

6.4.2. MOBILE APPLICATION DEVELOPMENT

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RATIONALE

Mobile Application development is the very hot business domain. Majority of the corporate have a separate division for the development of mobile applications. It is essential that diploma students must know the way to apply advanced data communicating methods and networking protocols for wireless and mobile devices.

COURSE OUTCOMES

After undergoing the subject, the students will be able to:

- CO1: Study the characteristics, basic concepts of mobile computing.
- CO2: Illustrate architecture and protocols in Mobile computing.
- CO3: Compare the network protocols governing the mobile communication.
- CO4: Describe different kinds of mobile OS prevailing in the market.
- CO5: Develop a mobile application using different components of Android.

DETAILED CONTENTS

UNIT-I

Architecture of Mobile Computing, 3- Tier Architecture, Presentation (Tier-1), Application (Tier -2), Data (Tier – 3)

UNIT-II

Introduction to SMS, Mobile OS.

Short Message Service (SMS): Mobile computing over SMS, Short Message Service, Strength of SMS, SMS Architecture, Value added services through SMS.

Mobile Operating Systems: Evaluation of Mobile Operating System-Handset. Manufactures and their Mobile OS- Mobile OS and their features.

UNIT-III

ANDROID : Android Versions, Features of Android, Architecture of Android, Android Market, Android Runtime (Dalvik Virtual Machine)

ANDROID SDK & ADT: Android SDK, Android Development Tool (ADT), Installing and configuring Android, Android Virtual Device (AVD).

ACTIVITIES & INTENTS: Understanding Activities, Activity Life Cycle, Linking activities. and intents, Calling built-in applications using intents, Fragments Displaying Notifications

User Interface: Views and View groups, Layouts, Display Orientation, Action Bar, Listening for UI Notifications.

UNIT-IV

Basic Views: Text view, Button, Image Button, Edit Text, Check Box, Toggle Button, Radio Button and Radio Group Views, Progress Bar View, Auto Complete Text View.

Advanced Views: Time Picker View and Date Picker View, List Views, Image View, Menus, Analog and Digital View, Dialog Boxes.

Displaying Pictures & Menus with Views: Image View, Gallery View, Image Switcher, Grid View - Creating the Helper Methods, Options Menu, Context Menu.

UNIT-V

Location Based Services: Obtaining the Maps API Key, Displaying the Map, Zoom Control, Navigating to a specific location, Adding Marker, Geo Coding and reverse Geo coding

Storage: Store and Retire data's in Internal and External Storage, SQLite, Creating and using databases

PRACTICAL EXERCISES

1. Installation of Android Virtual Studio.
2. Write a program to demonstrate activity (Activity Life Cycle).
3. Write a program to demonstrate different types of layouts.
4. Write a program to implement simple calculator using text view, edit view, option.
5. Write a program to demonstrate photo gallery.
6. Write a program to demonstrate Date picker and time picker.
7. Write a program to send e-mail.
8. Write a program to demonstrate web view to display website.

9. Write a program to display map of given location/position using map view.
10. Write a program to store and fetch data from SQL life database.

RECOMMENDED BOOKS

1. Beginning Android 4 Application Development by Wei-Meng Lee; Wiley India.
2. Android Apps for Absolute Beginners by Jackson; Apress.
3. Mobile Computing by Asoke K Talukder, Hasan Ahmed, Roopa R Yavagal; Tata McGraw Hill.
5. Mobile communications Jochen Schiller; Pearson Education.
6. E-books/e-tools/relevant software to be used as recommended by AICTE/HSBTE/NITTTR.

RECOMMENDED WEBSITES

1. <http://swayam.gov.in>

INSTRUCTIONAL STRATEGY

This is hands on practice based subject and topics taught in the class should be practiced in the Lab regularly for development of required skills among the students. This subject contains five units of equal weightage.