**Q no 1: What is flutter?**

**Answer:** basically flutter is an open source framework designed by google to build beautiful cross platform applications from single codebase. It is made as a cross-platform SDK that can be used to build frontend and backend applications in a variety of programming languages, including Dart, Java, C/C++, and more.

**Q no 2: How flutter works.**

**Answer:** Flutter is an open-source UI toolkit or framework created by Google. It is cross-platform and can create applications for android, IOS, web, and desktops with a single codebase. It is fairly new and still maturing day by day. The language used in flutter framework is dart.

**How Flutter architecture works**

The flutter framework is a layered system with each layer dependent on the layer below. A single layer has several independent libraries.

On a high level, the flutter framework’s architecture has three main parts or layers:

* **Embedder**
* **Engine**
* **Framework**

**Embedder layer**

The embedder layer has platform-specific embedders, many of which provide an entry point and coordinate with their respective operating system to access services like rendering, storage, and more. It has many embedders for possible targeted platforms.

Java and C++ are used in embedders for android, Objective-C/ C++ for IOS and mac OS, and C++ for Linux and windows.

**Engine layer**

The engine layer is the core of flutter written in C/C++. It is responsible for taking care of input, output, and rasterizing composited scenes, as flutter is a UI toolkit. It uses the skia library for rendering graphics.

The engine layer is also responsible for service and network protocols, such as network input and output, file management, and the core API of flutter. The flutter engine layer can be accessed through the dart UI library, which wraps all these functionalities in dart classes.

**Framework layer**

In the framework layer, the developer interacts with and writes flutter applications. It is written in dart language and has predefined libraries, layouts, and more.

The framework layer has three main layer components, which are the following:

* Foundation layer
* Rendering layer
* Widget layer

**Foundation layer**

To Flutter, some foundational classes and some building block services provide abstraction. Some of the main building block services are animations and gestures.

Flutter can support animations like tween, hero, silver, transform, fade in the widget, animation builder, animated opacity, and any animation related to physics.

The gesture is a widget used to detect gestures like tapping, dragging, and scaling. It has an invisible widget name gesture detector.

**Rendering layer**

This layer is responsible for converting widgets in a flutter to pixels and showing them on the screen. It takes a tree of renderable objects called the widgets tree. Whenever any animation, input, or state of the widget changes, this layer is called, which updates the layout and shows them on the screen.

**Widget layer**

A widget is a like component in React JS. Each render able object has its widget, which the developer uses to make a widget tree. There are many predefined widgets. We can also write code and create a new widget that can be used in an application, just like we make components in ReactJS.

**Question no 03:** why we use flutter instead of using Native platforms?

Answer: Flutter is an open-source UI framework developed by Google in 2017 that aims to design cross-platform apps to run on mobile, Windows, mac OS, and Linux as well as on the web. Flutter’s framework is built upon Dart. A lot of big companies like Alibaba, Philips Hue, Hamilton, etc., choose Flutter for development. Moreover, Google frequently provides updates for Flutter, improving its performance with each update.

* Great UI
* It has a number of widgets.
* Apps are faster
* Helps build web apps (Flutter 2)
* Well-structured documentation and community
* Helps replicate and create the same UI for different devices