

Mobile Application Design and Development

Mobile Platforms and Application
Development fundamentals

Learning outcomes of this lecture

At the end of this Lecture students will be able to

- Comprehend native mobile operating systems
- Describe cross-platform mobile development
- Understand the fundamentals of mobile Application Development

Native Mobile Application

- A native mobile app is an application developed using platform-specific development tools.
- These apps are developed individually for each of the three popular mobile operating systems.





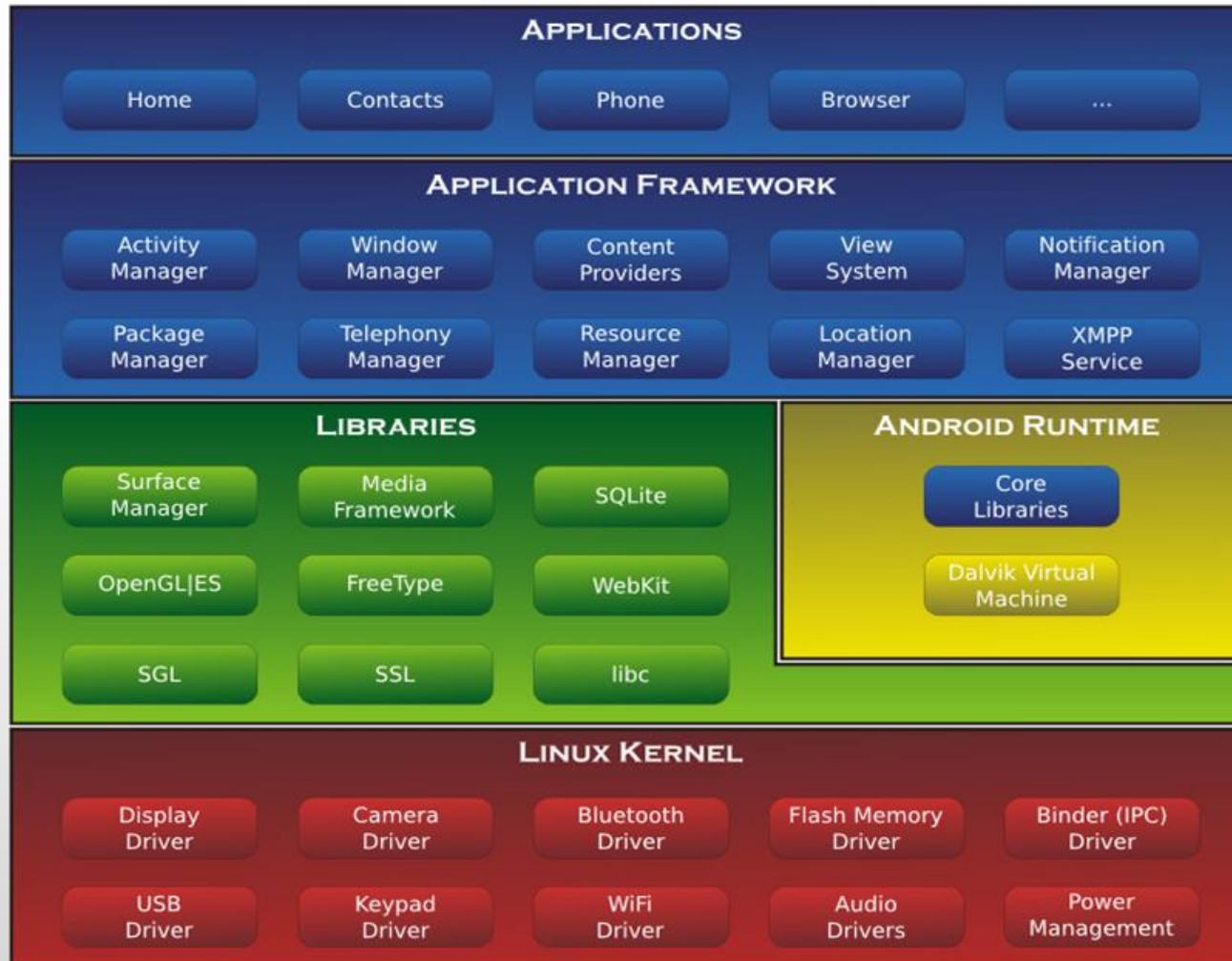
Android

