Uka Tarsadia University

B. Tech.

Semester VI

MOBILE APPLICATION DEVELOPMENT

XXXXXX

EFFECTIVE FROM July-2021

Syllabus version:1.00

Subject Code	Subject Title	Teaching Scheme			
		Hours		Credits	
		Theory	Practical	Theory	Practical
XXXXXX	Mobile Application Development	0	4	0	2

Subject Code	Subject Title	Theory Examination Marks		Practical Examination Marks	Total Marks
		Internal	External	CIE	
XXXXXX	Mobile Application Development	0	0	100	100

Objectives of the course:

- To introduce Android and iOS platform and its' architecture and life cycle.
- To provide knowledge of UI designing, work with database and to develop application.

Course outcomes:

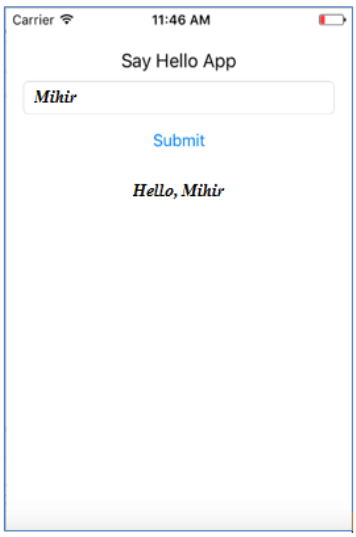
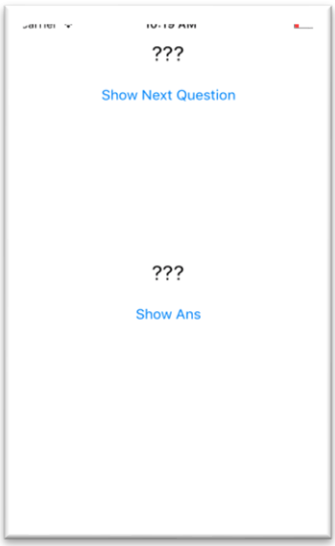
Upon completion of the course, the student shall be able to

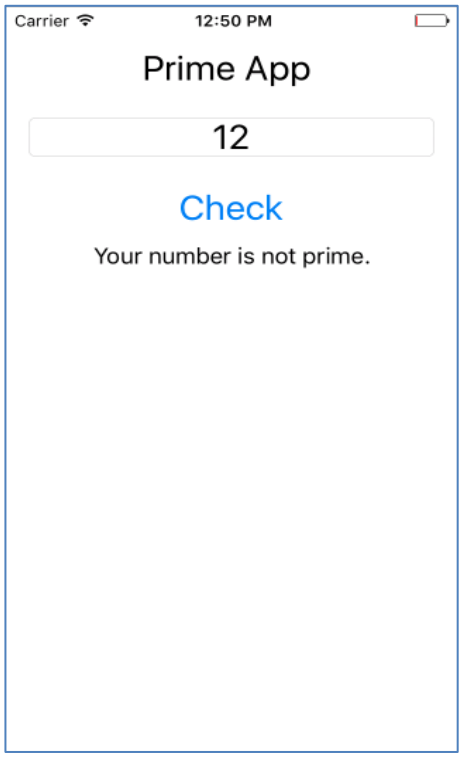
CO1: Describe the different mobile technologies, mobile development platform.
CO2: Compute how application works, its lifecycle and resources.
CO3: Design and implement application with user interface, use of APIs for data storage.

Sr. No.	Mobile Application Development (Android) (Practical)	Hours
1	Installation of android SDK, android studio and creating android AVD.	2
2	Create an Android application having following requirements. - Application Name: Hello World - Application Version Name: 1.0.0 - Application Version Code: 1 - Set appropriate application launcher icon - Set minimum SDK version to 21. Test the Android application on emulator version 20 to 24.	2
3	Create an android application that will demonstrate the use of user interface elements and Layouts.	4
4	Create an application that have two activities: - Registration of student - Login Login activity check for user id and password. On successful login go to home screen and display user data on home page. Registration of student activity have "Registration" button. If user clicks on "Registration" button alert dialog will be display. If user click on yes, registration details will be stored in database by using SQLite. If user click on no registration details will be display only in toast notification. Registrations of students contain student name, address, and contact number, emailed, date of birth.	6

