Lab: Designing ASP.NET MVC Core Web Applications

# Scenario

Your team has chosen ASP.NET MVC Core as the most appropriate ASP.NET programming model to create the photo sharing application for the Adventure Works web application. You need to create a detailed project design for the application, and have been given a set of functional and technical requirements with other information. You have to plan:

* An MVC model that you can use to implement the desired functionality.
* One or more controllers and controller actions that respond to users actions.
* A set of views to implement the user interface.
* The locations for hosting and data storage.

# Objectives

After completing this lab, you will be able to:

* Design an ASP.NET MVC Core web application that meets a set of functional requirements.
* Record the design in an accurate, precise, and informative manner.

Estimated Time: 40 minutes

# Exercise 1: Planning Model Classes

## Scenario

You need to recommend an MVC model that is required to implement a photo sharing application. You will propose model classes based on the results of an initial investigation into the requirements.

The main tasks for this exercise are as follows:

1. Examine the initial investigation.
2. Plan the photo model class.
3. Plan the comment model class.

## Task 1: Examine the initial investigation.

1. Open the InitialInvestigation document by using the following information:

* File location: Allfiles (C):\LabfilesMVCCore\Mod02

1. Enable the Navigation Pane feature.
2. Read the contents of the Introduction section.
3. Read the contents of the General Description section.
4. Read the Use Cases section and then examine the Use Case Summary diagram.
5. Close the InitialInvestigation document.

## Task 2: Plan the photo model class.

1. Open the DetailedPlanningDocument document and locate the MVC Model section.
2. Based on your reading of the InitialInvestigation document, add and describe a model class for photos in Table 1: MVC Model.
3. Add properties to the model class you created in Table 1: MVC Model. The model class will have many properties
4. Add data types to the photo properties. Each property will have one and only one data type.
5. Merge the rows in the Model Class and Description columns and save the document.
6. Create a new UML Logical Data Model diagram in Visio.
7. Add a new Class shape to model photos in the UML diagram.
8. Add attributes to the new Class shape for each of the properties you planned for the photos.
9. Save the created diagram by using the following information:

* Folder path: Allfiles (C):\LabfilesMVCCore\Mod02
* File name: PhotoSharingLDM

## Task 3: Plan the comment model class.

1. Open the DetailedPlanningDocument document and locate the MVC Model section.
2. Based on your reading of the InitialInvestigation document, add and describe a model class for photos in Table 1: MVC Model.
3. Add properties to the model class you created in Table 1: MVC Model.
4. Add data types to the comment properties.
5. Merge the rows in the Model Class and the Description columns, and then save the document.
6. Add a new Class shape to model comments in the UML diagram.
7. Add attributes to the new Class shape for each of the properties you planned for comments.
8. In the UML diagram, connect the two class shapes.
9. Hide the end names for the connector.
10. Set multiplicity for the ends of the connector, and save the diagram.

**Results**: After completing this exercise, you will be able to create proposals for a model, and configure the properties and data types of the model classes.

# Exercise 2: Planning Controllers

## Scenario

You need to recommend a set of MVC controllers that are required to implement a photo sharing application. You will propose controllers based on the results of an initial investigation into the requirements.

The main tasks for this exercise are as follows:

1. Plan the photo controller.
2. Plan the comment controller.

## Task 1: Plan the photo controller.

1. Open the DetailedPlanningDocument document and locate the MVC Controllers section.
2. Based on your reading of the InitialInvestigation document, add a controller for photos in Table 2: MVC Controllers.
3. Add actions to the controller for photos in Table 2: MVC Controllers.
4. Add descriptions for each of the actions you have planned.
5. Merge rows in the Controller column and save the document.

## Task 2: Plan the comment controller.

1. Based on your reading of the InitialInvestigation document, add a controller for photos in Table 2: MVC Controllers.
2. Add actions to the controller for comments in Table 2: MVC Controllers.
3. Add descriptions for each of the actions you have planned.
4. Merge rows in the Controller column and save the document.

**Results**: After completing this exercise, you will be able to create proposals for controllers and configure their properties and data types.

# Exercise 3: Planning Views

## Scenario

You need to recommend a set of MVC views that are required to implement a photo sharing application. You will propose views based on the results of an initial investigation into the requirement.

The main tasks for this exercise are as follows:

1. Plan the single photo view.
2. Plan the gallery view.

## Task 1: Plan the single photo view.

1. Add a controller to the Table 3: MVC Views table.
2. Add the required views to the Controllers.
3. Add a description to the views.
4. Merge rows in the Controller column and save the document.
5. Create a new wireframe diagram in Visio.
6. Add a new Application Form shape to the wireframe diagram.
7. Add a menu to the wireframe diagram.
8. Add a panel for the photo to the wireframe diagram.
9. Save the diagram by using the following information:

* File location: Allfiles (C):\LabfilesMVCCore\Mod02
* File name: SinglePhotoWireframe

## Task 2: Plan the gallery view.

1. Create a new wireframe diagram in Visio.
2. Add a new Application Form shape to the wireframe diagram.
3. Add a menu to the wireframe diagram.
4. Add multiple panels to the photo to the wireframe diagram.
5. Save the diagram by using the following information:

* File location: Allfiles (C):\LabfilesMVCCore\Mod02
* File name: PhotoGalleryWireframe

**Results**: After completing this exercise, you will create proposals for views and their layouts.

# Exercise 4: Architecting an MVC Web Application

## Scenario

You need to recommend a web server and database server configuration that is required to implement a photo sharing application. You will propose details based on the results of an initial investigation into the requirements.

The main tasks for this exercise are as follows:

1. Hosting options.
2. Choose a data store.

## Task 1: Hosting options.

1. Based on your reading of the InitialInvestigation document, add a description of the web server arrangements that are suited to host the photo sharing application.

## Task 2: Choose a data store.

1. Based on your reading of the InitialInvestigation document, add a description of the database server arrangements that are suited to host the photo sharing application.

**Results**: After completing this exercise, you will be able to create proposals for hosting arrangements.

**Question**: What model classes should be created for the photo sharing application based on the initial investigation?

**Question**: What controllers should be created for the photo sharing application based on the initial investigation?

**Question**: What views should be created for the photo sharing application?