.
5. Expand Advanced options tab, and specify either File or Data package (Step 3)
6. Select Set processing recurrence, and then, in the Define recurrence dialog box, set up a valid recurrence for your data job (Step 4) Step 3: Specify whether you are using a file or data package.

Step 4: Set up the processing recurrence

Step 5: Link a new application ID to the data recurring data job

You can use integration REST endpoints to integrate with the client, submit documents (import), or poll available documents for download (export). These endpoints support OAuth.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/data-entities/recurring-integrations>

#### QUESTION 7

DRAG DROP

You are a Dynamics 365 Finance developer.

You need to configure integration between Dynamics 365 Finance and other tools.

Which integration types should you use? To answer, drag the appropriate integration types to the correct requirement. Each integration type may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

**NOTE:** Each correct selection is worth one point.

**Select and Place:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: synchronous

A synchronous pattern is a blocking request and response pattern, where the caller is blocked until the callee has finished running and gives a response.

Box 2: Asynchronous

An asynchronous pattern is a non-blocking pattern, where the caller submits the request and then continues without waiting for a response.

Box 3: synchronous

Box 4: Asynchronous

A typical Batch job.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/data-entities/integration-overview>

#### QUESTION 8 You are a Dynamics 365

Finance developer.

You make changes to an existing class.

You need to compare the code that is in source control with the updated class. In Visual Studio, you display Team Explorer.

What are three possible ways to achieve the goal? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.



- A. In Team Explorer, select **Compare with Latest Version**.
- B. In Team Explorer, select **Compare with Workspace Version**.
- C. In Team Explorer, select **Compare Files**.
- D. Run the `tf diff` command.
- E. Run the `vsdiffmerge` command.

**Correct Answer:** ABD

**Section:** [none]

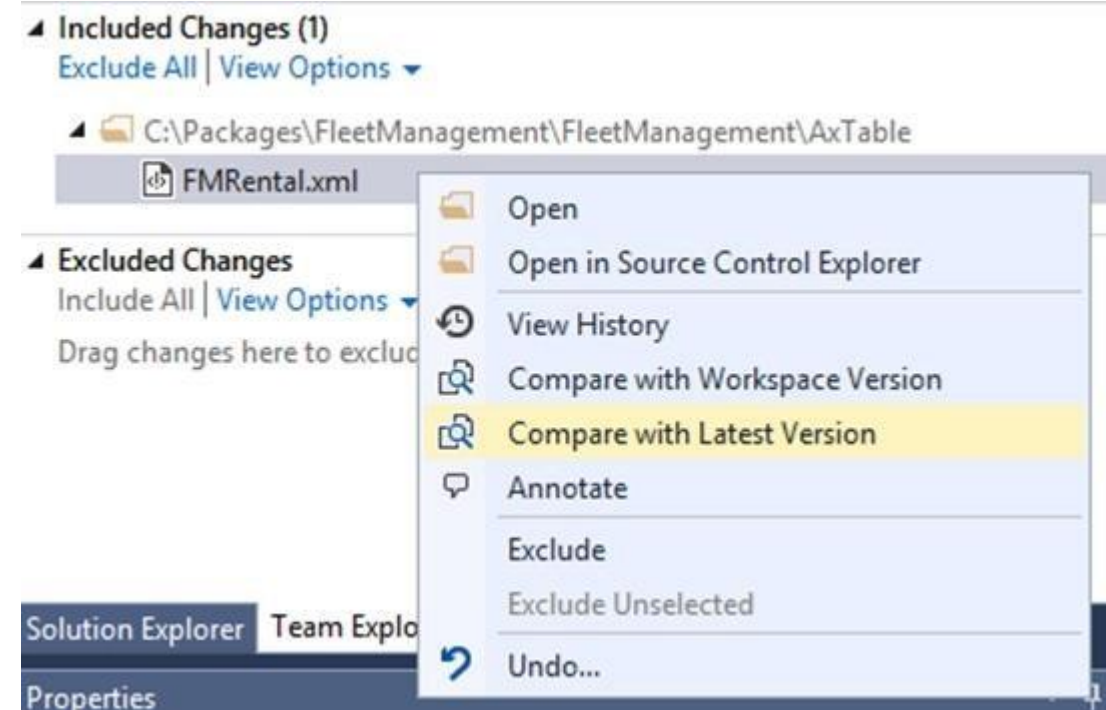
**Explanation**

**Explanation/Reference:**

Explanation:

