# Topic 1 DQ 1

**What are the primary responsibilities of the Model, View, and Controller components in the MVC (Model-View-Controller) framework? Provide examples of how each component interacts within a .NET MVC application.**

The MVC framework separates the user interface, data storage, and business logic into three separate components: Model, View, and Controller. The model represents all the data logic and data that is stored in the application and provides a way to access data from the UI, such as user input. The view is where the user interface lives and what the user sees. It typically contains HTML markup, CSS stylesheets, and JavaScript code that provides the functionality like form validation along with drag-and-drop interactions. The controller is responsible for handling user interaction with the view, along with performing any logic required to prepare data for display. If a user clicks a button, it will trigger an event with JavaScript which would then be handled by the controller.

# Topic 1 DQ 2

**Compare and contrast the features and usability of Visual Studio for Windows and Visual Studio Code for developing .NET Core applications. Discuss scenarios where one might be preferred over the other.**

Visual Studio is an Integrated Development Environment (IDE) that leverages Microsoft’s software development platform to create and manage native code. It’s an all-in-one solution favored by C++ and .NET developers working on the Windows OS. Visual Studio Code is a powerful source code editor (or text editor) that supports multiple languages, tons of extensions, and is compatible with Windows, Mac OS, and Linux. The main difference between the two is that Visual Studio is a comprehensive Integrated Development Environment while Visual Studio Code is an Extension-based Code Editor. Scenario wise, if you need a lightweight editor for smaller projects that also supports multiple languages, choose Visual Studio Code. If you need a full-featured IDE for advanced debugging and project management tools, especially with .NET development, choose Visual Studio.