MCA-46 Android Programming Lab.

General Course Information

Course Code: MCA-46 Course Credits: 2 Type: Professional Core Lab. Course Contact Hours: 2 hours/week Mode: Lab practice and assignments	**Course Assessment Methods (internal: 30; external:70)** The internal and external assessment is based on the level of participation in lab. sessions and the timely submission of lab experiments/assignments, the quality of solutions designed for the assignments, the performance in VIVA-VOCE, the quality of lab. file and ethical practices followed. The internal examination is conducted by the course coordinator. The external examination is conducted by external examiner (appointed by the Controller of Examination) in association with the internal examiner appointed by the Chairperson of the Department.

Pre-requisites: Java Programming and Object-oriented programming, knowledge of XML, JSON and database concepts.

About the Course:

This lab. course on Android Programming helps students to learn how to develop android apps.

Course Outcomes: By the end of the course students will be able to:

CO1. **Analyse** the Development Environment and the working of Emulator for android application.
CO2. **Design** different activities and layouts of application.
CO3. **Identify** and embed JSON and XML file in application design.
CO4. **Develop** application based on SQLite and latest connection providers.
CO5. **Create** lab record for assignments that includes problem definitions, design of solutions and conclusions.
CO6. **Demonstrate** use of ethical practices, self-learning and team spirit.

List of experiments/assignments:

1. Setting up development environment, Dalvik Virtual Machine & .apk file extension, Fundamentals: a. Basic Building blocks - Activities, Services, Broadcast Receivers & Content providers b. UI Components – Views& notifications c. Components for communication -Intents & Intent Filters, AndroidAPI levels (versions & version names).
2. Emulator-Android Virtual Device, Launching emulator, Editing emulator settings, Emulator shortcuts, Logcat usage, Introduction to DDMS, Second App:- (switching between activities) Develop an app for demonstrating the communication between Intents.
3. Design a Basic of UI structure, Form widgets, Text Fields, Layouts, [dip, dp, sip, sp] versus px, Menu, Option menu, Context menu, Sub menu, menu from xml, menu via code.
4. Implementation of Intents (in detail), Explicit Intents, Implicit intents with Examples
5. Styles & Themes, styles.xml, drawable resources for shapes, gradients (selectors), style attribute in layout file, Applying themes via code and manifest file.
6. SQLite Programming, SQLite Open Helper, SQLite Database, Cursor, Reading and updating Contacts, Reading bookmarks.
7. Notifications, Broadcast Receivers, Services and notifications, Toast, Alarms.

Note:

The actual experiments/assignments will be designed by the course coordinator. One assignment should be designed to be done in groups of two or three students. The assignments must meet the objective of the course and the levels of the given course outcomes. The list of assignments and schedule of submission will be prepared by the course coordinator at the beginning of the semester.