Example:

In Team Explorer, right-click FMRental.xml, and select Compare with Latest Version.



- Choose Compare with Latest Version to see how the changes you have made compare to the latest version of the file on your Team Foundation Server. ▪
- Choose Compare with Workspace Version to see what changes you have made to the version you checked out.

D: The diff tool of Visual Studio is very good to compare two files.

It compares, and if it is possible, displays differences between two files, files in two folders, or a shelveset and a local or a server file.

Syntax:

```
tf diff[erence] itemspec [/version:versionspec] [/type:filetype] [/format:format]
[/ignoreospace] [/ignoreeol] [/ignorecase] [/recursive]
[/options][[/noprompt][[/login:username,[password]]]
```

**Incorrect Answers:**

E: `vsdiffmerge` is used for merging.

Reference: <https://docs.microsoft.com/en-us/azure/devops/repos/tfvc/difference-command>

**QUESTION 9** An organization has two million customers that are part of the International customer group.

Validation must occur when customer records are updated. For all customers where the value of the customer group field is international, you must the delivery mode to Air.

You need to update the customer records.

Which two segments can you use? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

```
ttsbegin;
while select forupdate CustTable
  where CustTable.CustGroup == 'International'
{
  CustTable.DlvMode = 'Air';
  CustTable.update();
}
ttscommit;

ttsbegin;
update CustTable
set DlvMode = 'Air';
where CustTable.CustGroup == 'International'
ttscommit;

ttsbegin;
update_recordset CustTable
  where CustTable.CustGroup == 'International'
  setting DlvMode = 'Air';
ttscommit;

ttsbegin;
while select forupdate CustTable
  where CustTable.CustGroup == 'International'
{
  CustTable.DlvMode = 'Air';
  CustTable.doUpdate();
}
ttscommit;

ttsbegin;
update_recordset CustTable
  setting DlvMode = 'Air';
  where CustTable.CustGroup == 'International'
ttscommit;
```

A.

B. C.





D.

E.

**Correct Answer:** DE

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

This is Update and Update\_RecordSet Code sample. Result of both will be same .

```
TestTable TestTable;
```

```
//Update_Recordset
```

```
update_recordset TestTable setting Name ="New Enterprises" where TestTable.Accountnum == "uS-027"; //Update ttsBegin;
```

```
while select forupdate TestTable where TestTable.Accountnum == "uS-027"
```

```
{  
    TestTable.Name ="New Enterprises";  
    TestTable.update();  
}
```

```
ttsCommit;
```

```
info("OK");
```

Reference: <https://community.dynamics.com/ax/b/technicaltutorialsformsdynamicsax2012/posts/update-and-update-recordset-code-sample-in-ax-2012>

#### QUESTION 10

##### HOTSPOT

You are a Dynamics 365 Finance developer.

You need to export data from all products into a data package every day at 2 a.m. You open the Data Management workspace.

How should you complete the process? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Export

Select the Import or Export (in this case) tile to create a new data project.

Box 2: Data source

Enter a valid job name, data source, and entity name.

Box 3: Data project page

On the Data project page, select Create recurring data job.

Box 4: Setup authorization policy

In the Set up authorization policy tab, enter the application ID that was generated for your application, and mark it as enabled.

