

1. Explain the benefits of using flutter over other cross platforms frameworks.

→ Benefits :-

- Single Codebase :-
write once, run on both iOS and android.
- Fast Development :-
Hot reload allows real time develop updates.
- Rich UI Components :-
Extensive customizable widgets for Material and Cupertino designs.
- Performance :-
Compiles to native ~~RAM~~ ARM code for smooth performance.
- Strong Community :-
growing ecosystem of packages and plugins.
- Web and Desktops Support :-
Versatile for multiple platforms.

2. Describe the role of Dart in Flutter. What are its advantages for mobile development?

Step

- Optimized for UI:- Design for building user interface.

Step

- Strongly Typed:- Catches errors at compile time.

Step

- Asynchronous Programming:- Simplifies handling of async tasks.

- Rich Standard library:- Comprehensive library for common tasks.

3. Outline the steps to set up Flutter Development environment.

Step:1 Install Flutter SDK:-

Download & extract the SDK.

Step:2 Add to Path:-

Include 'Flutter/bin' in your system Path.

Step: 3 Install an IDE :-

Use Android Studio with Flutter / Dart Plugin.

Step: 4 Set Up Device:-

Configure Android emulator or iOS emulator.

Step: 5 Run the flutter doctor.

4. Describe basic flutter app structure explaining main.dart, the main function and the widget tree.

→ main.dart :-

entry point of the app.

→ main function:-

calls 'runApp()' to start the app.

→ Widget tree:-

Composed of widgets that defines the UI layout and behaviours typically starting with Material App.