UNIT: II INTRODUCTION TO ANDROID

Introduction to Android: The Android Platform, Android SDK, Eclipse Installation, Android Installation, building you First Android application, Understanding Anatomy of Android Application, Android Manifest file.

ANDROID SDK

Android SDK stands for Android Software Development Kit which is developed by Google for Android Platform. With the help of Android SDK, we can create android Apps easily.

About Android SDK

Android SDK is a collection of libraries and Software Development tools that are essential for Developing Android Applications. Whenever Google releases a new version or update of Android Software, a corresponding SDK also releases with it. In the updated or new version of SDK, some more features are included which are not present in the previous version. Android SDK consists of some tools which are very essential for the development of Android Application. These tools provide a smooth flow of the development process from developing and debugging. Android SDK is compatible with all operating systems such as Windows, Linux, macOS, etc.

Components of Android SDK

Android SDK Components play a major role in the Development of Android applications. Below are the important components:

Android SDK Tools

Android SDK tool is an important component of Android SDK. It consists of a complete set of development and debugging tools. Below are the SDK developer tools:

- Android SDK Build tool.
- Android Emulator.
- Android SDK Platform-tools.
- Android SDK Tools.

Android SDK Build-Tools

- Android SDK build tools are used for building actual binaries of Android App. The main functions of Android SDK Build tools are built, debug, run and test Android applications. The latest version of the Android SDK Build tool is 30.0.3. While downloading or updating Android in our System, one must ensure that its latest version is download in SDK Components.

Android Emulator

- An Android Emulator is a device that simulates an Android device on your system. Suppose we want to run our android application that we code. One option is that we will run this on our Android Mobile by Enabling USB Debugging on our mobile. Another option is using Android Emulator. In Android Emulator the virtual android device is shown on our system on which we run the Android application that we code.

- Thus, it simply means that without needing any physical device Android SDK component "Android Emulator" provides a virtual device on the System where we run our Application. The emulator's come with the configuration for Various android phones, tablets, Wear OS, and Android TV devices.

In Android Virtual Emulator all functions that are feasible on real Android mobile is works on virtual Device like:

- phone calls, text messages.

- stimulate different network speeds.

- specify the location of a device

- access on google play store and lot's more.

But there is one disadvantage of this emulator is that. It is very slow when System's PC has less RAM. It works fine when a maximum GB of RAM is present on our device.

Android SDK Platform-tools

Android SDK Platform-tools is helpful when we are working on Project and they will show the error messages at the same time. It is specifically used for testing. It includes:

- Android Debug Bridge (ADB), is a command-line tool that helps to communicate with the device. It allows us to perform an action such as Installing App and Debugging App etc.
- Fastboot allows you to flash a device with a new system image.

- Systrace tools help to collect and inspect timing information. It is very crucial for App Debugging.

Android SDK Tools

Android SDK tool is a component of SDK tool. It consists of a set of tools which and other Utilities which are crucial for the development of Android Application. It contains the complete set of Debugging and Development tools for android.

SDK Platforms

The new version of the SDK platform has more features and more compatible but the old version is less compatible with fewer features. Like in Android 11.0(R) have more compatible and have more feature but the below versions like Android 10.0(Q), Android4.4(KitKat) have less feature and is less compatible.

SDK Update Sites

In SDK Update Sites, some sites are embedded in it which will check for Android SDK Updates Tools. In this, one must ensure we don't unclick the button below because these are checked by default which will check for updates if we will unclick it then it doesn't check updates for those.