Kadi Sarva Vishwavidyalaya, Gandhinagar
MCA Semester II
MCA-24 (A) : Mobile Programming

Rationale:
This course is targeted for students who want to start writing mobile applications on Android platforms. Android became a formidable mobile operating system, and this course will provide hands-on learning classes on writing Android applications. We will get started with the basics of Android programming by covering the most recent version of Android and understanding its development framework. We will learn both the fundamentals and the nuts and bolts of Android and have an exciting opportunity to write feature-rich Android applications that may be published in the Android market.

Prerequisites: Knowledge of the Core Java Programming, database concepts.

Learning Outcomes:
At the end of this course, student will be able:
- to understand the process of developing software for the mobile
- to create mobile applications on the Android Platform
- to create mobile applications involving data storage in SQLite database.

Teaching and Evaluation Scheme: The objective of evaluation is to evaluate the students throughout the semester for better performance. Students are evaluated on the basis of continuous evaluation system both in theory and practical classes based on various parameters like term work, class participation, practical and theory assignments, presentation, class test, Regular Attendance, etc.

Sub Total Credit	Teaching scheme (per week)		Examination scheme				Total Marks
			MID	CEC	External		
	Th	Pr	Th	Th	Th.	Pr.	
5	3	4	25	25	50	50	150

Course Contents:

UNIT – I Introduction to Android   **[20%]**
- History of Mobile Software Development
- The Open Handset Alliance
- The Android Platform Android SDK
- Building a sample Android application
- Anatomy of Android applications
- Android terminologies

UNIT – II Android Application Design Essentials   **[20%]**

- Application Context, Activities, Services, Intents
- Receiving and Broadcasting Intents
- Android Manifest File and its common settings
- Using Intent Filter, Permissions
- Managing Application resources in a hierarchy
- Working with different types of resources

UNIT – III Android User Interface Design Essentials   **[20%]**

- User Interface Screen elements
- Designing User Interfaces with Layouts
- Drawing and Working with Animation

UNIT – IV Using Android APIs - 1   **[20%]**

- Using Android Data and Storage APIs
- Managing data using SQLite
- Sharing Data between Applications with Content Providers

UNIT – V Using Android APIs – 2   **[20%]**

- Using Android Networking APIs
- Using Android Web APIs
- Using Android Telephony APIs
- Deploying (selling) your Android application

Text Book(s):
1. Lauren Darcey and Shane Conder, "Android Wireless Application Development", 2nd edition, Pearson Education

Reference Books:
1. Reto Meier, "Professional Android 2 Application Development", Wiley India Pvt Ltd
2. Mark L Murphy, "Beginning Android", Wiley India Pvt Ltd
3. Sayed Y Hashimi and Satya Komatineni, "Pro Android", Wiley India Pvt Ltd

Unit wise coverage from Text book(s):
            Unit 1: Chapter 1, 3, 4
            Unit 2: Chapter 5, 6
            Unit 3: Chapter 7, 8, 9
            Unit 4: Chapter 10, 11
            Unit 5: Chapter 12, 13, 16, 29

Practical List

1. Create "Hello World" application. That will display "Hello World" in the middle of the screen in the red color with white background.
   To understand Activity, Intent
   - Create sample application with login module.(Check username and password)
   - On successful login, go to next screen. And on failing login, alert user using Toast.
   - Also pass username to next screen.
2. Create login application where you will have to validate EmailID (UserName). Till the username and password is not validated, login button should remain disabled.
3. Create and Login application as above. On successful login , open browser with any URL.
4. Create an application that will pass some number to the next screen , and on the next screen that number of items should be display in the list.
5. Understand resource folders :
   - Create spinner with strings taken from resource folder(res >> value folder).
   - On changing spinner value, change image.
6. Understand Menu option.
   - Create an application that will change color of the screen, based on selected options from the menu.
7. Create an application that will display toast(Message) on specific interval of time.
8. Create an background application that will open activity on specific time.
9. Create an application that will have spinner with list of animation names. On selecting animation name, that animation should affect on the images displayed below.
10. Understanding of UI :
    - Create an UI such that, one screen have list of all the types of cars.
    - On selecting of any car name, next screen should show Car details like : name , launched date, company name, images(using gallery) if available, show different colors in which it is available.
12. Understanding content providers and permissions:
    - Read phonebook contacts using content providers and display in list.
13. Read messages from the mobile and display it on the screen.
14. Create an application to call specific entered number by user in the EditText
15. Create an application that will create database with table of User credential.
16. Create an application that will play a media file from the memory card.
17. Create an application to make Insert, update, Delete and retrieve operation on the database.
18. Create an application to read file from the sdcard and display that file content to the screen.
19. Create an application to draw line on the screen as user drag his finger.
20. Create an application to send message between two emulators.
21. Create an application to take picture using native application.
22. Create an application to pick up any image from the native application gallery and display it on the screen.
23. Create an application to open any URL inside the application and clicking on any link from that URl should not open Native browser but that URL should open the same screen.