

Uka Tarsadia University

C. G. Patel Institute of Technology



B.Tech

Semester – 6

030090613/030080613

MOBILE APPLICATION DEVELOPMENT LAB

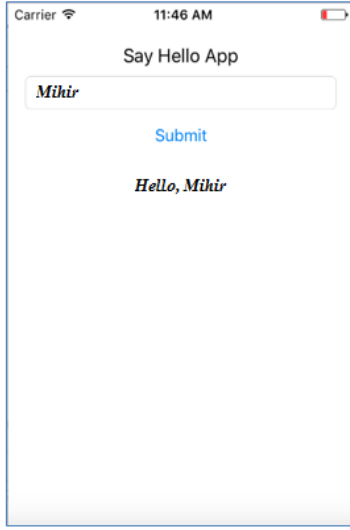
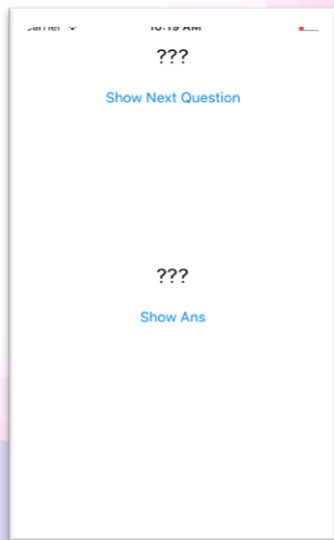
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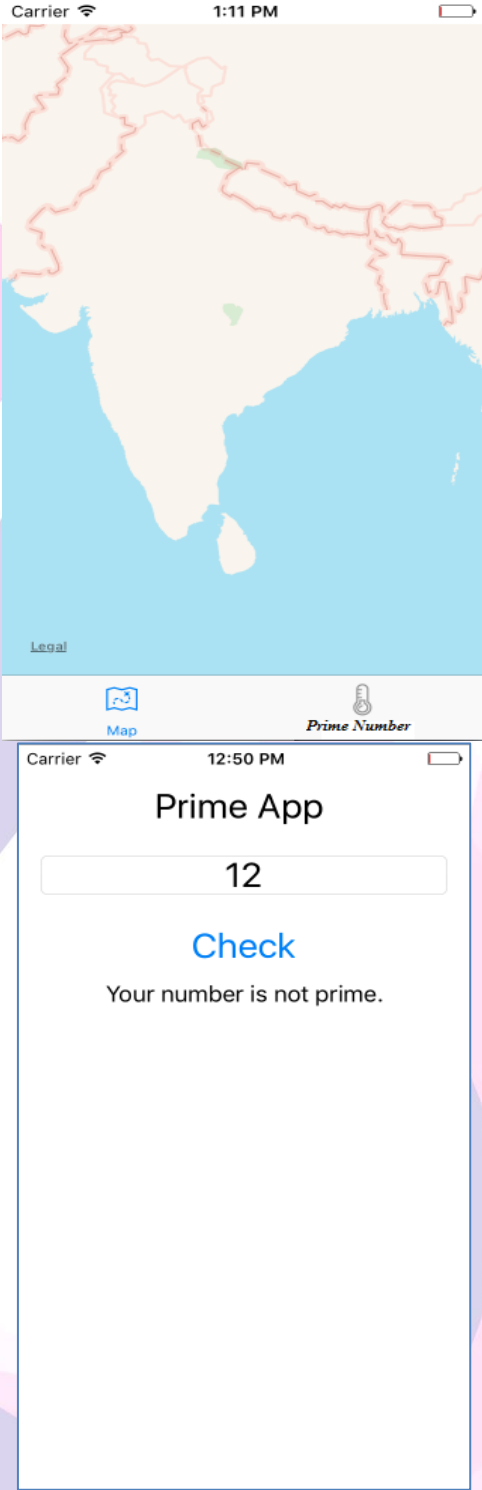
Syllabus version: 1.01

B. Tech	Subject	Hours
6 th Sem	(030090613/030080613) Mobile Application Development Lab	4 hrs/week
	(Practical)	2 Credits
Objective of the course: <ul style="list-style-type: none"> To provide practical, hands-on experience and simulation of Android programming and iOS programming. 		
Course Outcome:		
CO1	Describe the different mobile technologies, mobile development platform and mobile GUI.	
CO2	Comprehend how application works, their lifecycle and resources.	
CO3	Design and develop applications with user interface.	
CO4	Use of API for data storage, file retrieval and content provider.	
CO5	Use of communication and location based library.	
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. <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - Registration of student - Login Login activity check for userid 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.	8

