Android Development

About the Courses:

In the last 10 years, Android has made a name for itself, not only with its candy-themed platform updates, but also with its widespread, and unexpected, success. In its lifetime, the open-source mobile operating system has grown to include 1.4 billion active users and 80% of smartphones today run Android software. Over 1 billion Android phones were sold in 2014 alone.

Mobile developers in the programming community are the minority – just over 9% of total developers in the world say they're focusing on mobile devices, according to Stack Overflow's 2015 developer survey. Of these mobile developers, however, Android developers make up the larger group, with 44.6% self-identifying as Android developers, compared to 33.4% who say they are building for iOS. Even so, many companies struggle to find enough developers to complete their Android projects. This trend is likely to continue as the overall number of smartphone users – and Android users, specifically – continues to grow.

A QUICK HISTORY LESSON

Back in 2005, two years prior to the release of the iPhone, Google quietly purchased Android Inc., a cash-strapped startup developing an open-source mobile platform based on the Linux operating system. In 2007, Google released this software to the world.

The beauty of open source, Java, and the SDK.

As the first Android phones were announced, Google made Android open source, meaning developers could access, understand, and even modify the underlying phone software. Unlike Apple, Google chose to allow developers to freely develop and distribute apps to users without a complicated review process. Finally, Android applications would be built with Java, a well-supported and stable language with a wide base of existing developers. An Android Software Developer Kit (SDK) was assembled, giving app builders libraries of Java code they could include in their projects to make it easy to access device functionality. Java's history as a mobile device application platform significantly pre-dated Android and the idea of developing Java apps for mobile phones made a lot of sense. After all, the beauty of Java is that is is well-suited to an environment where many different devices need to be supported, due to its ability to compile applications "just-in-time."

Maker-friendly.

More than a million apps have been published to Google Play to date. Initially, Google Developers had to submit their applications to the Google Play store, and many apps are still primarily sold through this official Google app marketplace. However, because Android is open source, many other companies have since been successful in creating their own app stores – for example, Amazon has built a separate app store for users of their Kindle devices, which run a version of Android. This fragmentation of the app marketplace gives more control to developers and stands in contrast to the closed, highly-curated Apple

ecosystem. Even today, the application review process for Google Play is primarily intended to weed out explicit or offensive content, and it doesn't significantly affect the time it takes to publish an app.

Because Android software is open source, manufacturers are able to fork the software and add their own functionality. However, because Google invests so much into the Android ecosystem, most manufacturers have kept their branches of the software close to Google's, allowing their users to access key new features that are rolled out by Google on a regular basis.

One downside of this fragmentation is that it often falls on manufacturers to individually coordinate updates for their devices, resulting in delays for older-model phones. However, this reliance of handset manufacturers on Google means that Google is held to its commitment to maintain an open and fair ecosystem, even as Android has gathered wild success.

A BRIGHT FUTURE FOR ANDROID APP DEVELOPERS

The path ahead is unquestionably promising for Android app developers, given the incredible growth the platform has experienced over the last few years, including recent moves into new and exciting types of devices. There will be strong growth in demand for apps built for emerging markets, where significant growth in Android-based Smartphone ownership will continue to provide business opportunities for app developers. In developed countries, Android developers will be in demand as manufacturers of smart home devices, in-car navigation systems, and wearable technology use new versions of the Android OS.

Developing Markets: Growing economies, increasing opportunities.

In emerging markets, Android is set to be on the forefront of a massive wave of global expansion of smartphone users. As of 2015, smartphone usage is growing overall at a rate of approximately 13% year-over-year. Last year the Pew Research Center reported that, out of 24 emerging economies they surveyed, none yet has a 50% smartphone adoption rate and a majority of people in most of the countries surveyed are still offline. The survey included such populous countries as China, Turkey, Kenya, and Nigeria – leading to the conclusion that there's a huge market yet to be addressed by smartphone distributors. On top of this, smartphone ownership in these nations is currently skewed to younger generations, meaning that growth is likely to skyrocket as the population ages and new consumers are pulled into the market.

Many Android-based companies are capitalizing on the projected growth in emerging markets – Ex-Apple CEO John Scully is building a company that is making Android smartphones to market to developing markets, the original versions of which have double the battery life of the iPhone 6. The cheapest version is $129 and aims to be an affordable but high-quality device for the mass market. Manufacturers like the Africa-based Mi-Fone are trying to hit an even lower price point, building Android phones in Africa, for Africa. Google is actively working with manufacturers to make its dream of $30 smartphones a reality through its Android One program. Wireless providers are also collaborating with Google on what it calls the "Google Free Zone," an implementation of the concept of "zero-rating" where telecoms agree to erase the bandwidth costs for certain low-bandwidth applications, in order to get more lower-income users online.

