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MPL Practical: 2

Aim:

To design a Flutter user interface (UI) by incorporating common widgets such as **Container**, **Row**, **Column**, **Text**, **Image**, **Button**, and **ListView**.

Theory:

Flutter provides a rich set of pre-designed and customizable widgets that help developers build visually appealing and interactive user interfaces. Widgets in Flutter follow a hierarchical structure and can be classified into two main types:

1. **Stateless Widgets** – These widgets do not change dynamically and remain the same throughout the app's lifecycle. Example: **Text**, **Image**, **Icon**.
2. **Stateful Widgets** – These widgets maintain a state and update dynamically based on user interaction or data changes. Example: **TextField**, **Checkbox**, **Switch**.

Some commonly used widgets in Flutter UI design:

- **Container** – Used for styling and layout control with padding, margin, and decoration.
- **Row & Column** – Used to align widgets horizontally (**Row**) or vertically (**Column**).
- **Text** – Displays static or dynamic text content.
- **Image** – Loads and displays images from assets, network, or memory.
- **Button Widgets** – **ElevatedButton**, **TextButton**, and **IconButton** for user interactions.
- **ListView** – A scrollable list of items, useful for dynamic content display.

By using these widgets, developers can create visually appealing and responsive user interfaces for Flutter applications.

Steps to Create a Splash Screen in Flutter

1 Create a Splash Screen File

- Create a new Dart file (**splash_screen.dart**) for the splash screen.

2 Use a Timer for Auto-Navigation

- Implement a **Timer** inside **initState()** to delay navigation to the home screen after a few seconds.

3 Set a Gradient Background

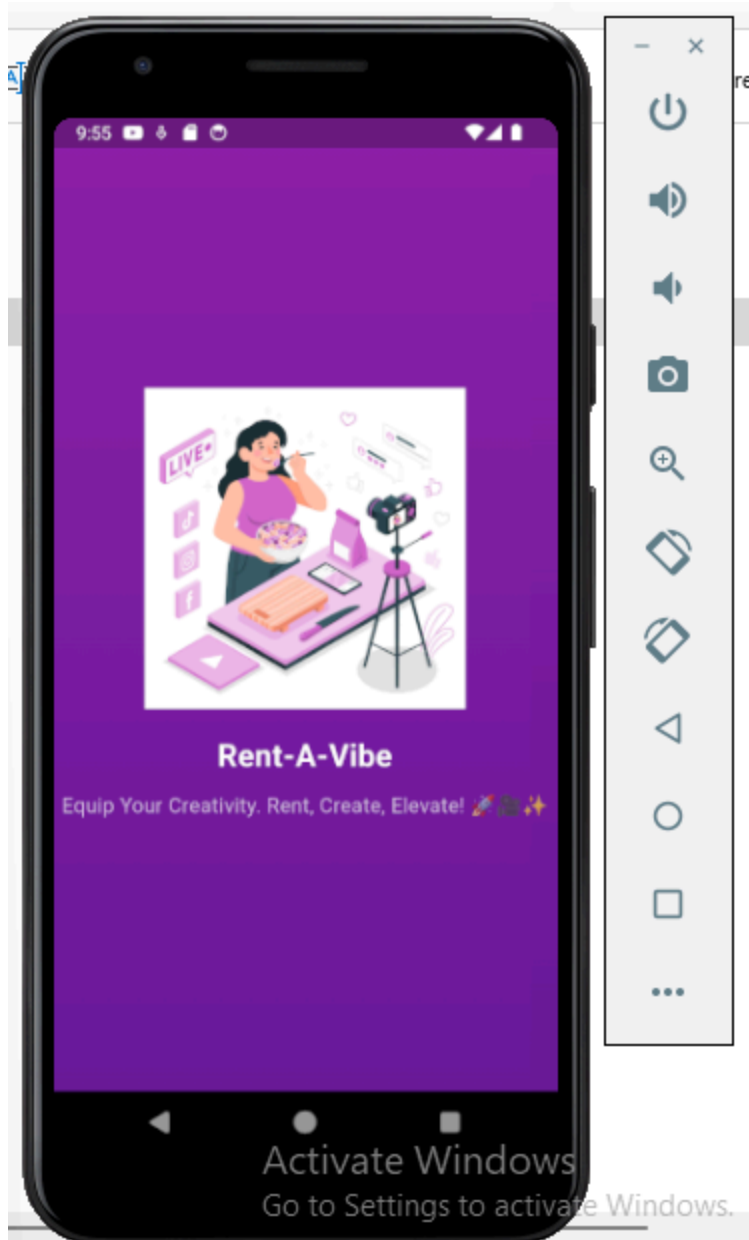
- Use `BoxDecoration` with `LinearGradient` to apply a smooth purple gradient.

4 Add an Image and Text

- Use `Image.asset()` to display a splash screen image.
- Include a title and tagline using `Text()` widgets with proper styling.

5 Modify `main.dart` to Launch Splash Screen

- Set `SplashScreen()` as the initial screen in `MaterialApp`.



Conclusion:

The use of common Flutter widgets simplifies UI design and enhances app development by providing pre-built components that are highly customizable. Mastering these widgets helps developers create efficient, flexible, and interactive user interfaces in Flutter applications.