**MVVM**

MVVM (Model-View-ViewModel) is an architectural pattern used in Android app development to separate concerns and improve code organization, maintainability, and testability. Here's a breakdown of each component:

1. **\*\*Model\*\*:**

- Represents the data and business logic of the application.

- It could be data from a local database, network requests, or any other data source.

- The model typically consists of classes and components responsible

for data manipulation and retrieval.

1. **\*\*View\*\*:**

- Represents the UI components of the application.

- In Android, views are typically implemented using activities

fragments, layouts, and XML files.

- Views are responsible for displaying data and capturing user input.

1. **\*\*ViewModel\*\*:**

- Sits between the view and the model.

- Acts as a mediator between the view and the model, handling the UI-related logic.

- The ViewModel exposes data to the view and provides methods for handling user interactions.

- It's lifecycle-aware, meaning it can survive configuration changes (like screen rotations) without losing data.

- ViewModel instances are typically associated with activities or fragments and are retained during configuration changes.

The flow of data in MVVM typically looks like this:

1. \*\***View**\*\*: Captures user input and displays data.
2. \*\***ViewModel**\*\*: Receives user input from the view, interacts with the model to fetch or manipulate data, and updates the view with the results.

3. \*\***Model**\*\*: Provides the data required by the ViewModel and performs any necessary business logic.

**Benefits of MVVM in Android development include:**

**- \*\*Separation of Concerns\*\*:**

MVVM separates the UI logic (View) from the data logic (ViewModel and Model), making it easier to maintain and test each component independently

**- \*\*Testability\*\*:**

With MVVM, business logic is moved out of activities and fragments into ViewModels, which are easier to test because they don't rely on Android framework components.

**- \*\*Reusability\*\*:**

ViewModels can be reused across different UI components, reducing code duplication.

**- \*\*Lifecycle Awareness\*\*:**

ViewModels are lifecycle-aware, meaning they can handle configuration changes without losing data or leaking resources.