Skilled developers with a deep understanding of the unique needs of emerging markets are going to not only bring copies and clones of existing apps into new markets, but will inevitably come up with revolutionary new products and apps that emerge directly out of the diverse needs, cultures, and linguistic environment of each of these countries.

Developed countries: Beyond the phone.

Android is best known as a smartphone platform, but its reach goes way beyond just mobile devices. This year, Google announced a "trimmed down" version of Android, called Project Brillo, which aims to be a development platform for "internet of things" devices. Over 3 dozen car manufacturers have signed on to integrate the Android Auto platform into their vehicles. Android Wear software has already been used to power many different smartwatches and wearable devices. As the market for smart devices, smart cars, and even smart clothing continues to grow, demand for developers who can build software for machines, appliances, and sensors will also grow.

Today, most of us have grown accustomed to being able to access our data anywhere, regardless of which device we pick up. Thanks to services like Dropbox and Google Drive, our files are available any time, any place. Google and its competitors are building towards an even more integrated future where our entire experience is seamless – whether at home, in the car, on a phone, or on our wrist. And, while many other companies seek to bring customers into a more all-encompassing ecosystem of products, the open-source nature of the Android project promises to make this dream portable across devices from many different manufacturers, often at a lower price point.

Fun Fact: During the launch of Android Kit-Kat (version 4.4), Google struck a deal that included some sizable advertising promotions in tandem with the Android launch. One of the lesser-known parts of the deal was Nestlé's manufacturing of 500 specially-created Android-shaped Kit-Kat bars produced in a secret location in Europe.

Career Prospects:-

As far as android is concern, it has a very awesome future ahead. Everything is going to mobile these days, from shopping your clothes, booking movie ticket, booking railway ticket to order vegetables to doorstep and there are lots of thing need to move to mobile now.

Most of android developer work for companies in India, some of them are working as freelancers and very few are working on their own idea. If you have a great idea that can change the way of anything(Like whatsapp took the text chat on another level, it is so easy to use that everybody wants it first on their smartphone).

In India so many companies are hiring android developer (almost 6 of 10) and startups are offering a really handsome packages to a smart developer.

Course Content

Course Content - Android Programming

Unit 1 – Introduction to Java and Android

- Android Stack Introduction.
- Installing Android and creating first app on emulator
- Android Architecture and building blocks
- Android App build process.
- Java overview– Data types, Loops, Conditionals and Operators
- Android UI– resources, themes, threads etc
- Debugging in android
- Assignments on Java Classes, Objects, Methods, Instances etc
- Activities, Receivers, Adapters and Providers
- Telephony System Architecture of Android

Unit 2 – Systems Programming and JNI Concepts

- Introduction to System programming in Android
- Java interface
- Native library implementation
- Building the sample native library
- Using native functions in Java code
- Security and Permissions.

Unit 3 - Android Graphics and Multimedia

- Basic Graphics - Input Handling, Audio / Video playback
- Assignments on playing audio and playing video
- Accessing Files system, SD Cards
- SQLite overview, Data Binding, Content Provider
- Assignments and exposure to Lab infrastructure
- UI design aspects of Apps
- Gestures/touch/click handling
- Instantiate UI elements at runtime
- Views and Interacting with views

Unit 4 – 3D graphics in OpenGL and Android Widget

- OpenGL Introduction

- Using Threads and Models
- Texture in OpenGL
- Making a application in OpenGL
- Other standard views in Android
- Android Widget Development

Unit 5 – Android Networking

- Accessing the Internet
- Using Web services
- Using Java and Java Script
- Location Sensing
- Client Server Programming
- Working with XML/JSON
- SMS

Unit 6 – Complete App Development

- Developing live App and modules
- Exposure to development on Phones/Tablets/Set top box.
- Developing custom launchers and skins.
- Full software lifecycle exposure from requirement to market launch.
- Applications utilizing location and maps

Salary Offered

The average salary for an Android Software Developer is Rs 302,100 per year. Experience strongly influences pay for this job. Most people with this job move on to other positions after 10 years in this field.