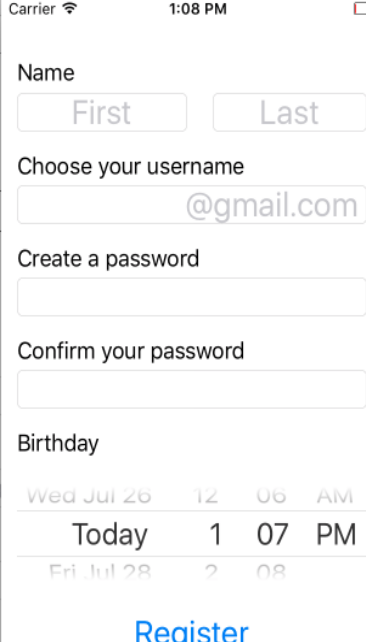
5	Create an android application having list of available courses like B.Tech, M.Tech, and Ph.D. If user clicks on particular course then redirect to the next activity having subject list of selected course. Subject list activity contains a "Submit" button. When user clicks on "Submit" button then selected 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.	2
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	<p>Introduction to Swift programming language and XCode IDE.</p> <p>Write swift functions for following functionality:</p> <ol style="list-style-type: none"> Check whether number is prime or not. Check whether number is palindrome or not. 	2
2	<p>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:</p> <ol style="list-style-type: none"> Person -> name, age, gender, city, get(), set() Student -> id, sem, div, sub1marks, sub2marks, sub3marks, result() Employee-> id, designation, salary, gross_salary() for gross_salary() consider following value: <ol style="list-style-type: none"> If salary < 10000 then HRA=10%, DA=5%, PF=200 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	<p>Create an iOS Application for Quiz. Create following layout given below and performed following functionality.</p> <ol style="list-style-type: none"> Question and Answers Load from Data Source (Data Source contains String Array). Contains two buttons and two labels. Display next question on tap of Show Next Question button. Display answer on tap of Show Answer button. 	2
5	<p>Create an iOS Application demonstrate use of Tab Bar Control in your application. Application contains following functionality:</p>	2

	 <p>a. Two tabs called Map and PrimeNumber.</p> <p>b. On click of Map tag Map Should be open.</p> <p>c. On Click of PrimeNumber, view will be display to Check Inputted Number is prime or not.</p> <p>d. Map View should be created using programmatically.</p>	
6	Create an iOS Application interface that look like registration view as	4

given below. When user click on register display the data on second view.



Carrier 1:08 PM

Name

First Last

Choose your username

@gmail.com

Create a password

Confirm your password

Birthday

Wed Jul 26 12 06 AM

Today 1 07 PM

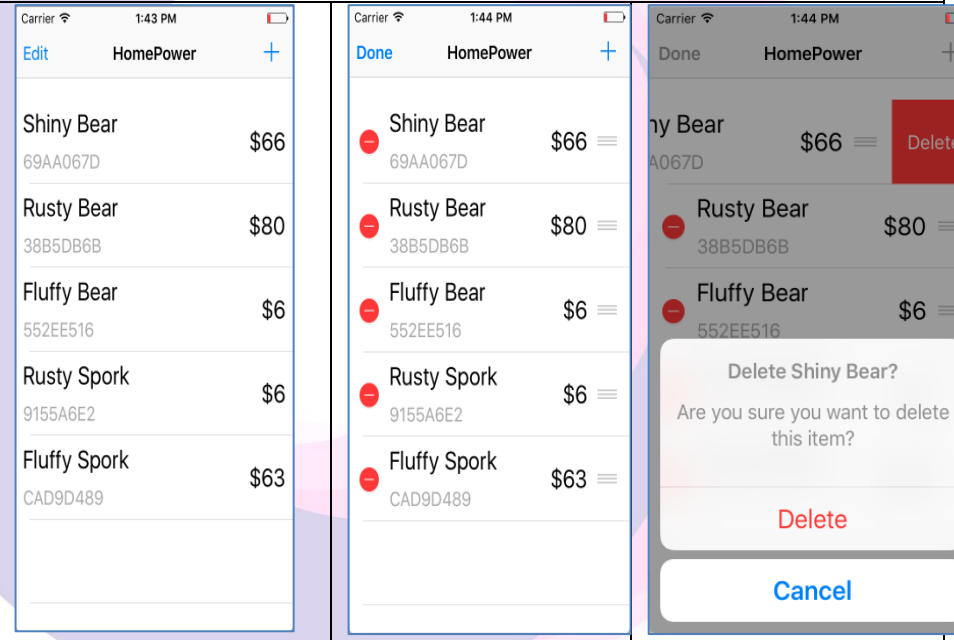
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Register

7

Create an iOS application called “Homepwner”, Which has given below design.

