SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY

COURSE NAME: 19CS603-Mobile Application Development

III YEAR /VI SEMESTER

Unit 1.1

Introduction to Mobile applications

Mobile apps were originally offered for general productivity and information retrieval, including email, calendar, contacts, the stock market and weather information. However, public demand and the availability of developer tools drove rapid expansion into other categories, such as those handled by desktop application software packages. As with other software, the explosion in number and varietyof apps made discovery a challenge, which in turn led to the creation of a wide range of review, recommendation, and curation sources,including blogs, magazines, and dedicated online app-discovery services.

Mobile applications may be classified by numerous methods. A common scheme is to distinguish native, web-based, and hybrid apps. The three biggest app stores are Google Play for Android, App Store for iOS, and Microsoft Store for Windows 10, Windows 10 Mobile, and Xbox One.

Essence of A Mobile Device:

• (Potentially) available to serve everywhere, any time.
• Interwoven into daily life – live, work, play, study
• Represents and intimately "knows" the user – Much more than just a small computer, it represents the user
• Brings in the outside world – sensing, location, communication
• Now the dominant end-user device

Mobile Application Development Challenges

• Competitive, fluid vendor landscape (Apple, Android consortium incl. Amazon, RIM, HP) means apps need to be multi-platform for wide adoption
• No "standard" device (what about iOS, Windows Phone devices?)
• Low bandwidth input (in most cases – what about tablets?)
• Limited screen size (tablets?)
• Unreliability in connectivity and device (network access, power, ambient light, noise, at least for now)
• Integration tradeoffs with cloud and enterprise services

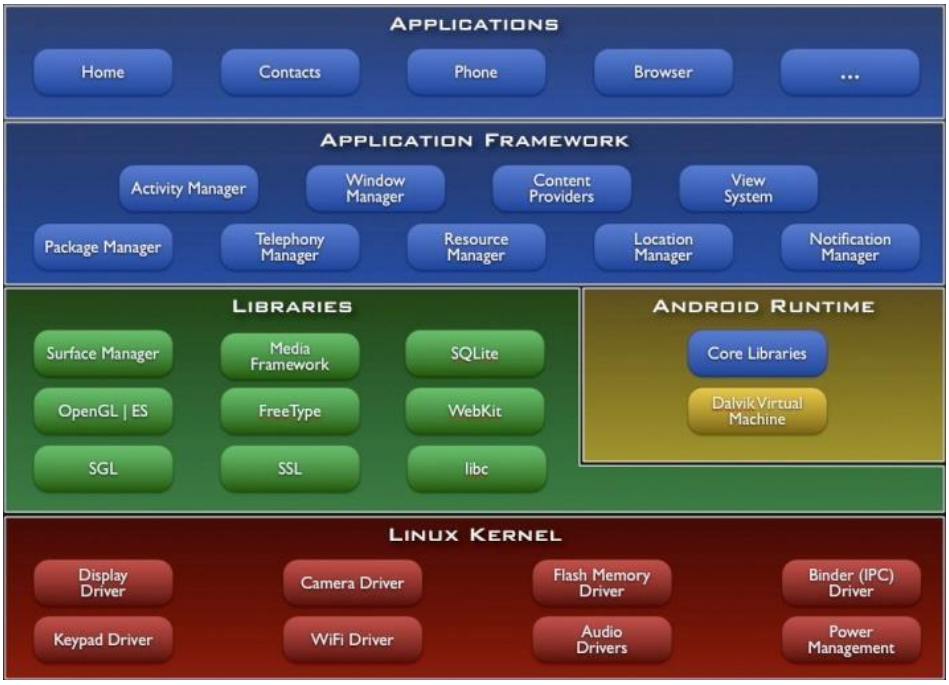
Application Development Support

• 3rd Generation Object-Oriented Languages (iOS – Objective C, Android – Java, Windows Phone – C#)
• Scripting languages (JavaScript, Ruby)
• Cross-platform frameworks – Titanium, RhoMobile, Xamarin, PhoneGap
• C and C++
• Integrated into "frameworks" specifically for mobile application development

Framework Support (e.g. Android)

Blue background: Java

Other colors: C/C++



Framework Capabilities and Add-Ons

• Built-In Services:

– GUI, OS services (file I/O, threads, device management), Graphics, Device access (GPS, camera, music, and video players, sensors), Web-services, Networking, XML processing, standard language libraries

• Add-ons:

– Maps

– Database support (SQLite)

– WebKit

IDE Support

• Open IDEs – Eclipse/Android Studio for Android)

• Proprietary (Xcode for iOS, MS Visual Studio)

• Testing tools (test management, unit tests)

• Performance profiling tools

• SCM integration (Git, SVN, CVS)

• Software emulators

• Sensor injection (GPS, accelerometer, others)