- Android is a mobile operating system developed by Google, based on a modified version of the Linux kernel and other open source software. It is primarily designed for touchscreen mobile devices such as smartphones and tablets.
- Android is the most popular mobile operating system at present.
- Founders of android were Rich Miner, Nick Sears, Chris White, and Andy Rubin.





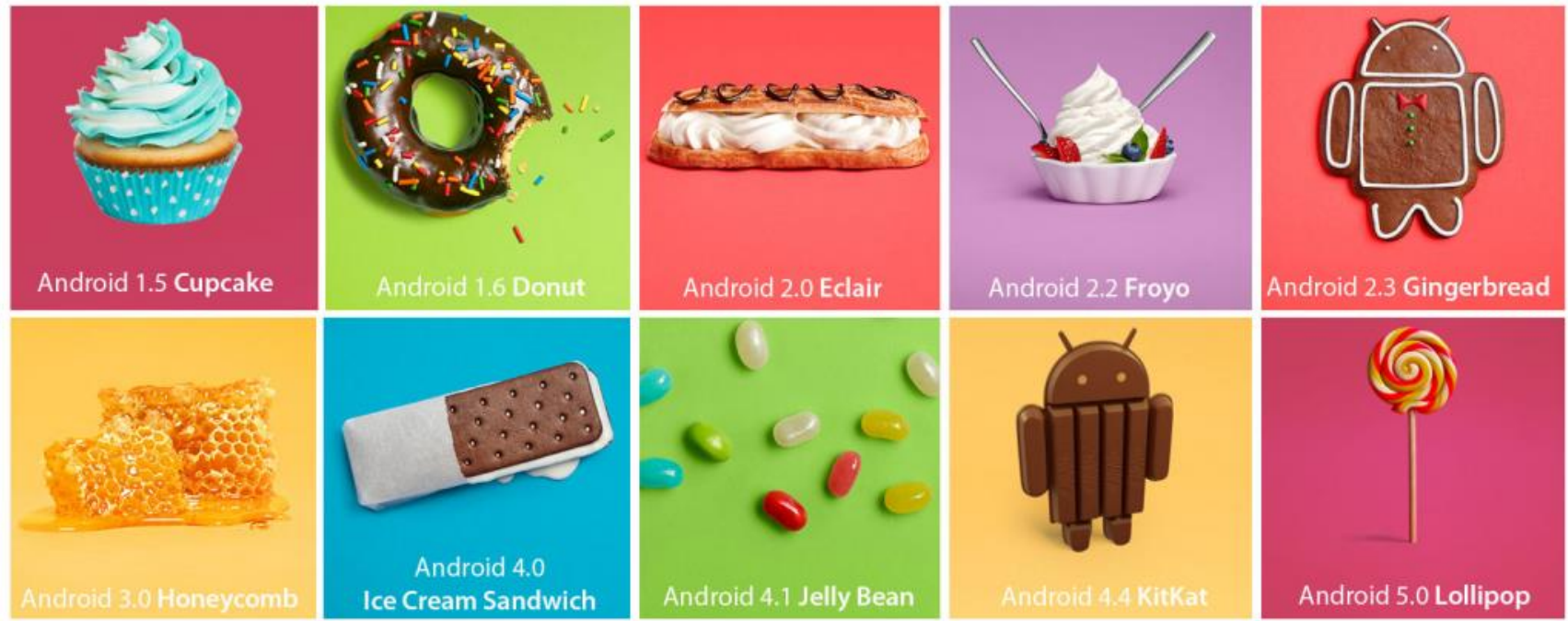
Android Architecture





Android

Versions





Android

Devices using android operating system

Smartphones

- Samsung
- Sony
- HTC
- Google
- LG
- Lenovo
- Oppo
- Huawei





Android

Tablets

- Samsung Galaxy Tab
- Asus ZenPad
- Huawei MediaPad
- Lenovo Yoga Tab
- Amazon Fire HD
- Sony Xperia Z4 Tablet
- Nvidia Shield Tablet K1