Reference:

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/data-entities/recurring-integrations>

## Testlet 1

### Case study

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

#### To start the case study

To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All **Information** tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

### Background

Wide World Importers sell office supplies, furniture, and fittings to their customers across the United States. The company has the following locations:

- a retail store in Seattle ▪
- a warehouse in Seattle
- a customer support and call center in Atlanta ▪ a team of field workers that provide furniture installation services at customer sites.

Wide World Importers plans to implement Dynamics 365 Finance and Microsoft Azure cloud platform features.

### Current environment

Customers may place orders by email, phone, or by using the company's website. The company authorizes and processes credit card transactions by using a web-based application. Customer, inventory, supplier, and other master and transactional data is stored in a legacy database.

The company collects feedback from customers by phone or a form on the company's website and maintains the data in a Microsoft Excel workbook.

Wide World Importers runs on-premises applications to manage payroll and workers compensation. The company has a set of Microsoft Power BI dashboards that present data from a reporting database.

The company creates a Lifecycle Services (LCS) implementation project and completes Dynamics 365 Finance onboarding.

The company maintains production, quality assurance (QA), development, user acceptance testing (UAT), and build environments.

### Requirements

#### General

- You must configure a cloud-based Dynamics 365 Finance development environment and enable code extension that support updates. ▪
- You must configure version control and a Build environment.

- You must migrate all legacy data to the new system.
- You must implement best practices for X++ coding, the data model, caching, and security.
- All new code must be unit tested in a development environment and then validated by the QA team before code is added to source control. **Business**

#### processes

- You must configure vendor trade agreements.
- Products must be shipped directly from suppliers to customers depending on customer location to save indirect costs.
- You must collect customer feedback on products shipped directly from vendors.
- You must deploy code to a UAT environment for testing before deploying code to production.
- You must validate all entries for the purchase order creation form.
- You must develop a web portal that allows customers to browse products, place orders, and check order status. Product data for the web portal must be integrated as periodic batches.

#### Business systems

- You must install and configure a third-party solution for credit card processing within Dynamics 365 Finance. The third-party company will provide a deployable package. ▪
- The workers compensation application must be able to call an API to update worker compensation details in Dynamics 365 Finance.
- You must develop a process to import payroll journals into the system.
  - You must configure the warehouse mobile device portal for warehouse operations.
  - You must install a third-party solution to support web portal integration. The solution is supplied as a source code model file.

#### Vendor exclusion list

You must develop a new solution to maintain a Vendor exclusion list for each customer and item combination. The solution must meet the following requirements:

- Isolate all new vendor exclusion codes as a new assembly by creating a table named VendExclusions.
  - Create an index for the table named PrimaryIdx that uses the following fields: CustAccount, ItemId, VendAccount.
  - Ensure that users can open the Vendor Exclusion list report from the customer master form. The list must display the customer account, Item ID, and Vendor account fields.
  - Implement the Excel integration for the Vendor Exclusion List form.
  - Provide functionality to periodically export the Vendor exclusion list to prepare reports by using standard reporting capabilities of Dynamics 365 Unified Operations.
  - Develop necessary security permissions to view and maintain the new Vendor exclusion list functionality and reporting. Users with maintain rights will be able create, update, and delete the exclusion list. Permissions must be assigned to security roles to match company security model.
  - Maintain referential integrity with other tables.
  - Users must be presented with a warning message before a direct delivery purchase order is created for a vendor in exclusion list. ▪
- Sales managers must be alerted when a new exclusion record is added to the system.

#### Security

- You must implement the record level audit feature to identify the users who created the record.
- Grant specific users rights to maintain the vendor exclusion list by using Excel.
- You must implement validation to check whether a proposed direct delivery purchase order vendor is on the exclusion list for the customer and product combination.

#### Issues

User1 is not able to access many features in the system. You must provide User1 administrator rights.

A sales manager suspects a data-related issue in the vendor exclusion list. User1 must identify the user who created the referenced exclusion records.

Developer2 joins the company and does not have access to a development environment or source control.

User2 reports performance issues when they generate direct delivery purchase orders after current updates are applied.

