Module – 3

1. Difference Between Stateless and Stateful Widgets

- **StatelessWidget**:
  - Cannot change or update once built.
  - Used for static content like labels, icons, or images that don't need to change.
  - Example: A title text or a logo.
- **StatefulWidget**:
  - Can change during runtime using setState().
  - Used for dynamic content like counters, forms, or anything that updates.
  - Example: A button that increases a number when clicked.

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2. Widget Lifecycle and State Management in Stateful Widgets

- A **StatefulWidget** has a lifecycle managed through special methods.
- Important lifecycle methods:
  - createState() – Creates the widget's state.
  - initState() – Called once when the widget is created.
  - build() – Called whenever the UI needs to be updated.

- ○ setState() – Updates the UI when data changes.
  - ○ dispose() – Called when the widget is removed from the screen.
- State is managed using the State class, and UI updates are done using setState().

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3. Five Common Flutter Layout Widgets

1. **Container** – A box that can have padding, color, size, and decorations.
2. **Column** – Arranges widgets vertically (top to bottom).
3. **Row** – Arranges widgets horizontally (left to right).
4. **Center** – Places a child widget in the center of the screen or parent.
5. **Expanded** – Fills available space inside a Row or Column equally.