8



Carrier 1:43 PM

Edit HomePower +

Shiny Bear	\$66
69AA067D	
Rusty Bear	\$80
38B5DB6B	
Fluffy Bear	\$6
552EE516	
Rusty Spork	\$6
9155A6E2	
Fluffy Spork	\$63
CAD9D489	

Carrier 1:44 PM

Done HomePower +

Shiny Bear	\$66	
69AA067D		
Rusty Bear	\$80	
38B5DB6B		
Fluffy Bear	\$6	
552EE516		
Rusty Spork	\$6	
9155A6E2		
Fluffy Spork	\$63	
CAD9D489		

Carrier 1:44 PM

Done HomePower +

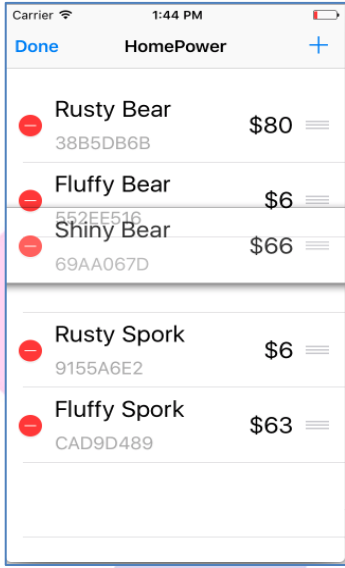

Delete

Delete Shiny Bear?

Are you sure you want to delete this item?

Delete

Cancel

		
	<p>Implement following functionalities in “Homepwner” application:</p> <ol style="list-style-type: none"> Layout should be auto layout. When user taps on Add Button (+), generate random name, serial number and dollar value. Bind generated values to tableView. 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. On tap of any record, display second view and selected record data should be display in textFields and also selected image is display in imageView. If image is not selected for item than give facility to choose image using UIImagePickerController Control (store image into cache storage). When user press back navigation button data should be saved (if any data changed into second view) and reflect updated data in the tableView. When application goes into background, created items and it’s images should be saved persistently using archiving. 	
8	<ol style="list-style-type: none"> Create iOS application to demonstrate use of following gestures: <ol style="list-style-type: none"> Tap (double tap on screen) Long Press (long press to 3 second) Pinch Swipe (Right Swipe) Rotation Create iOS application to demonstrate use of UINavigationController. 	6

Text book:

1. Wei-Meng Lee – “Beginning Android 4 Application Development”, Wiley India Pvt Ltd.
2. Christian Keur and Aaron Hillegass – iOS Programming THE BIG NERD RANCH GUIDE 6TH Edition- Big Nerd Ranch

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. Vanda Nahavandipour -iOS 10 Swift Programming Cookbook: Solutions and Examples for iOS Apps -Shroff/O'Reilly
6. Abhishek Mishra - Swift iOS Programming: 24-Hour Trainer, Book + Videos (WROX)- Wiley
7. Michael Dippery -Professional iOS Programming with Swift (WROX) - Wiley

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Course objectives and course outcomes mapping:

- To develop a skill to describe mobile technologies and mobile environment: CO1, CO2, CO3, CO4, CO5.
- To develop an application for mobile device: CO2, CO3, CO4, CO5.
- To develop an application using components and resources: CO3, CO4, CO5.
- To develop an application using API's: CO4, CO5.

Programme Outcomes:

- **PO 1: Engineering knowledge:** An ability to apply knowledge of mathematics, science, and engineering
- **PO 2: Problem analysis:** An ability to identify, formulate, and solve 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:

Programme Out come	Course out comes				
	CO1	CO2	CO3	CO4	CO5
PO 1	√	√	√	√	√
PO 2	√	√	√	√	√
PO 3	√	√	√	√	√
PO 4	√	√	√	√	√
PO 5	√	√	√	√	√
PO 6					
PO 7					
PO 8					
PO 9			√		
PO 10	√	√	√	√	√
PO 11					
PO 12	√	√	√	√	√