"Techno-Social Excellence"
Marathwada Mitra Mandal's
INSTITUTE OF TECHNOLOGY (MMIT)
Lohgaon, Pune-47

'' येथे बहुतांचे हित ''
MMIT

"Towards Ubiquitous Computing Technology"
Department of Computer Engineering
(Academic Year 2019-20)

Report

On

"Mobile Application Development"
(TE Computer Revised Syllabus - SDL)

Held on
24th July 2019 to 28th July 2019

At
Marathwada Mitra Mandals Institute of Technology, Lohgaon, Pune

Presented By
Prof. Swapnil S. Chaudhari

Workshop Details

Subject: Mobile Application Development

In Association with: MMIT

Organized By: Department of Computer Engineering, MMIT, Lohgaon, Pune
Date: 24th July 2019 to 28th July 2019

Registration Fee: Rs. 500/- for outside participant

Resource Persons:
1. S. S. Chaudhari MMIT, Pune

Course Description

This course is concerned with the development of applications on mobile computing platforms. Android will be used as a basis for teaching programming techniques and design patterns related to the development of standalone applications and mobile interfaces to enterprise and cloud systems. Emphasis is placed on the processes, tools and frameworks required to develop applications for current and emerging mobile computing devices. We should work at all stages of the software development life-cycle from inception through to implementation and testing. In doing so, you will be required to consider the impact of user characteristics, device capabilities, networking and cloud infrastructure and deployment environment, in order to develop software capable of meeting the requirements of stakeholders.

Course Objectives

- Course introduction. Lecture hours: 0.5 hour.
- Characteristics of mobile applications. Lecture hours: 1.5.
- History of mobile application frameworks. Lecture hours: 1.
- Overview of mobile application development languages – Objective-C and Java. Lecture hours: 1.
- Application models of mobile application frameworks. Lecture hours: 1.
- User-interface design for mobile applications. Lecture hours: 1.
- Managing application data. Lecture hours: 1.
- Integrating with cloud services. Lecture hours: 1.
- Integrating networking, the OS and hardware into mobile-applications. Lecture hours: 1
- Addressing enterprise requirements in mobile applications – performance, scalability, modifiability, availability and security. Lecture hours: 1.
- Testing methodologies for mobile applications. Lecture hours: 1.
- Publishing, deployment, maintenance and management.
- Mini Project. Lecture hours: 2.

Learning Outcomes

LO1. Be exposed to technology and business trends impacting mobile applications

LO2. Be competent with the characterization and architecture of mobile applications.

LO3. Be competent with understanding enterprise scale requirements of mobile applications.

LO4. Be competent with designing and developing mobile applications using one application development framework.

Course Outcomes

Upon successful completion of this course you should be able to:

- CO 1: **Describe** and **compare** different mobile application models/architectures and patterns.
- CO 2: **Apply** mobile application models/architectures and patterns to the development of a mobile software application.
- CO 3: **Describe** the components and structure of a mobile development framework (Google's Android Studio).
- CO 4: **Apply** a mobile development framework to the development of a mobile application.
- CO 5: **Demonstrate** advanced Java programming competency by developing a maintainable and efficient cloud based mobile application.
- CO 6: **Address** the limitations and challenges of working in a mobile environment and thus **utilise** the opportunities for commercial and/or social benefit.

Day-1
(24th July 2019)

Contents of First Session were as follows:

    a) Theory Contents of Object oriented programming

    b) Discussion on OOPS Concept

    c) Take away from the Assignments

Second Session was based on Practical Assignments discussion based on OOPS Concepts

Session-I
- Defining and using classes and objects
    1. Defining classes
    2. Constructors and creating objects
    3. Object references and accessing objects via object references
- Visibility modifiers
    1. get and set methods
    2. Passing and returning object references as parameters
- Manipulating array of objects
    1. Array List
- Static methods and variables
    1. Methods overloading

- Exception handling
    1. Examples of causes of exceptions
    2. Different ways of handling exceptions
    3. Not handling the exception at all
    4. Handling exception where it occurs: the try-catch statement
    5. Handling exception at a different point

- Discussion on OOPS Concept

Session-II
- Run the program, and try to create an exception by entering 0 for the input. The program should terminate with an exception.
- Write a C++ program to accept details of N employees and then calculate the gross and net salary. (Hint HRA: 60%, DA: 25% , IT:33%)
- Write a C++ Program to demonstrate Bank Transaction.
- Input student Name, Roll No, Branch, Age and telephone no as a record through structure and display all the information.
- Input your date of Birth and current date through structure and calculate your age in Year, Month and days assume that 1 year = 365 days and 1 month = 30 days.

