

ANDROID PROGRAMMING - Skill Enhancement Courses (Credit: 02 each) – SEC1

Total Marks: 100 (Practical: 50, Internal Assessment: 25) 2 Lectures , 4 Practicals

Introduction: History of Android, Introduction to Android Operating Systems, Android Development Tools, Android Architecture. (2L)

Overview of object oriented programming using Java: OOPs Concepts: Inheritance, Polymorphism, Interfaces, Abstract class, Threads, Overloading and Overriding, Java Virtual Machine. (3L)

Development Tools: Installing and using Eclipse with ADT plug-in, Installing Virtual machine for Android sandwich/Jelly bean (Emulator), configuring the installed tools, creating a android project – Hello Word, run on emulator, Deploy it on USB-connected Android device. (4L)

User Interface Architecture: Application context, intents, Activity life cycle, multiple screen sizes. (2L)

User Interface Design: Form widgets, Text Fields, Layouts, Button control, toggle buttons, Spinners(Combo boxes),Images, Menu, Dialog. (2L)

Database: Understanding of SQLite database, connecting with the database. (2L)

Book Recommended: 1. Android application development for java programmers. By James C. Sheusi. Publisher: Cengage Learning, 2013.

ONLINE READING / SUPPORTING MATERIAL:

- ✓ 1. <http://www.developer.android.com>
- ✓ 2. <http://developer.android.com/about/versions/index.html>
- ✓ 3. <http://developer.android.com/training/basics/firstapp/index.html>
4. <http://docs.oracle.com/javase/tutorial/index.htm> (Available in the form of free downloadable ebooks also).
- ✓ 5. <http://developer.android.com/guide/components/activities.html>
- ✓ 6. <http://developer.android.com/guide/components/fundamentals.html>
7. <http://developer.android.com/guide/components/intents-filters.html>
8. <http://developer.android.com/training/multiscreen/screensizes.html>
9. <http://developer.android.com/guide/topics/ui/controls.html>
10. <http://developer.android.com/guide/topics/ui/declaring-layout.html>
11. <http://developer.android.com/training/basics/data-storage/databases.html>

Proposed Guidelines for B.sc(H) Computer Sc. SEC-1(Android programming)

Chapter	Topic Covered	Contents	Ref#	#Lectures
✓ 1	Introduction	Introduction	[2]	1
2	Overview of object oriented programming using java	ch-8(Inheritance: complete),ch-9(Packages & Interfaces: only interfaces)	[3]	2
✓ 3	Development tools	ch-1	[1]	1
4	User Interface Architecture		[4,5,6]	5
5	User Interface Design	ch-3(Except creating and configuring emulator, Communicating with emulator) Ch-4(Except Date picker), ch-7	[2]	10
6	Database	Introduction	[7]	5

Ref#	Referenced Book
1	Head first android development- Dawn Griffiths and David Griffiths (Publisher:O'Reilly)
2	Android application development for java programmers by James C. Sheusi (Publisher :Cengage Learning ,2013)
3	Java: The Complete Reference-Herbert Schildt,5th Edition
4	https://developer.android.com/guide/components/intents-filters.html
5	https://developer.android.com/guide/components/activities.html
6	https://developer.android.com/training/multiscreen/screensizes.html
7	https://developer.android.com/training/basics/data-storage/databases.html

Proposed List of Practical for B.sc(H) Computer Sc. SEC-1(Android programming)

Sr. No	Practical
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 to display various android activity lifecycle phases.
3	Create an application with first activity with an editText and send button. On click of send button, make use of explicit intent to send text to second activity and display there in text view.
4	Create an application with first activity with an editText and send button. On click of 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.
5	Create spinner with strings taken from resource folder (res >> value folder) and on changing the spinner value, Image will change.
6	Create a menu with 5 options and selected option should appear in text box in upper case.
7	Create a radio button group with radio button of all courses in your college and on selecting a particular course, teacher-in- charge of that course should appear at the bottom of the screen.
8	Create a list of all courses in your college and on selecting a particular course parent department and the teacher-in-charge of that department should appear at the bottom of the screen.
9	<ul style="list-style-type: none"> a) Create an application with three buttons (with different color names) vertically aligned, on selecting a button color of the screen will change. b) Create an application with three buttons horizontally aligned, on selecting a button color of the screen will change.
10	Create a Login application (check username and password). On successful login, pop up the message. ("Welcome username")
11	Create a login application as above, on successful login redirect to another activity with logout button. On click of logout button a dialog appears with OK and CANCEL button. On OK button click go to login activity and on CANCEL stay at same activity
12	Create an application to Create, Insert, update and Delete operation on the database.