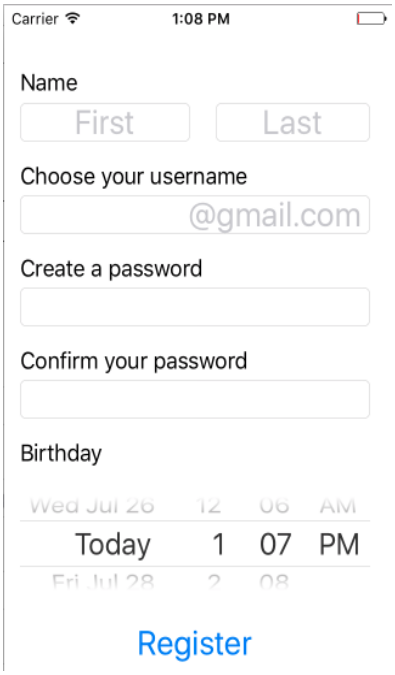
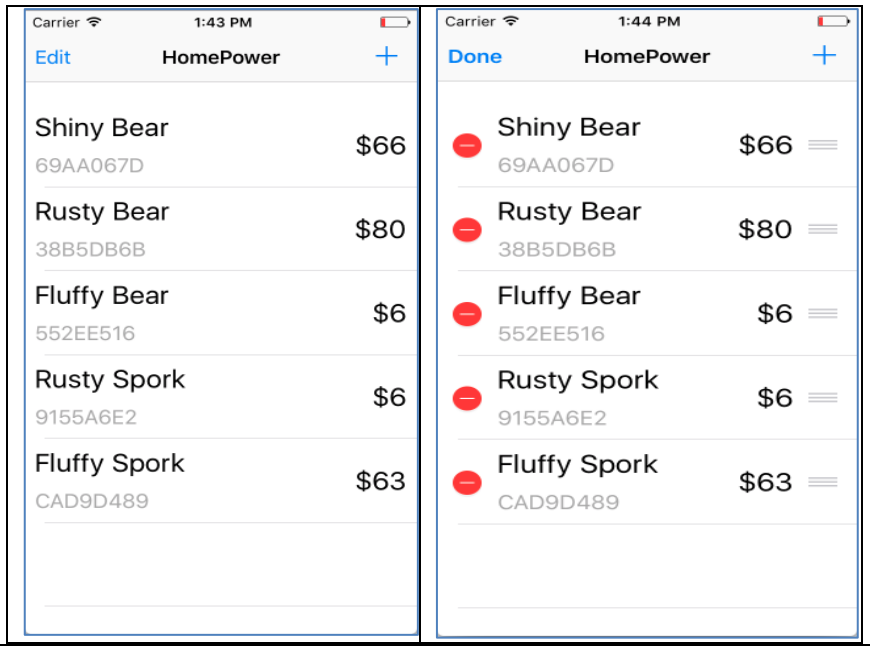
5	Create an android application having list of available courses like B.Tech, M.Tech, and Ph.D. If user clicks on particular course then redirect to the next activity having subject list of selected course. Subject list activity contains a "Submit" button. When user clicks on "Submit" button then selected subjects are sent back to next activity and display selected subjects in a toast message.	2
6	Design an activity which contains three fragment horizontally. First fragment contains the gallery of institute, second fragment contains available courses. If user selects a particular course from the list then third Fragment displays the description of selected course from the second fragment.	4
7	Design and develop an activity which contains the option for teacher to upload course related documents and option for student to view uploaded document by using file storage.	4
8	Create an application that will play a media file from the memory card.	2
9	Create an application to take picture using native application.	2
10	Create an application that will demonstrate the use of recycler view.	2

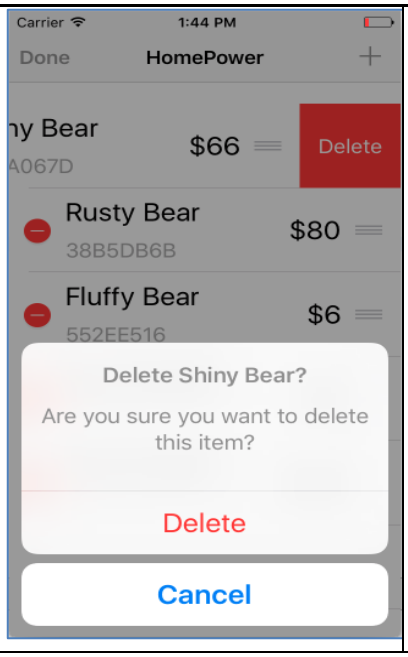
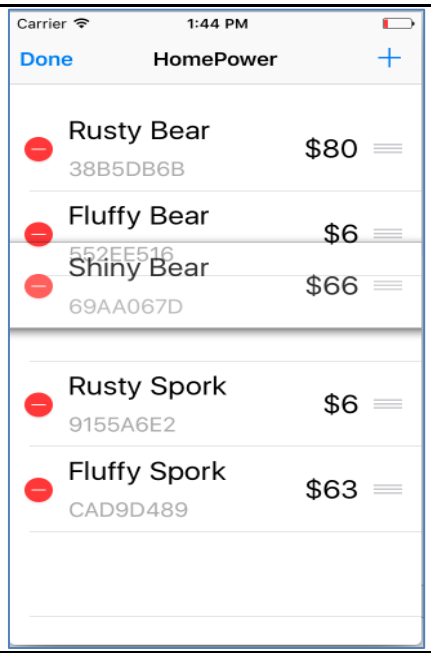
Sr. No.	**Mobile Application Development (iOS)(Practical)**	**Hours**
1	Introduction to Swift programming language and X Code IDE. Write swift functions for following functionality: a. Check whether number is prime or not. b. Check whether number is palindrome or not.	2
2	Write a program to create parent class Person and derive two classes from it namely Student and Employee. Classes shall have following attributes and methods: a. Person -> name, age, gender, city, get(), set() b. Student -> id, sem, div, sub1marks, sub2marks, sub3marks, result() c. Employee-> id, designation, salary, gross_salary() d. for gross_salary() consider following value: i. If salary < 10000 then HRA=10%, DA=5%, PF=200 ii. If salary > 10000 then HRA=15%, DA=7%, PF=10%	4
3	Create an iOS application to develop "Say Hello App". Use TextField to get user name as input. On tap of button, display user name with hello in Label.	2