Day-2
(25th July 2019)

Contents of First Session were as follows:
    d) Contents of Android
    e) Discussion on Android Application Concept

The Android Platform: Introduction to the Android platform and the Android Studio IDE, Android components, Activities

Second Session was based on Practical Assignments discussion based on Android Concepts

Session I
- **Introduction To Mobile Apps**

I. Why we Need Mobile Apps
II. Different Kinds of Mobile Apps
III. Briefly about Android

- **Introduction Android**

I. History Behind Android Development
II. What is Android?
III. Pre-requisites to learn Android
IV. Brief Discussion on Java Programming

- **Installing Android Machine**

I. Configuring Android Stack
II. Setting up Android Studio
III. Working with Android Studio
IV. Using Older Android Tools

Session II

- First Android Project " Hello World"

Hello World App
I. Creating your first project
II. The manifest file
III. Layout resource
IV. Running your app on Emulator

- **Creating First Android Application**

I. Creating Android Project
II. Debugging Application through DDMS
III. setting up environment
IV. AVD Creation
V. Executing Project on Android Screen

Day-3
(26th July 2019)
Contents of First Session were as follows:

     a) Contents of Android
     b) Discussion on Android Application Concept

User Interface Design: Intents, Activity lifecycle, UI Design: Widgets and Layouts, UI Events, Event Listeners
Second Session was based on Practical Assignments discussion based on Android Concepts.

Session I
- **Building UI with Activities**

I. Activities
II. Views, layouts and Common UI components
III. Creating UI through code and XML
IV. Activity lifecycle
V. Intents
VI. Communicating data among Activities

- **Advanced UI**

I. Selection components (GridView, ListView, Spinner)
II. Adapters, Custom Adapters
III. Complex UI components
IV. Building UI for performance
V. Menus
VI. Creating custom and compound Views

Session II
- **Notifications**

I. Toast, Custom Toast

II. Dialogs

III. Status bar Notifications

- **Multithreading**

I. Using Java Multithreading classes

II. AsyncTask

III. Handler

IV. Post

- **Styles And Themes**

I. Creating and applying simple Style

II. Inheriting built-in Style and User defined style

III. Using Styles as theme

Day-4
(27th July 2019)

Contents of First Session were as follows:

    a) Contents of Android

    b) Discussion on Android Application Concept

Multimedia in Android: Audio playback and Media Player, Sound Pool

Second Session was based on Practical Assignments discussion based on Android Concepts.

Session I
- **Multimedia in Android**

I. Multimedia Supported audio formats

II. Simple media playback

III. Supported video formats

IV. Simple video playback

Session II
- **Sound Pool in Android**

I. Multimedia Supported audio formats

II. Sound Pool Simple media playback

III. SoundPool Supported video formats

IV. SoundPool Simple video playback

- **Resources and Assets**

I. Android Resource

II. Using resources in XML and code

III. Localization

IV. Handling Runtime configuration changes

- **Intent, Intent Filters and Broadcast Receivers**

I. Role of filters
II. Intent-matching rules
III. Filters in your manifest
IV. Filters in dynamic Broadcast Receivers
V. Creating Broadcast receiver

Day-5

(28th July 2019)

Contents of First Session were as follows:
   a) Contents of Android
   b) Discussion on Android Application Concept
Database in Android: SQlite, Content Providers
Second Session was based on Practical Assignments discussion based on Android Concepts.

Session I

- **Data Storage**
I. Shared Preferences
II. Android File System
III. Internal storage
IV. External storage
V. SQLite

- **Introducing SQLite**

- SQLiteOpenHelper and creating a database
  Opening and closing adatabase

Session II

- **Content Providers**
I. Accessing built in content providers
II. Content provider MIME types
III. Searching for content
IV. Adding, changing, and removing content
V. Creating content provider
VI. Working with content files

- **Services**
I. Overview of services in Android
II. Implementing a Service
III. Service lifecycle
IV. Inter Process Communication (AIDL Services)

- **Mini Project**

Marathwada Mitra Mandal's
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Lohgaon, Pune-411047.

Department of Computer Engineering
Attendance

Total Count:-

Date:- 24-28/07/2019

Sr. No	Roll No	Name of Student	Signature
1	TEA01	ALI SHAHRUKH MUJAWAR	
2	TEA02	ANPAT AKASH DAYANAND	A.A.D.
3	TEA03	ASHWANI KUMAR RAI	
4	TEA04	ASHWINI YADAV	
5	TEA05	AYUSH KUMAR	Ayk
6	TEA06	BAGAL PRATIKSHA ANAND	
7	TEA07	BHOJANE RUTVIK SANJAYRAO	RBonje
8	TEA08	BHOSALE PREM SURYAKANT	
9	TEA09	BIRADAR MADHAV KERBA	
10	TEA10	BIRADAR VIJAY ANTESHWAR	Vijay
11	TEA11	BIRAJDAR DATTATRAYA PARMESHWAR	
12	TEA12	CHAVAN AISHWARYA SUJIT	ASChavan
13	TEA13	CHOPDE ROHAN DATTATRAY	
14	TEA14	CHOURE VAIBHAV KIRAN	
15	TEA15	DAVALE BALAJI RAJENDRA	Balaji
16	TEA16	DEOCHAKE SAMIKSHA SUHAS	
17	TEA17	DESHMUKH AKANKSHA BHUPENDRA	Akanksha
18	TEA18	DHAMDHERE YASH ABHAY	Yash
19	TEA19	DIXIT SANCHIT MAHENDRA	
20	TEA20	DONGARE VAIBHAV CHANDRAKANT	vaibhav
21	TEA21	DORGE ONKAR BALKRISHNA	Onkar
22	TEA22	DORGE TEJAS JITENDRA	
23	TEA23	DUDHATE LAXMAN RAMRAO	Laxman
24	TEA24	GADEKAR KETAKI MACHINDRA	Ketaki
25	TEA25	GADEKAR PRABHULING KALLAPPA	
26	TEA26	GAIKWAD KAJAL RAJU	Kajul
27	TEA27	GAIKWAD KESHAV SUNIL	Keshav
28	TEA28	GATE SACHIN SUNIL	
29	TEA29	GAWADE KOMAL SURYAKANT	Komal
30	TEA30	GHANWAT MANJUSHA HANUMANT	Manjusha
31	TEA31	GHORPADE PRATIKSHA DHANAJI	Pratiksha