User2 reports that they cannot access new functionality and reports.

**QUESTION 1** You need to configure security for the Vendor Exclusion List report.

What are two possible ways to achieve this goal? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. Create a new privilege, add a reference to an output menu item, and then add the new privilege to a role.
- B. Create a new security policy and add an output menu item. Add the new security policy to duty extension and then to a role extension.

- C. Create a new privilege extension and add an output menu item. Add the privilege to a duty extension and then to a role extension.
- D. Create a new privilege and assign it to an output menu item. Add the new privilege to a duty extension and then add the duty extension to a role.

**Correct Answer:** AD

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: Develop necessary security permissions to view and maintain the new Vendor exclusion list functionality and reporting. Users with maintain rights will be able create, update, and delete the exclusion list. Permissions must be assigned to security roles to match company security model.

The privileges are simply a way to grant permissions to an entry point, which can be services, to a duty, role, or even directly to a user. Typically, we only add entry points to a privilege, such as menu items.

D: You can extend a Security Role or a Security Duty to add new duties/privileges to these elements.

Incorrect Answers:

C: We can't extend security privileges, we would always create a new privilege.

Reference: <https://www.oreilly.com/library/view/extending-microsoft-dynamics/9781786467133/40a348f3-0f4c-4d47-a566-59f3a2e6afa0.xhtml>

<https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/extensibility/customization-overlayering-extensions#security-role-and-duty-extensions>



**Question Set 2**

**QUESTION 1** You are Dynamics 365 Finance and Operations developer.

You need to explain the performance advantages of the different concurrency models.

What are three performance advantages of optimistic concurrency control over pessimistic concurrency control? Each control answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. Records are locked as soon as they are retrieved from the database.
- B. Records remain available for other processes while they are selected from the database.
- C. Records are locked for a shorter length of time.
- D. Fewer resources are used to lock records during updates.

**Correct Answer:** BCD

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Optimistic Concurrency only locks records from the time when the actual update is performed.

Following are the advantages of using OCC:

Records remain available for other processes to update if they have been selected from the database but haven't yet been updated. Records are locked for a shorter length of time.

Fewer resources are used to hold the locks during the update process.

Incorrect Answers:

A: Pessimistic Concurrency Control locks records as soon as they are fetched from the database for an update.

Reference: <https://docs.microsoft.com/en-us/dynamicsax-2012/developer/optimistic-concurrency-control>

**QUESTION 2**

DRAG DROP

A company uses Dynamics 365 Unified Operations.

You need to implement role-based security for a set of fields in a table.

How should you arrange the security elements? To answer, drag the appropriate security elements to the correct locations. Each element may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

**NOTE:** Each correct selection is worth one point.

**Select and Place:**

**Correct Answer:**

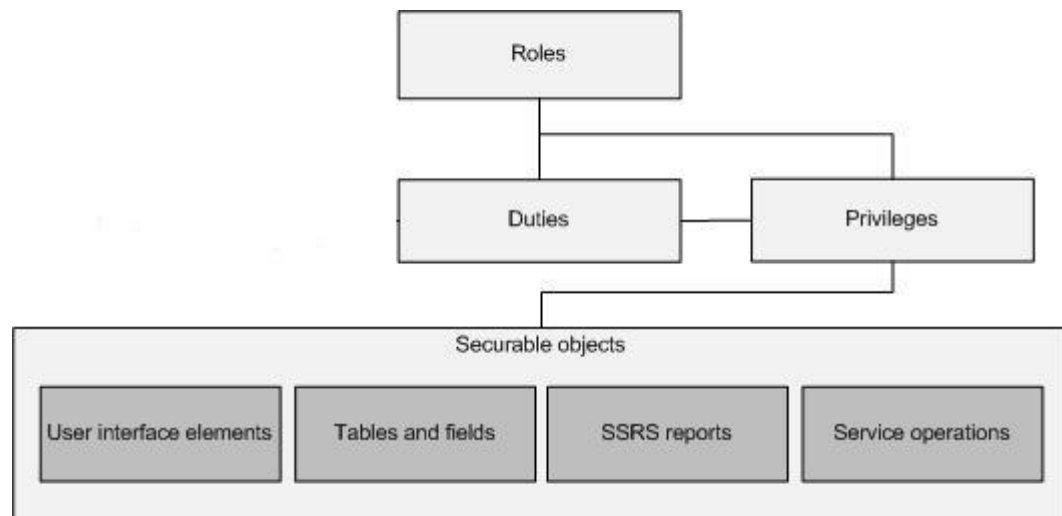
**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

