13	Network Administration (contd.): Troubleshoot network connectivity issues using commands like: ipconfig, ping, tracert, route etc.
14-15	Network Administration (contd.): Sharing resources (files, printers etc.) on the network, Accessing a system remotely using remote desktop.

Assessment Methods

- Unit-wise assignments, presentations, viva, quiz as announced by the instructor in the class.
- Internal assessment
- End semester exam

Keywords
Desktop Operating system, Server Operating system, Shell, Network Administration.

Android Programming
(BACS10B)
Skill-Enhancement Elective Course - (SEC-4B) Credit:4

Course Objective

The course is designed for students to help them learn how to develop android apps. They will also learn android architecture and key principles underlying the design.

Course Learning Outcomes

On successful completion of this course, a student will be able to:

1. describe various components of an Android application.
2. design user interfaces using various widgets, dialog boxes, menus.
3. design and implement interaction among various activities/applications using intents.
4. develop application(s) that require database handling.

Unit 1

Introduction: Overview of Java programming, Android architecture, Android components including activities, view and view group, services, content providers, broadcast receivers, intents, parcels, instance state. Android development tools like Android virtual device manager, Android SDK manager, Android emulator, Android profiler, Android debug bridge.

Unit 2

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

Unit 3

User Interface Design: Layouts, optimizing layout hierarchies, form widgets, text fields, button control, toggle buttons, spinners, auto-complete textview, edittext, images, image buttons, menu, dialog.

Unit 4

Database using SQLite: SQLite, Content Values and Cursors, creating SQLite databases, querying a database, adding, updating, and removing rows.

Practical

Practicals Based on Android Programming:
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 login module. (Check username and password).

3. Create spinner with strings taken from resource folder (res >> value folder) and on changing the spinner value, Image will change.

4. Create a menu with 5 options and and selected option should appear in text box.

5. 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.

6. Create an application with three option buttons, on selecting a button colour of the screen will change.

7. Create and Login application as above. On successful login, pop up the message.

8. Create an application to Create, Insert, update, Delete and retrieve operation on the database.

References

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

Additional Resources

1. Murphy, M. L. (2018). *The Busy Coder's Guide to Android Development*. CommonsWare.
2. Phillips, B., Stewart, C., Hardy, B., & Marsicano, K. (2015). *Android Programming: The Big Nerd Ranch Guide*. Big Nerd Ranch, LLC.
3. Sheusi, J. C. (2013). *Android Application Development for Java Programmers*. Cengage Learning.

Teaching Learning Process

- Talk and chalk method
- Computer based presentations by teachers to explain certain topics.
- Group Discussions

- Assignments
- Offline and online Quiz
- Presentations by group of students for enhanced learning.

Tentative weekly teaching plan is as follows:

Week	Topics
1	Introduction: Overview of Java programming, Android architecture.
2	Introduction (contd.): Android components including activities, view and view group, services, content providers.
3	Introduction (contd.): Broadcast receivers, intents, parcels, instance state. Android development tools like Android virtual device manager,
4	Introduction (contd.): Android development tools like Android SDK manager, Android emulator, Android profiler, Android debug bridge.
5	User Interface Architecture: Application context, intents: explicit intents, returning results from activities, returning results from activities.
6	User Interface Architecture (contd.): Intents: implicit intents, intent filter, intent resolution, and applications of implicit intents.
7	User Interface Architecture (contd.): Activity lifecycle, activity stack, application's priority and the process' states.
8	Database using SQLite: SQLite, content values and cursors.
9	Database using SQLite (contd.): Creating SQLite databases, introduction to querying a database.
10	Database using SQLite (contd.): Querying a database: adding, updating, and removing rows.
11	User Interface Design: Layouts, optimizing layout hierarchies.
12	User Interface Design (contd.): form widgets, text fields, button control.
13-14	User Interface Design (contd.): Toggle buttons, spinners, auto-complete textview, edittext.
15	User Interface Design (contd.): Images, image buttons, menu, dialog.

Assessment Methods

- Unit-wise assignments, presentations, viva, quiz as announced by the instructor in the class.
- Internal assessment
- End semester exam

Keywords

Android architecture, Android emulator, User interface design, Database.