

Assignment - OS

* Title: Android Studio Installation

* Problem Statement: Download, install and configure Android Studio on Linux / Windows platform.

* Objective:

- To learn android studio installation
- To learn and develop android application.

* Outcome:

Students shall be able to :

1. Install Android Studio
2. Develop an application as per requirement.

* Software and Hardware Requirements:

Fedora Linux / Windows 10 64 bit , Android Studio , Oracle Java JDK 8 .

* Theory:

ANDROID STUDIO: It is the official integrated development environment (IDE) for google's android operating system , built on JetBrains's IntelliJ IDEA software and designed specifically for android development . It is available for download on windows , MACOS & Linux based operating system .

Use:

It has a strong editor tool for developing creative UI and emulators for different versions to test and simulate sensors without having actual android devices. It also has a very useful Gradle design plugin. using which you can create application files with different configurations. Moreover it makes exploring and uploading apk on playstore easy with a single click. It also has ANT build if you prefer that.

° Differences between Android Studio and Eclipse.

- It supports gradle.
- In the layout view you have the option to view both the actual layout and the xml at the same time, while in Eclipse you must choose between the two tabs.

• Installation Steps:
(Windows 10)

Step 1: To download the Android Studio, visit official Android Studio website in your web browser.

Step 2: Click on "Download Android Studio" option

Step 3: Double click on the downloaded "Android Studio-ide.exe" file

Step 4: "Android Studio Setup" will appear on the screen and click "Next" to proceed.

Step 5: Select the components you want to install and click on "Next" button.

Step 6: Now browse the location where you want to install the Android Studio and click "Next" to proceed.

Step 7: Choose a start menu folder for the "Android Studio" shortcut and click the "Install" button to proceed.

Step 8: After successful completion of installation click on the "Next" button.

Step 9: Click on "Finish" button to proceed.

Step 10: "Android Studio Setup Wizard" will appear with welcome wizard. Click on "Next" button.

Step 11: Select the 'Standard' option if you are a beginner. It will install the most common settings and options for you. Click on "Next" to proceed.

Step 12: Now, select the user interface theme as you want, then click on "Next" button.