Android

TV

- Sony Bravia Smart TV
- Sharp Smart TV
- Philips Smart TV



Smartwatch

- Ticwatch
- LG Watch Style
- Misfit Vapor
- Asus ZenWatch
- Fossil Q Venture





Android

Development Environments

- Android Studio
- Eclipse
- Apache Cordova
- App Inventor for Android
- C++ Builder
- Blue J
- FlashDevelop
- Titanium





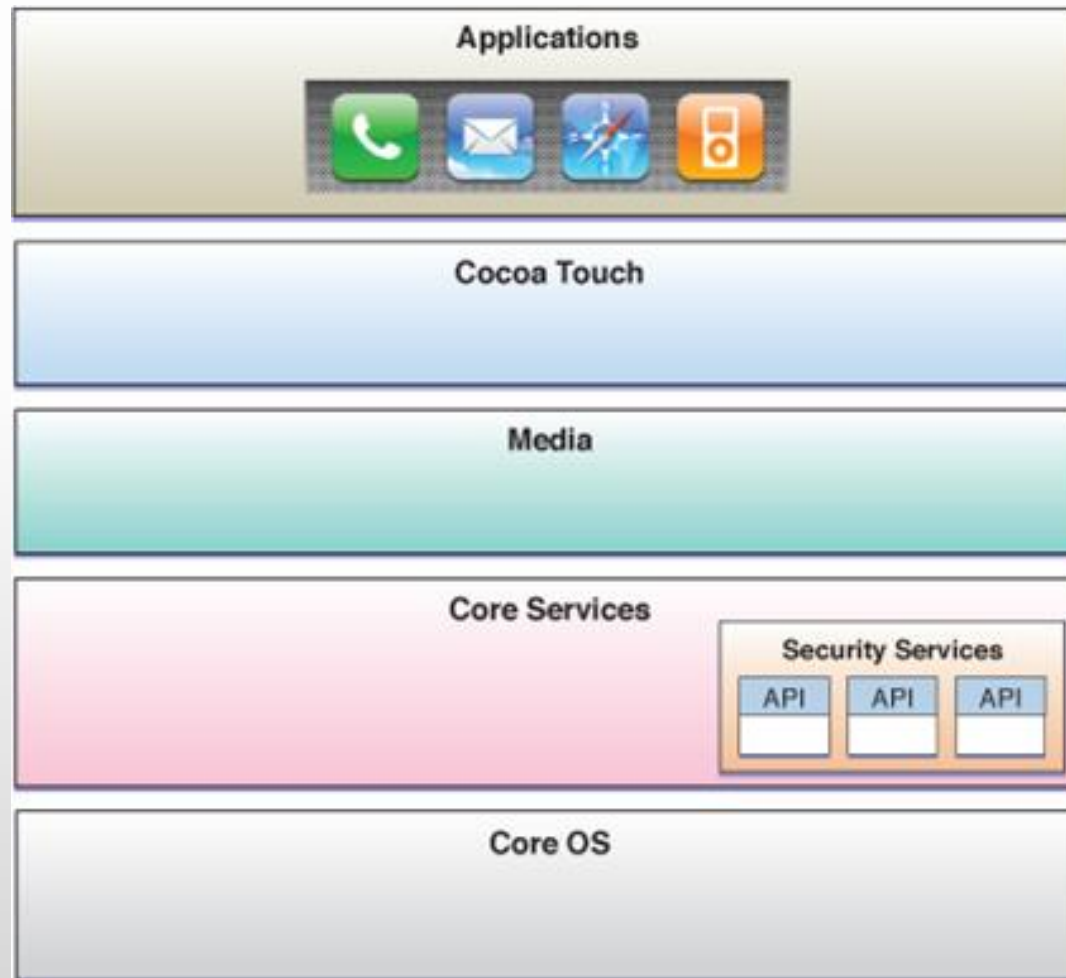
iOS

- iOS is a mobile operating system created and developed by Apple Inc.
- It is exclusively designed for Apple hardware.
- It is the second most popular mobile operating system globally after Android.
- Founders of iOS/Apple were Steve Jobs, Steve Wozniak, and Ronald Wayne





