Web tech

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Android

→ AIDL (android interface Definition language).
→ Android Architecture – (C.T.2)
→ Android manifest xml file.
→ Core building blocks of android
→ Sqlite (opensource relational db)
→ methods of media player.
→ Dalvik Virtual machine.
→ implicit intent vs explicit Intent (diff)
→ Android debug bridge.

* Methods of media player:

i) start() – used to start audio and video.
ii) stop() – used to stop audio and video.
iii) reset() – used to reset the media player object.
iv) Pause() – used to pause the playing content.
v) isplaying() – to check whether content is playing or not
vi) Set volume() – used to adjust media volume.
vii) set dataSource() – used to specify the path of audio.
viii) seek to() – move song to particular position.

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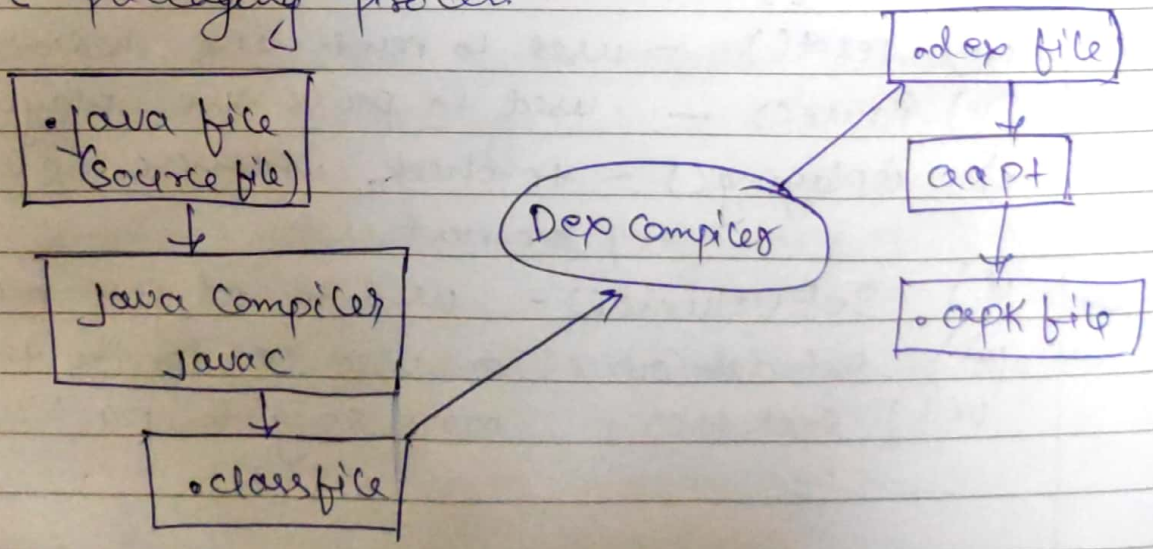
Dalvik Virtual Machine.

→ JVM is high performand and provides better memory mang. but it need to optimized for low-end devices.

— Dalvik is a name of a town in Iceland. Dalvik VM is written by Sun.

- DVM is an android virtual machine optimized for mobile device. It optimizes the virtual machine for memory, battery life & performance.

- Dex compiler converts the class file into the .dex file that run on dalvik VM.
  - multiple class file are converted into one dex file
- Android Assets packaging tool (aapt) handles the packaging process



