Introduction to module

STW300CEM-Android Application Development

1. **Module Assessment:**

   - 100 % Assignment

2. **Assessment:**
   - Individual
   - Assignment Brief in Moodle as well as in campus.
   - Final project should be upload in GitHub.
   - Video should be uploaded.
     - Activepresenter (windows/mac)
     - FastStone capture (windows/mac)
     - Kazam(Linux)
     - OBS (mac)
     - Quick Time Player or any other recorder

3. **Module Learning Outcomes:**

   On completion of this module the student should be able to:

a. Analyse the Android platform components and their uses
b. Design software suitable for Android platform
c. Develop apps that can interact with web service APIs
d. Develop apps that can communicate with sensors built into the phone hardware

Types of Mobile Application:

1. Web app
2. Native app
3. Hybrid app

Web App:

- Application that needs browser(chrome/safari) to run.
- Building using HTML/CSS/JavaScript.
- Built like a regular website or web app.
- Designed to look good on mobile devices.
- Not necessary to download.

Native App:

- Most common type of mobile app
- Single platform (either Android or iOS)
- Built for specific platforms.
- Built using native programming languages (java/ Kotlin→ android, swift→IOS)
- Distributed in app stores. (Android→Play Store, iOS→AppStore)
- Interact with device utilities.

Hybrid App:

- Combination of native and web apps.
- Use HTML/CSS/JavaScript.
- Ran inside of container/ WebView
- Much cheaper than a native app.
- No browser needed.
- Single app for all platforms.

What is Android?

Android is an open source, Linux-based operating system and programming platform developed by Google for smartphones and other mobile devices (such as tablets). It can run on many different devices from many different manufacturers.

Android includes a software development kit for writing original code and assembling software modules to create apps for Android users. It also provides a marketplace to distribute apps.

All together, Android represents an ecosystem for mobile apps.

History

Android Inc. was founded in Palo Alto, California, in October 2003 by **Andy Rubin**, Rich Miner, Nick Sears, and Chris White. Rubin described the Android project as "tremendous potential in developing smarter mobile devices that are more aware of its owner's location and preferences".

• In 2005, the next big chapter in Android's history was made when the original company was acquired by Google.

• In late 2014, Rubin left Google altogether and launched a startup business incubator.

• Earlier in 2017, Rubin officially revealed his return to the smartphone industry with his company's announcement of the Android-based Essential Phone.

Android Versions:

Google is constantly working on new versions of the Android software. These releases are infrequent, about once a year.

Versions usually come with a numerical code and a name that's so far been themed after sweets and desserts, running in alphabetical order.

- Android 1.5 Cupcake
- Android 1.6 Donut
- Android 2.1 Eclair
- Android 2.2 Froyo
- Android 2.3 Gingerbread

- Android 3.2 Honeycomb - The first OS design specifically for a tablets, launching on the Motorola Xoom
- Android 4.0 Ice Cream Sandwich: The first OS to run on smartphones and tablets, ending the 2.X naming convention.
- Android 4.1 Jelly Bean: Launched on the Google Nexus 7 tablet by Asus
- Android 4.2 Jelly Bean: Arrived on the LG Nexus 4
- Android 4.3 Jelly Bean
- Android 4.4 KitKat: Launched on the LG Nexus 5
- Android 5.0 Lollipop: Launched on the Motorola Nexus 6 and HTC Nexus 9
- Android 6.0 Marshmallow for the Nexus 5, Nexus 6, Nexus 9 and Nexus Player
- Android 7.0 Nougat for the Nexus phones.
- Android 8.0 Oreo for the Nexus & Pixel phones.
- Android 9.0 Pie 2018 for Google Pixel devices and the Essential Phone.
- Android 10.0 the end of the cakes and ice creams.
- Android 11
- Android 12

First android Phone

• First android phone was launched by HTC on 22nd October 2008.

• **HTC Dream** which is also known as the T-Mobile G1 in the United States of America and some parts of Europe is the first commercially launched device to be powered by Android operating system.

Frameworks for Mobile App Development

Some of the top frameworks which is used for mobile application developments are:

1. **React Native:**
- Cross platform app.
- developed by Facebook.
- Facebook → IDE (WebStorm, Visual studio code, Atom)

2. **Flutter:**
- Create mobile app for IOS and Android.
- Developed by Google.
- Google → IDE (IntelliJ, android studio, visual studio code)

3. **Xamarin:**
- Is build using .NET and C#.
- App for IOS, Android.
- Microsoft → IDE (Visual Studio)

4. **Ionic:**
- Open source
- Use to build hybrid, desktop and progressive web application.

5. **Phone Gap:**
- Open source
- Use HTML, CSS and JavaScript.

Likewise, there are many others popular framework like Corona, jQuery mobile, Native Script, Appcelerator Titanium, Mobile Angular UI etc.

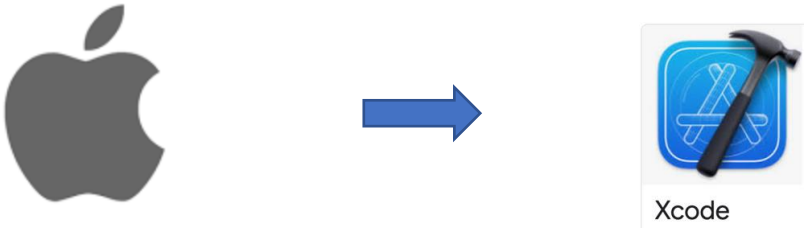
Approach for developing mobile app development

1. **Native Approach –** relies on tools and programming languages designed for specifically for single platform.

2. **Hybrid/ Cross-platform –** aims at creating a single application that runs identically on several platforms. Build Once Use Anywhere.

For Native App development:

IOS:
Language: Swift and Objective -C .



Android:
Language: Java/Kotlin

For Cross-platform app development

1. Xamarin
2. Flutter
3. React native
4. Ionic
5. Adobe PhoneGap
6. Sencha