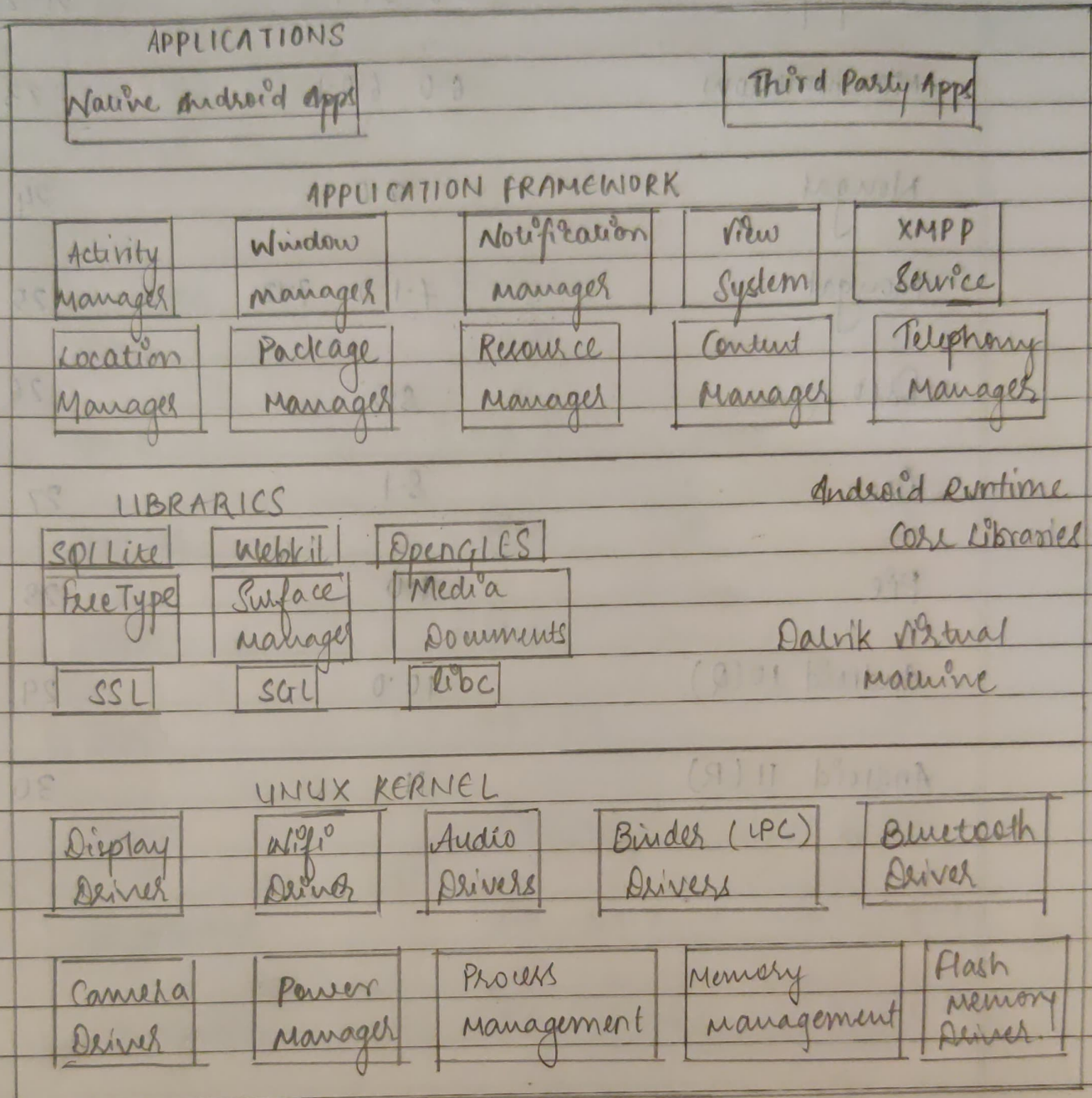
Step 13: Now, click on "Finish" button to download all the SDK components. And the downloading & installation of components get started.

Step 14: After downloading all the necessary components, click on 'Finish' button.

Conclusion:

Students learnt to download, install and configure android studio on their operating system.

* Android Architecture :



Android OS is a stack of software components which is roughly divided into five sections and four main layers as shown in the diagram.

i) Linux Kernel.

- This provides a level of abstraction between the device hardware and its contains all essential hardware drivers like camera, keypad, display, etc.

ii) Libraries:

On top of linux kernel there is a set of libraries including open-source web browser engine webkit, well known library libc, etc.

iii) Android Runtime:

- This section provides a key component called Dalvik Virtual Machine which is a kind of JVM specially designed and optimized for android.

iv) Application Framework:

- provides many higher-level services to apps in form of Java classes
- Provides managers such as Activity Manager, Window Manager, Notification Manager, etc.

Android Versions:

The development of Android OS was started by Android in 2003 and later on it was purchased by Google in 2005. The beta version was released on Nov 5, 2007 while the software development kit (SDK) was released on Nov 12, 2007.

versions:

Codename	Version No.	API level
None	1.0	1
None	1.1	2
Cupcake	1.5	3
Donut	1.6	4
Eclair	2.0 - 2.1	5-7
Froyo	2.2 - 2.2.3	8
Gingerbread	2.3 - 2.3.7	9-10
Honey Comb	3.0 - 3.2.6	11-13
Icecream Sandwich	4.0 - 4.0.4	14-15
Jelly Bean	4.1 - 4.3.1	16-18

Kitkat	4.4 - 4.4.4	19-20
Lollipop	5.0 - 5.1.1	21-22
Marshmallow	6.0 - 6.0.1	23
Nougat	7.0	24
Nougat	7.1.0 - 7.1.2	25
Oreo	8.0	26
Oreo	8.1	27
Pie	9.0	28
Android 10 (Q)	10.0	29
Android 11 (R)	11	30