iOS Architecture





Devices using iOS operating system

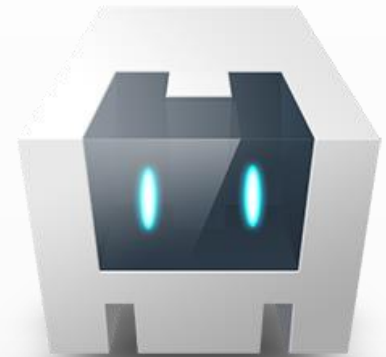
- iPhone
- iPod Touch
- iPad
- iPad Mini
- iPad Pro
- Apple TV
- Apple Watch





Development Environments

- Xcode
- AppCode
- Apache Cordova





Windows Mobile

- Windows Mobile is a discontinued family of mobile operating systems developed by Microsoft.
- Its origin dated back to Windows CE in 1996, though Windows Mobile itself first appeared in 2000 as PocketPC 2000.
- It was renamed "Windows Mobile" in 2003, at which point it came in several versions and was aimed at business and enterprise consumers



Windows Mobile

Devices using windows mobile operating system

- Dopod 515
- Krome Intellect iQ200
- Mitac Mio 8390 and 8860
- Motorola MPx200
- O2 Xphone
- Orange SPV E200 and e100
- QTEK 7070 and 8080
- Sagem myS-7



Windows Mobile

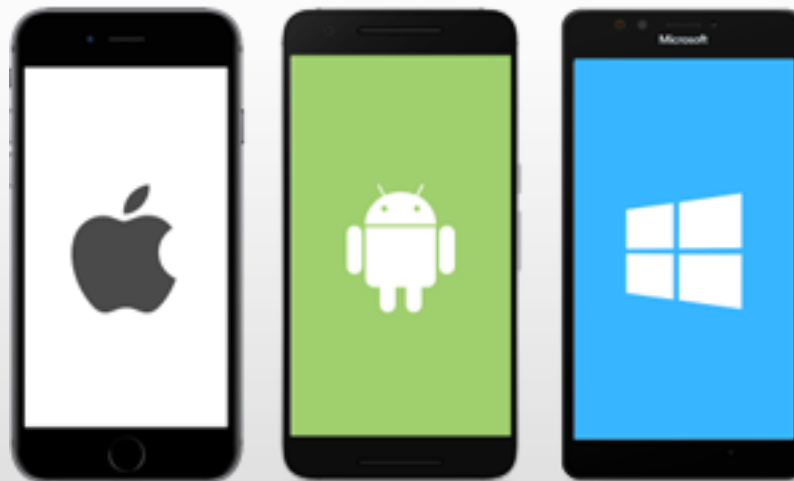
Development Environments

- Visual Studio
- Apache Cordova



Cross-platform mobile development

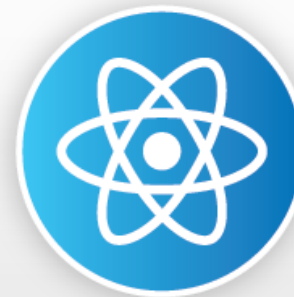
Cross-platform mobile development refers to the development of mobile apps that can be used on multiple mobile platforms.



Cross-platform mobile development

Development Environments

- Apache Cordova
- PhoneGap
- Xamarin
- Ionic
- Framework 7
- React Native
- Jasonette



Cross-platform mobile development

Advantages

- Codes can be reused
- Controls Cost
- Quicker development time
- Easier Implementation
- Sameness and Uniformity

Cross-platform mobile development

Disadvantages

- Loss of Flexibility
- Problems in platform Integration
- Diversity in user Interaction
- Poor user experience
- Difficulty in satisfying all users

Mobile Development

- Mobile development refers to the creation of apps for use on devices such as tablets, smartphones, automobiles and watches.
- Mobile development often incorporates features of mobile devices that may not be available on desktop devices.