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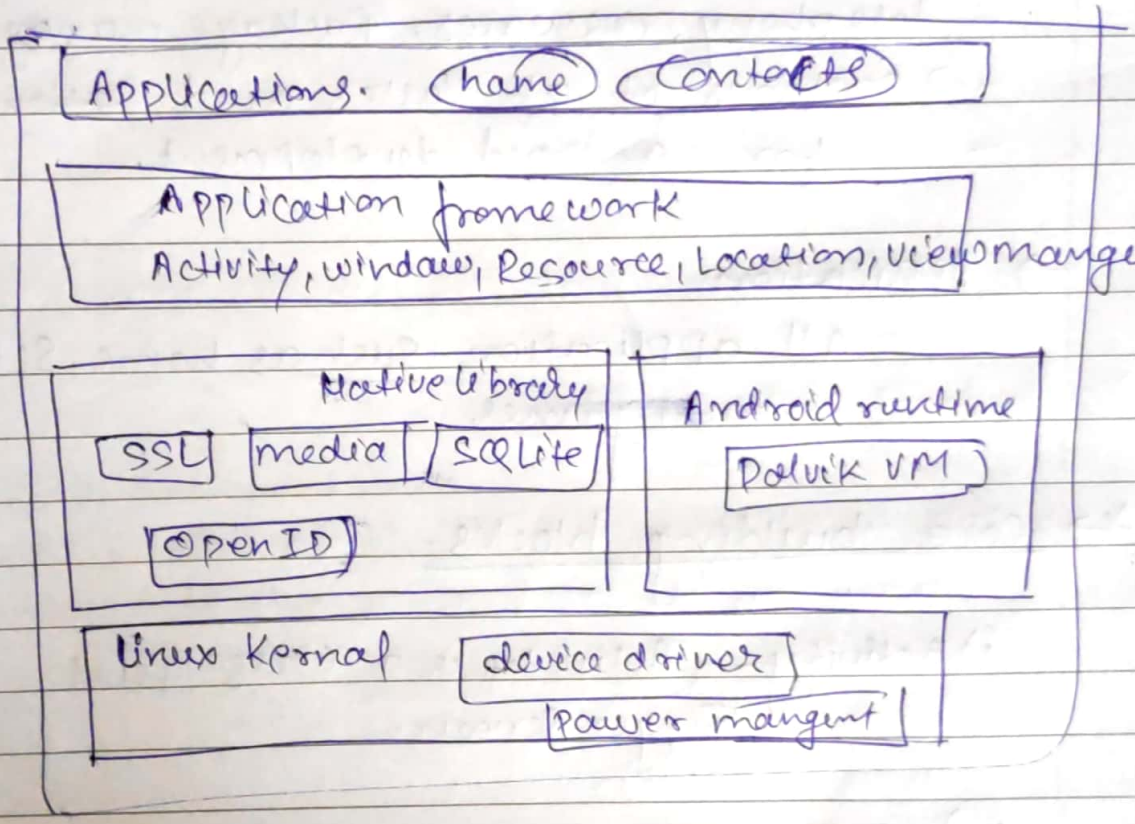
Android Architecture

Five parts

i) Linux Kernel
ii) native libraries.
iii) Android runtime
iv) Application framework
v) Applications



→ Linux Kernel: heart of android architecture exist at root of android architecture.
- responsible for device driver, power management memory management.

→ Native library -
at containing native library such as ssl webkit, media, SQLite,
→ responsible for database, browser support, media for playing, recording,

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-Android runtime-
→ DVM (dalvik virtual machine)
→ responsible to run android apps.
→ DVM is like JVM but optimized for mobile.
→ consume less memory and fast performance.

→ Android framework.
→ It includes API such as user interface, telephony, resources, package manage.
→ provides bt of classes and ~~parts~~ interface for android development.

→ Application
- All application such as home, Setting contact, games.

*→ Core building blocks

i) Activity - Activity is a class that represent Single screen.

ii) view - It is UI such as button, label, text field.

iii) Intent - used to invoke components.
- Start a service
- Launch an activity
- display a web page
- Broadcast a message

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iv) service : It is a background process that for a long time.

v) Content provider = used to share data b/w apps.

vi) Android virtual device → used to test the android app with ~~no~~ need of tablet or mobile.

vii) Android manifest.xml
- like web.xml file
- contains info like activity, content provides.

*) Android Explicit Intent Vs Implicit Intent

`startActivity();`

Explicit Intent
- It specify the component to be invoked from activity.
- we call other activity in android by Explicit Intent.
- we pass info from one activity to another activity.

Implicit Intent
- It doesnot specify the ~~intent~~ component, Intent provides info of available component provided by the System that is to be invoked.

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✳ Android Manifest.xml

the Android Manifest.xml is a xml file that contains information of your package.
- It also includes components of application such as activity, services, broadcast receiver

Other tasks:
- responsible ~~for~~ to protect the application
- declares the android api
- list of instrumentation classes.

It req to save xml file inside the root directory.

✳ Android debug bridge

→ ADB is a command line tool used to bridge connection between an Android device and background running process.

3 Components:

→ (i) First we need to connect computer to a Android device (client).

→ (ii) daemon - It is a service running on both side. Latter it will accept and execute command

(iii) Server - It is a software that communicate with daemon and client.

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Android ~~definition~~ Interface definition language.

- It is similar to other interface definition language.
- It allow users to define the programming interface that both the client and service agree upon in order to communicate with each other.
- AIDL is necessary only if it allow clients from diff app to access Services for IPC
- It handle multithreading in Services.

steps to implement AIDL
- create .aidl file
- implement interface.
- Expose interface to client.