The following illustration shows the elements of role-based security and their relationships.



Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/sysadmin/role-based-security>

**QUESTION 3** Contoso, Ltd. uses Dynamics 365 Unified Operations. You receive reports of performance issues with the app.

You need to use Performance Timer to investigate the issues.

Which URL should you use?

- A. <https://contoso.cloudax.dynamics.com/?cmp=USMF&debug=perftimer>
- B. <https://contoso.cloudax.dynamics.com/?cmp=USMF&debug=develop&mi=VendTableListPage>
- C. <https://contoso.cloudax.dynamics.com/?cmp=USMF&mi=performancetimer>
- D. <https://contoso.cloudax.dynamics.com/?cmp=USMF&debug=developer>



**Correct Answer:** D

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

To open the Performance timer, open your webpage with the added parameter debug=develop: <https://yoursite.cloud.test.dynamics.com/en/?cmp=USMF&debug=develop>

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/perf-test/performance-timer>

**QUESTION 4**

DRAG DROP

You are a Dynamics 365 Finance and Operations developer.

You need to use the Extensible Data Security (SDS) framework to restrict to the data in the Sales table form based on the customer group and the role of the user.

Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

**Select and Place:**

**Correct Answer:**

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

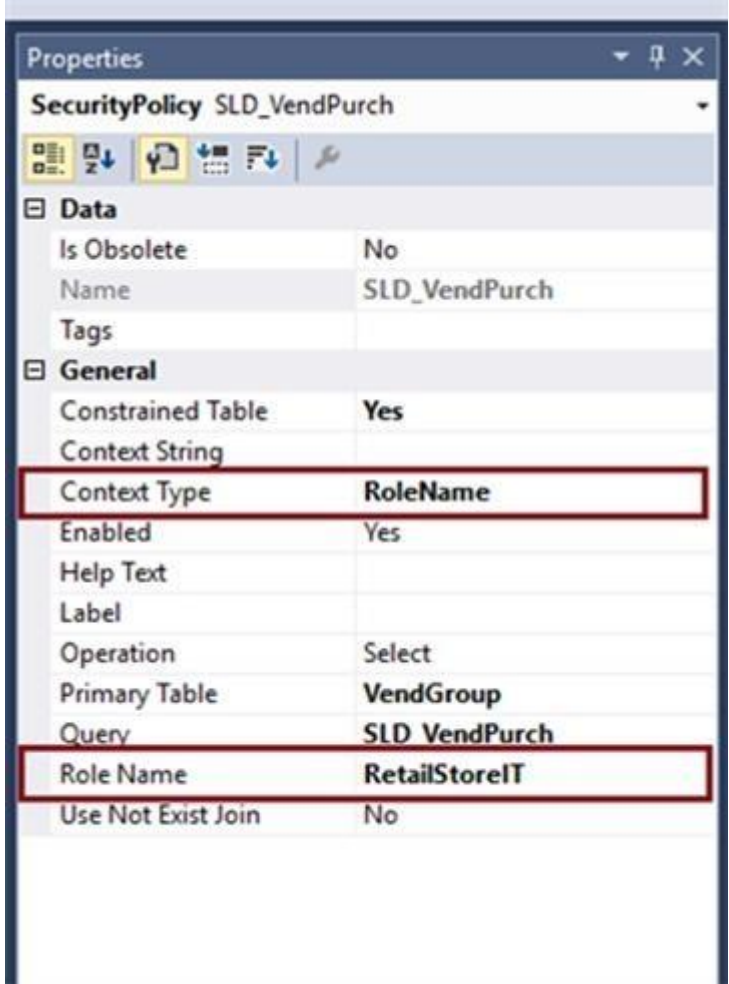
Step 1: Create a new user role and add required privileges.  
Individual security permissions are combined into privileges, and privileges are combined into duties. The administrator grants security roles access to the program by assigning duties and privileges to those roles.

