

Placement Training: Interview Questions on Flutter (Basic to Intermediate)

- Q: What is Flutter and who developed it?

A: Flutter is an open-source UI toolkit developed by Google for building natively compiled applications for mobile, web, and desktop from a single codebase.

- Q: What is Dart and why is it used in Flutter?

A: Dart is a client-optimized programming language used in Flutter for its fast compilation, hot reload support, and smooth UI rendering.

- Q: What is the difference between StatelessWidget and StatefulWidget?

A: - StatelessWidget: Immutable, UI doesn't change

- StatefulWidget: Mutable, UI updates on state change

- Q: What is the build() method in Flutter?

A: The build() method describes the UI and is called whenever the widget needs to be rendered.

- Q: What is hot reload in Flutter?

A: Hot reload allows developers to see code changes instantly without restarting the app, preserving its current state.

- Q: What is the widget tree in Flutter?

A: It's a hierarchical structure of widgets. Every element in Flutter's UI is a widget.

- Q: What are keys in Flutter and why are they important?

A: Keys help Flutter differentiate widgets across builds, preserve state, and optimize performance.

- Q: What is a Future and async-await in Dart?

A: Future represents a value that will be available in the future. async-await is used to handle asynchronous operations.

- Q: What is the role of setState() in Flutter?

A: setState() updates the UI by notifying Flutter that the widget's internal state has changed.

- Q: What is the difference between Navigator.push() and Navigator.pushReplacement()?

A: - `push()`: Adds a new screen to the stack

- `pushReplacement()`: Replaces the current screen with a new one

- Q: How is state managed in Flutter?

A: State can be managed using `setState`, `Provider`, `Bloc`, `Riverpod`, `Redux`, and `GetX` among others.

- Q: What are some commonly used widgets in Flutter?

A: `Container`, `Row`, `Column`, `Text`, `Image`, `Scaffold`, `AppBar`, `ListView`, `TextField`, `ElevatedButton`, etc.

- Q: What is the difference between `mainAxisAlignment` and `crossAxisAlignment`?

A: `mainAxisAlignment` aligns children along the main axis (horizontal in `Row`, vertical in `Column`), while `crossAxisAlignment` aligns perpendicularly.

- Q: What is the `pubspec.yaml` file in Flutter?

A: It's a configuration file that contains metadata, assets, fonts, and dependencies for the project.

- Q: What is a `Scaffold` widget in Flutter?

A: `Scaffold` provides a basic layout structure with `AppBar`, `Drawer`, `BottomNavigationBar`, etc.

- Q: How to add an image in Flutter?

A: Place it in the `assets` folder, declare it in `pubspec.yaml`, and use `Image.asset('path')` to display it.

- Q: What is the difference between `final` and `const` in Dart?

A: - `final`: Runtime constant (value assigned once)

- `const`: Compile-time constant (value fixed at compile time)