An example of this is the ability to operate a device or play a game simply by moving the smartphone around in space.

Fundamentals of Mobile Application Development

Choice of Technology

- In advance to choosing any technology platform, one must ensure it is feasible in every way possible.
- Most appearing platforms are Android, iOS and Windows, and they are evolving rapidly with frequent handy updates. These platforms make it practically possible for developers to build unique features and impressive interface to deliver outstanding user experience.
- Choosing the right platform means your apps will be supported by numerous devices used by customers.

Fundamentals of Mobile Application Development

Clear recognition of requirements

- Define and set your final goals where you want to reach so that you can make a clear strategy and avoid confusion down the path of development.
- Knowing your goals enrich your vision and helps you develop apps that hit the precise pain point.
- Detailed analysis of the product and target audience helps to build an effective app

Fundamentals of Mobile Application Development

Dynamic Functionalities

- Mobile application users like to explore a heterogeneous set of interactive functionalities such as GPS, transactions, messages, responsiveness, sensors, and even audio/video.
- Most application use these interactive functionalities to attract users.

Fundamentals of Mobile Application Development

Security and Speed Efficiency

- Security problems are potential threats to customers who will become the end users of the app. Choose a reliable, secure, authentic resources and industry-standard processes to build the app to ensure its highly secure.
- A mobile app should respond instantly to process customer requests in time. Ensure that the application is effective normal internet environment.

Fundamentals of Mobile Application Development

Testing Quality and Consistency







- Testing the app is a crucial stage for any developer as it confirms whether or not the app is ready to deploy.
- An ideal app testing method must include testing on different devices of varied screen sizes in order to measure its performance and view its compatibility.
- Developer must also necessarily maintain the consistency while coding the app to make sure the entire mobile app development process, along with its documentation and program updates and interface, is genuine, consistent and clear.

Fundamentals of Mobile Application Development

Introduce a Pilot Version

- Once the development team is confident that they have built a well-tested, mature and fully functional app, they can go for launching the pilot product.
- The course of ideal mobile app development must end with the launch of pilot version.
- It helps developers receive the feedback and responses from the users and judge the success of the app.

Successful Mobile Applications

 Pandora Radio Music Updated Jul 10, 2012 FREE	 Facebook Social Networking Updated Sep 20, 2012 FREE	 100 Floors Games Games Updated Aug 22, 2012 FREE	 Instagram Photo & Video Updated Sep 07, 2012 FREE	 Temple Run Games Games Updated Sep 19, 2012 Game Center FREE
 Netflix Entertainment Updated Sep 17, 2012 FREE	 iTunes U Education Updated Sep 19, 2012 FREE	 Angry Birds Games Games Updated Aug 02, 2012 Game Center \$0.99 BUY	 iBooks Books Updated Sep 19, 2012 FREE	 Gmail Productivity Updated Sep 06, 2012 FREE
 5-0 Radio Police Scanner Utilities Updated Apr 17, 2012 FREE	 YouTube Photo & Video Released Sep 11, 2012 FREE	 Fruit Ninja Games Games Updated Jul 06, 2012 Game Center \$0.99 BUY	 Road Warrior Racing Games Updated Sep 09, 2012 Game Center FREE	 Tips for iPhone - Tricks Business Business Updated Jan 27, 2012 FREE
 Find My iPhone Utilities Updated Sep 19, 2012 FREE	 Flashlight Utilities Updated Mar 22, 2012 FREE	 Gun Builder Entertainment Updated Mar 21, 2012 \$0.99 BUY	 Podcasts Entertainment Updated Sep 21, 2012 FREE	 Tap Tap Revenge 4 Games Games Updated Jun 19, 2012 Game Center \$1.99 BUY
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Thank You