Step 2: Assign the newly created role to the user.

Step 3: Define the list of constrained tables.  
Add the constrained tables and views.

Step 4: Define the context of the rule.  
Set the context.  
Set the ContextType property to one of the following:

- ContextString – Set the property to this value if a global context is to be used to determine whether the policy should be applied. When required, this context string needs to be set by the application using the XDS::SetContext API.
- RoleName – Set the property to this value if the policy should be applied only if a user in a specific role accesses the constrained tables.
- RoleProperty – Set the property to this value if the policy is to be applied only if the user is a member of any one of a set of roles that have the ContextString property set to the same value.



Properties	
SecurityPolicy SLD_VendPurch	
<b>Data</b>	
Is Obsolete	No
Name	SLD_VendPurch
Tags	
<b>General</b>	
Constrained Table	Yes
Context String	
Context Type	RoleName
Enabled	Yes
Help Text	
Label	
Operation	Select
Primary Table	VendGroup
Query	SLD_VendPurch
Role Name	RetailStoreIT
Use Not Exist Join	No



Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/sysadmin/security-architecture>  
<https://community.dynamics.com/365/b/exploringdynamics365/posts/extensible-data-security-in-d365>

**QUESTION 5 HOTSPOT**

You are a Dynamics 365 Finance and Operations developer.

Users are experiencing slower load times for the All Customers form.

You need to update caching for CustTable to improve data retrieval times.

How should you configure CacheLookup properties? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.



**Hot Area:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: Entire table

In Microsoft Dynamics AX, groups of records can be cached all at once with set-based caching. Set-based caching can be implemented in two ways:

At design time, by setting the table's CacheLookup property to EntireTable.

In code, by using the RecordViewCache class.

Box 2: Found

Record caching is enabled for a table when all the following statements are true:

- The CacheLookup property on the table is enabled by setting it to one of the following values:
- NotInTTS, Found, FoundAndEmpty.
- The record buffer disableCache method has not been called with a parameter of true.

Reference: <https://docs.microsoft.com/en-us/dynamicsax-2012/developer/set-based-caching> <https://docs.microsoft.com/en-us/dynamicsax-2012/developer/single-record-caching>

#### **QUESTION 6**

DRAG DROP

You are a Dynamics 365 Finance developer.

You need configure table caching.

Which CacheLookup properties should you use? To answer, drag the CacheLookup properties to the correct table. Each property may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

**NOTE:** Each correct selection is worth one point.

**Select and Place:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: FoundAndEmpty

All selects on caching keys are cached, including selects that are not returning data.

All caching key selects are returned from caching if the record exists there, or the record is marked as nonexistent in the cache. A select forUpdate in a transaction forces reading from the database and replaces the record in the cache. An example of FoundAndEmpty record caching is in the Discount table in the Microsoft Dynamics AX standard application. By default, the Discount table has no records. By using a FoundAndEmpty cache on this table, the keys that are queried for but not found are stored in the cache. Subsequent queries for these same non-existent records can be answered from the cache without a round trip to the database.

Box 2: NotInTTS

All successful caching key selects are cached.

When in a transaction (after ttsBegin), no caches made outside the transaction are used. When inside a transaction, the record is read once from the database and subsequently from the cache. The record is select-locked when reading in a transaction, which ensures that the record cached is not updated while the transaction is active.

