

Workshop Android App Development

Workshop on “Android App development”

A Workshop on “Android development” was conducted at MVJCE, Bangalore from 14th of March, 2015 to 21st of March, 2015 by the department of Information Science & Engineering.

The guest lecturer for the session was Mr. Senthil Kumar. He is a Research Engineer at Qualcomm Inc. He has done lot of work on Wireless and Network protocol development and middle-ware development. He is doing lots of website designing, developing mobile application, contributing to the open source. He believes in the women have capability to work on advanced research field. He is mentoring more than 200 girls from his native place Madurai for Technovation Challenge 2015.

Mr.Senthil Kumar arrived college at 10:00 am and was welcomed by the Google club team members. Mr.Shiva Kumar, Advisor addressed the students about Technology advancement and in learning new technology. Ms.Pushpa Latha, ISE HOD, also addressed the students. She talked about Android Operating system importance, later Mr.Senthil Kumar was introduced to the assembled students.

The total students and faculty strength was from various departments of MVJCE, it was approximately 150 in number. Mr.Senthil Kumar commenced with a brief introduction to the changing scenarios of the IT Industry in and around the country and then proceeded to development session. Mr.Senthil Kumar gave them a hands on session on how to develop HTML5 Apps using android. He also taught the students how to identify problem statement and provide solution for given problem using Apps. He gave lot of examples on identifying solutions to various problems. By the end of the session, basic android app were developed under the guidance of Mr.Senthil Kumar with the active help and support of the Google club Team members.

This session was concluded at 4.00 pm by presenting Mr.Senthil Kumar with a memento by Anantha Lakshmi, Faculty coordinator for Google club. Mr.Senthil Kumar was very happy with the level of interest shown by the students and promised to come and interact with our students whenever they needed.

After completing the Android Development training the students understood:

- Basic Android Development tools such as Android Studio, DDMS, Drawables, Listeners, and so on.
- To apply various Layouts and Widgets in Android Applications.
- To create interactive applications in android with multiple activities including audio, video and notifications.
- To create applications using SQLite database.
- How to publish your App on Google Play.

The workshop comprised of the following themes:

Day I:

Introduction to Android: What is Android?

- History Behind Android Development
- Setting up development environment
- Android Architecture

- Dalvik Virtual Machine
- UI Components - Views & notifications
- Components for communication
- Intents & Intent Filters
- Android API levels
- Hello Android example

Application Structure and UI Widgets

- AndroidManifest.xml
- uses-permission & uses-sdk
- Resources & R.java
- Assets
- Layouts & Drawable Resources
- Activities and Activity lifecycle
- First sample Application
- Working with Button
- Toast
- Custom Toast
- Button, Toggle Button
- Switch Button, Image Button
- Date Picker , Time Picker

Day II:

Activity & Intent

- Activity Lifecycle
- Activity Example
- Types of Intent
- Implicit Intent
- Explicit Intent
- Checkbox
- Alert Dialog
- Complex UI components

Layout Design

- Absolute layout
- Relative Layout
- Linear Layout
- Table Layout
- Grid Layout
- Frame Layout

Hand-on session

- Change one activity to another activity
- Calling and Dialing Application
- Camera Application
- Web and Url Application

DAY III:

Notification Manager

- Working in the Background
- Creating and Controlling Services
- Binding Activities to Services
- Creating New Threads
- Synchronizing Threads for GUI Operations
- Using Toasts in Worker Threads
- Introducing the Notification Manager
- Creating Notifications

Broadcast Receiver & Content provider

- Understanding Broadcast action, category and data
- Registering Broadcast receiver through code and through XML
- Sending Broadcast
- Accessing built in content providers
- Content provider MIME types
- Searching for content
- Adding, changing, and removing content
- Creating content provider
- Working with content files

DAY IV:

Animation

- Introduction of Android Animation
- Types of animation
- Property animation
- Scale animation
- Alpha animation
- Rotate animation
- Translate animation
- Frame by Frame Animation

Examples

- Hand on all type of animation
- Example of Scale animation
- Example of Alpha animation

- Example of Rotate animation
- Example of Translate animation
- Example of Frame by Frame Animation

DAY V:

Google Maps

- Introducing Map View and Map Activity
- Configuring and Using Map Views
- Using the Map Controller
- Customizing Map
- Google Map class
- Android Google Map Application
- Proximity alerts
- Working with Google Maps
- Showing Google map in an Activity
- Map Overlays

Examples

➤ **DAY VI:**

Multimedia in Android

- Multimedia Supported audio formats
- Simple media playback
- Data Storage
- Using Shared Preferences
- Android File System
- Internal storage
- Using SQLite
- Introducing SQLite
- SQLite Open Helper and creating a database
- **Examples**
 - Application One Audio Player
 - Application on Storing Data Using Shared Preferences

➤ **DAY VII:**

Bluetooth device

- Controlling local Bluetooth device
- Discovering and bonding with Bluetooth devices
- Managing Bluetooth connections
- Communicating with Bluetooth

Android P2P Communication

- Introducing Instant Messaging
- Sending and Receiving Data Message

- Transmitting Data Messages
- Receiving Data Messages

Example

- Application On sending SMS
- Application On Bluetooth On Off



Students gathered for Android App Development



Mr. Senthil Kumar Guest Addressing the Students

By end of this workshop the students were be able to develop applications using Android. Since Android is the recent technology and since it is not included in curriculum, the workshop could fill the gap and attained the PO's **Engineering Knowledge, Problem Analysis, Design/Development of solutions, Modern Tool Usage, Life Long Learning**. This Workshop on Android Apps Development has provided an ability to understand analyze and develop computer programs in the areas related to algorithms, multimedia, web design and networking for computer based systems of varying complexity.

The practical sessions have helped the students to find solutions for real world problems with a broad range of programming languages and open source.


PRINCIPAL SIGNATURE WITH SEAL
Dr. K. S. Shree
Principal
MVJ College of Engineering
Near ITP, Channarayana
Bangalore-560 067