		
4	Create an iOS application for Quiz. Create following layout given below and performed following functionality. a. Question and Answers Load from Data Source (Data Source contains String Array). b. Contains two buttons and two labels. c. Display next question on tap of Show Next Question button. d. Display answer on tap of Show Answer button. 	2
5	Create an iOS application demonstrate use of Tab Bar Control in your application. Application contains following functionality:	2



a. Two tabs called Map and Prime Number.
b. On click of Map tag Map Should be open.
c. On Click of Prime Number, view will be display to Check Inputted Number is prime or not.
d. Map View should be created using programmatically.

6	Create an iOS application interface that look like registration view as given below. When user click on register display the data on second view. 	4
7	Create an iOS application called “HomePower”, which has given below design. 	8

	  Implement following functionalities in "HomePower" application: a. Layout should be auto layout. b. When user taps on Add Button (+), generate random name, serial number and dollar value. Bind generated values to tableView. c. On tap of Edit button, table view goes into "Editing" mode. On tap of delete button, alert should be open "are you sure you want delete item". If user presses delete button then that item should be deleted from tableview and datasource. d. On tap of any record, display second view and selected record data should be display in textFields	
8	Create iOS application to demonstrate use of following gestures: a. Tap (double tap on screen) b. Long Press (long press to 3 second) c. Pinch d. Swipe (Right Swipe) e. Rotation	6

Text books:

1. Wei-Meng Lee – "Beginning Android 4 Application Development", Wiley India Pvt Ltd.
2. Christian Keur, Aaron Hillegass – "iOS Programming: The Big Nerd Ranch Guide", 6th Edition, Big Nerd Ranch Guides.

Reference books:

1. Reto Meier – "Professional Android 4 Application Development", Wiley India Pvt Ltd.
2. Mark L Murphy – "Beginning Android", Wiley India Pvt Ltd.
3. Pradeep Kothari – "Android Application Development (with Kitkat Support)", Black Book.
4. Matt Neuberg – "iOS 10 Programming Fundamentals with Swift", O'Reilly.

5. Vandad Nahavandipoor – “iOS 10 Swift Programming Cookbook: Solutions and Examples for iOS Apps”, O'Reilly Media.
6. Abhishek Mishra – “Swift iOS Programming: 24-Hour Trainer, Book + Videos (WROX)”, Wiley.
7. Michael Dippery – “Professional iOS Programming with Swift (WROX)”, Wiley.

Course objectives and Course outcomes mapping:

- To introduce Android and iOS platform and its’ architecture and life cycle: CO1, CO2.
- To provide knowledge of UI designing, work with database and to develop application: CO2, CO3.

Programme outcomes:

PO 1: Engineering knowledge: An ability to apply knowledge of mathematics, science, and engineering.

PO 2: Problem analysis: An ability to identify, formulates, and solves engineering problems.

PO 3: Design/development of solutions: An ability to design a system, component, or process to meet desired needs within realistic constraints.

PO 4: Conduct investigations of complex problems: An ability to use the techniques, skills, and modern engineering tools necessary for solving engineering problems.

PO 5: Modern tool usage: The broad education and understanding of new engineering techniques necessary to solve engineering problems.

PO 6: The engineer and society: Achieve professional success with an understanding and appreciation of ethical behaviour, social responsibility, and diversity, both as individuals and in team environments.

PO 7: Environment and sustainability: Articulate a comprehensive world view that integrates diverse approaches to sustainability.

PO 8: Ethics: Identify and demonstrate knowledge of ethical values in non-classroom activities, such as service learning, internships, and field work.

PO 9: Individual and team work: An ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO 10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give/receive clear instructions.

PO 11: Project management and finance: An ability to demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO 12: Life-long learning: A recognition of the need for, and an ability to engage in life-long learning.

Programme outcomes and Course outcomes mapping:

Program Outcomes	Course Outcomes		
	CO 1	CO 2	CO 3
PO 1			
PO 2	√	√	
PO 3		√	
PO 4		√	√
PO 5			√
PO 6			
PO 7			
PO 8			
PO 9			√
PO 10			
PO 11			
PO 12			√