A typical example of the NotInTTS property is on the CustTable in the Microsoft Dynamics AX application. It is acceptable to read outdated data from the cache outside a transaction, but when data is used for validation or creating references, it is ensured that the data is real-time.

Box 3: EntireTable

Creates a set-based cache on the server. The entire table is cached as soon as at least one record is selected from the table. An EntireTable cache is flushed whenever an insert, update or delete is made to the table. So first select read all records from DB for the selected company and all the further selects will take data from the cache instead of DB calls.

Box 4: Found

All successful caching key selects are cached. All caching key selects are returned from the cache if the record exists there. A select forUpdate in a transaction forces reading from the database and replaces the record in the cache. This is typically used for static (lookup) tables, such as Unit, where the record usually exists.

Reference: <http://gautamax.blogspot.com/2017/01/cache-lookup-property-of-table-in-ax.html>

#### QUESTION 7 HOTSPOT

You are a Dynamics 365 Finance developer. You create a form.

You must ensure that only sales managers can view the form.

You need to set up security for the form.

What should you do? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Step 1: Add the form object to the entry point node of a new privilege.

Your desired security privilege you can either directly set form control permissions or Entry Points.

For the Entry point method you need first need to add new entry point and set its object type and object name properties or for existing ones select desired entry point and click on drop down arrow and on controls right click and select new control, and now set its grant and name properties to desired control and its access rights.

Step 2: Add the privilege to a new duty

You need to assign this privilege in desired security role and security duty.

Step 3: Add the duty to the security role for sales managers.

Reference: <https://www.cloudfronts.com/set-form-control-access-via-security-role-in-d365-finance/>

#### QUESTION 8 HOTSPOT

You are a Dynamics 365 Finance developer.

You need to create a security rule that meets the following requirements:

- Provide the same permissions as HcmWorkerActionHireRead
- Assign the Update level access and the HcmHumanResourceManager Role

Which settings should you use? To answer, select the appropriate option in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**



**Correct Answer:**

**Section:** [none]  
**Explanation**

**Explanation/Reference:**

#### QUESTION 9 HOTSPOT

You are a Dynamics 365 Finance developer.

You launch the Performance Timer tool to troubleshoot performance issues with a business process.

You need to view the results from the tool.

What does the tool present? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

#### Answer Area

Performance Timer tool link

Data

Forms

	▼
	The number of open forms and the rate at which they are opened and closed (per second).
	The total number of forms and the rate at which they are opened and closed (per second).
	The number of open forms and the rate at which they are opened and closed (per minute).
	The total number of forms and the rate at which they are opened and closed (per minute).

Services Session Provider

	▼
	The number of open forms and the rate at which they are opened and closed (per second).
	The total number of forms and the rate at which they are opened and closed (per second).
	The number of open forms and the rate at which they are opened and closed (per minute).
	The total number of forms and the rate at which they are opened and closed (per minute).

**Correct Answer:**

## Answer Area

### Performance Timer tool link

### Data

Forms		▼
	The number of open forms and the rate at which they are opened and closed (per second).	
	The total number of forms and the rate at which they are opened and closed (per second).	
	The number of open forms and the rate at which they are opened and closed (per minute).	
	The total number of forms and the rate at which they are opened and closed (per minute).	
Services Session Provider		▼
	The number of open forms and the rate at which they are opened and closed (per second).	
	The total number of forms and the rate at which they are opened and closed (per second).	
	The number of open forms and the rate at which they are opened and closed (per minute).	
	The total number of forms and the rate at which they are opened and closed (per minute).	

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1: The number of open forms and ..(per second)

Forms - Forms will show how many forms are currently open, plus the rate at which they opened and closed (per second), and a set of counters, such as the total amount of created or closed forms.

Box 2: The number of open forms and ..(per second)

This should really be: Services Session provider - This is the total number of sessions created.

Reference: <https://docs.microsoft.com/en-us/dynamics365/fin-ops-core/dev-itpro/perf-test/performance-timer>