DSE-02 (c): Android Programming

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Android Programming	4	2	0	2	Class XII	DSC-05

***Learning objectives*:**

1. *Creating robust mobile applications and learn how to integrate them with other services.*

Learning Outcomes:

1. *Describe characteristics of Android operating system.*
2. *Describe components of an android applications.*
3. *Design user interfaces using various widgets, dialog boxes, menus.*
4. *Define interaction among various activities/applications using intents, broadcasting, and service.*
5. *Develop Android applications that require database handling.*

UNIT-I **(10 hours)**

Introduction: Review to JAVA & OOPS Concepts, History of Android, Introduction to Android Operating Systems, Android Development Tools, and Android Architecture, Android components including activities, view and view group, services, content providers, broadcast receivers, intents, parcels, instance state.

UNIT-II **(12 hours)**

User Interface Architecture: Application context, intents: explicit intents, returning results from activities, implicit intents, intent filter and intent resolution, and applications of implicit intents, activity life cycle, activity stack, application's priority and its process' states, fragments and its life cycle.

UNIT-III **(12 hours)**

User Interface Design: Layouts, optimizing layout hierarchies, form widgets, text fields, button control, toggle buttons, spinners, images, menu, dialog.

UNIT-IV **(11 hours)**

Broadcast receivers and Database: Broadcast sender, receiver, broadcasting events with intents, notifications and services.

SQLite, Content Values and Cursors, creating SQLite databases, querying a database.

References

1. *Griffiths, D., & Griffiths, D., (2015). Head First Android Development, O'reilly Media.*
2. *Meier, R., (2012). Professional Android™ 4 Application Development. John Wiley & Sons, Inc.*

List of Practicals: **(60 hours)**

1. Create "Hello World" application. That will display "Hello World" in the middle of the screen in the emulator. Also display "Hello World" in the middle of the screen in the Android Phone.
2. Create an application with three buttons (increment, decrement and reset) and a textView aligned vertically. On clicking, increment/decrement button, the value of the textview should increment/decrement by 1while selecting reset button, the value of textview should become zero.
3. Create an application with login module. (Check username and password).
4. Create spinner with strings taken from resource folder (res >> value folder) and on changing the spinner value, Image will change.
5. Create a menu with 5 options and selected option should appear in text box.
6. Create a list of all courses in your college and on selecting a particular course teacher-incharge of that course should appear at the bottom of the screen.
7. Create an application with three option buttons, on selecting a button colour of the screen will change.
8. Create an application to display various activity life cycle and fragment life cycle methods.
9. Create an application with 2 fragments, one to set the background and other to set the fore-color of the text.
10. Create an application with an activity having EditText and a button (with name "Send"). On clicking Send button, make use of implicit intent that uses a Send Action and let user select app from app chooser and navigate to that application.
11. Create a Login application. On successful login, use explicit intent to second activity displaying welcome message (Welcome Username) to the user and a logout button. When user presses logout button, a dialog box with a message ("Are you sure you want to exit?") and two buttons ("Yes" and "No") should appear to confirm logout. On "Yes" button click, go to login activity and on "No", stay on the same activity.
12. Create an application for Broadcast sender and receivers.
13. Create an application to create notification having icon, text and title.
14. Create an application to create services.
15. Create an application to Create, Insert, update, Delete and retrieve operation on database