32	TEA32	GHUGARKAR PRACHI VIJAY	
33	TEA33	GONDKAR MAHESH RAJENDRA	
34	TEA34	GUJAR RUSHIKESH KAILAS	
35	TEA35	HANNURE AISHWARYA MARUTI	
36	TEA36	HARDIK KULSHRESHTHA	
37	TEA37	HIBARE HARISH SUNIL	
38	TEA38	HULAWALE KAJOL ANIL	
39	TEA39	INGLE VIJAY RAVINDRA	
40	TEA40	JADHAV POOJA SOPAN	
41	TEA41	JADHAV SHIVAM PRAVIN	
42	TEA42	JADHAV VISHAKHA BALASAHEB	
43	TEA43	JAGTAP ANKITA ARUN	
44	TEA44	JAGTAP SONAL SANTOSH	
45	TEA45	JALLAPELLI VIRAJ	

Department of Computer Engineering
Attendance

Total Count:-

Date:- 24-28/07/2019

Sr. No	Roll No	Name of Student	Signature
1	TEB01	JAYBHAY ASHWINI DATTU	
2	TEB02	JOSHI MANDAR MAHESH	
3	TEB03	KADAM VIRAJ SHRIKANT	
4	TEB04	KAKADE HARSHAL GANPAT	
5	TEB05	KANCHAN DNYANESHWAR ZUNJRUK	
6	TEB06	KARAN SAMPAT ROKADE	
7	TEB07	KHAIRE SIDDHI RAJESH	
8	TEB08	KHARADE SHUBHAM RAJENDRA	
9	TEB09	KONPRATIWAR SAURABH SATISH	
10	TEB10	KULKARNI SARTHAK SANJAY	
11	TEB11	KUMBHAR SHUBHAM M.	
12	TEB12	LABADE PRATIK BHAUSAHEB	
13	TEB13	LAGAD SUJIT SANTOSH	
14	TEB14	LOKHANDE PRACHI MAYANAND	
15	TEB15	LONDHE ADITYA HANUMANT	
16	TEB16	MAGAR NARAYAN DIGAMBAR	
17	TEB17	MATHWALE SANTOSH RAMRAO	
18	TEB18	MIRGE SHUBHAM JAYAJI	
19	TEB19	MORE RUTUJA SAHEBRAO	
20	TEB20	MUKIM CHINMAY LAXMIKANT	
21	TEB21	MULLA SAHIL JAKIRHUSEN	
22	TEB22	PARADE PRAJAKTA DATTATRAYA	
23	TEB23	PATEL JAY DILIP	
24	TEB24	PATIL GIRIRAJ RAVIKIRAN	
25	TEB25	PATIL PRITESH SUNIL	
26	TEB26	PATIL ROSHAN ANAND	
27	TEB27	PATIL SURAJ VASANT	
28	TEB28	PAWAR PRADIP VINAYAK	
29	TEB29	PAWAR SHUBHAM BALAJI	
30	TEB30	PAWAR SHUBHAM SAHEBRAO	
31	TEB31	PUNDKAR MANALI ANIL	

32	TEB32	SANDHAN PRAVIN NAVNATH	
33	TEB33	SARWADE HARSHAD DEVANAND	
34	TEB34	SAWANT ROSHAN YASHWANT	
35	TEB35	SHAIKH UMAR FARUK ABDUL WAHID	
36	TEB36	SHEDGE ANUP SURESH	
37	TEB37	SHEKH SAHIL NASIR	
38	TEB38	SHELAKE VISHAL PRAKASH	
39	TEB39	SHINDE SHIVANI SURESH	
40	TEB40	SHREEYA SUNIL DESHMUKH	
41	TEB41	SHREYAS MAHALE	
42	TEB42	SHRIRAMWAR PRIYANKA SHANKARRAO	
43	TEB43	SINGH ROHIT YOGENDRA	
44	TEB44	YENGANDUL SHITAL MUKUND	
45	TEB45	ZUNZURWAD DEVKI MADHAVRAO	