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| **BAHRIA UNIVERSITY (KARACHI CAMPUS)**  **ASSIGNMENT # 1 - SPRING 2023**  **Cloud Computing (SEN-325)**  **[CLO 2]**      Class: **BSE-6 (B)**  Max Marks: **5**  **Name: Muhammad Junaid Saleem Qadri E.no: 02-131202-057**  Course Instructor: **Engr. Muhammad Faisal** |

[The marks of this assignment may increase or decrease]

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| **Read Carefully:**   * The deadline for this assignment is *before* or *on* **Thursday, 5th May, 2023.**     **WARNINGS**:   * This is an individual assignment; you must implement it by yourself. Any form of plagiarism will result in receiving zero in the assignment. * Late submission will not be accepted. Any assignment submitted after the cutoff time will receive zero. |

This assignment is divided into two parts

1. Compare the following architecture patterns
   1. MVC
   2. MVVM
   3. MVP

1. Write the entire process of creating Web API using
   1. MVVM
   2. MVP

To submit these answers the deadline is:

**5th May, 2023**

If you have any query, feel free to contact at: **mfaisal.bukc@bahria.edu.pk**

Answer 1:

Software architects often use architecture patterns to design and develop complex applications that meet specific requirements. Three common architecture patterns are Model-View-Controller (MVC), Model-View-ViewModel (MVVM), and Model-View-Presenter (MVP).

**MVC :**

MVC is an architecture pattern that separates an application into three main components: the model, the view, and the controller. The model represents the data and the business logic of the application. The view represents the user interface of the application. The controller manages the flow of data between the model and the view. MVC is best suited for applications that require a lot of user input.

**MVVM :**

MVVM is an architecture pattern that separates an application into three main components: the model, the view, and the viewmodel. The model represents the data and the business logic of the application. The view represents the user interface of the application. The viewmodel is responsible for managing the state of the view, handling user input, and exposing data to the view. MVVM is best suited for applications that require a lot of data binding.

**MVP :**

MVP is an architecture pattern that separates an application into three main components: the model, the view, and the presenter. The model represents the data and the business logic of the application. The view represents the user interface of the application. The presenter acts as a mediator between the view and the model, handling user input and updating the view based on changes in the model. MVP is best suited for applications that require a lot of business logic.

**Answer 2:**

### Creating Web API using MVVM

1. To create a Web API using MVVM, you'll need to create a new [ASP.NET](http://asp.net/) Web Application project in Visual Studio. This project can be created by following the standard procedure for creating a new project in Visual Studio.
2. Once you've created the new project, you should choose the Web API template. This will provide you with a starting point for building your Web API.
3. Create a new folder named Models in your project. This folder will contain the models that your Web API will use.
4. Within the Models folder, you'll need to create a new class. This class will define the properties for the model that you'll use in your Web API.
5. Next, you'll need to create a DbContext class to define the database schema. This class will define how your Web API interacts with the database.
6. Create a new folder named ViewModels in your project. This folder will contain the view models that your Web API will use.
7. Within the ViewModels folder, you'll need to create a new class. This class will define the logic for getting and updating data in your Web API.
8. Create a new folder named Views in your project. This folder will contain the views that your Web API will use to display data.
9. Within the Views folder, you'll need to create a new .cshtml file. This file will contain the code that displays the data in your Web API.

### Creating Web API using MVP

1. To create a Web API using MVP, you'll need to create a new [ASP.NET](http://asp.net/) Web Application project in Visual Studio. This project can be created by following the standard procedure for creating a new project in Visual Studio.
2. Once you've created the new project, you should choose the Web API template. This will provide you with a starting point for building your Web API.
3. Create a new folder named Models in your project. This folder will contain the models that your Web API will use.
4. Within the Models folder, you'll need to create a new class. This class will define the properties for the model that you'll use in your Web API.
5. Next, you'll need to create a DbContext class to define the database schema. This class will define how your Web API interacts with the database.
6. Create a new folder named Presenters in your project. This folder will contain the presenters that your Web API will use.
7. Within the Presenters folder, you'll need to create a new presenter class. This class will define the logic for getting and updating data in your Web API.
8. Create a new folder named Views in your project. This folder will contain the views that your Web API will use to display data.
9. Within the Views folder, you'll need to create a new .cshtml file. This file will contain the code that displays the data in your Web API. By following these steps, you can create a powerful and flexible Web API using MVP architecture.