IT-2110: ANDROID MOBILE APPLICATION DEVELOPMENT

Cuyahoga Community College

Viewing: IT-2110 : Android Mobile Application Development

Board of Trustees:
December 2021

Academic Term:
Fall 2022

Subject Code
IT - Information Technology

Course Number:
2110

Title:
Android Mobile Application Development

Catalog Description:
Introduction to mobile development using the Android Software Development Kit (SDK). Focuses on the skills required to design, develop and publish applications for the Android platform. Covers the fundamentals of Android application development including designing an application, implementing specific framework components, and handling user interaction. Students are required to have a machine capable of downloading, installing, and running the latest version of Android Studio.

Credit Hour(s):
3

Lecture Hour(s):
2
Lab Hour(s):
2

Requisites

Prerequisite and Corequisite
IT-2650 Java Programming.

Outcomes

Course Outcome(s):

Design, develop and create an Android application using the Android Software Development Kit (SDK).

Objective(s):

1. Discuss the use of Android Studio with the Android SDK.
2. Demonstrate how to run and debug applications using the DDMS.
3. Configure and manage an application's settings.
4. Discuss techniques for managing permissions.
5. Design a user-friendly Android Application.
6. Discuss the need to design for accessibility for all users.
7. Develop a help screen for an application.
8. Demonstrate an understanding of advanced mobile platform features.

Course Outcome(s):

Test and prepare an Android Mobile app for publishing.

Essential Learning Outcome Mapping:

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):

1. Prepare and test a release candidate build.
2. Test a signed application.
3. Discuss methods for selling on Google Play.
4. Discuss methods for publishing android applications.

Methods of Evaluation:

A. Participation and discussion

B. Online and/or scholarly research

C. Written reports

D. In-Class demonstration

E. Computer lab projects

F. Online quizzes

G. Tests

Course Content Outline:

1. Introduction to Android Fundamentals
    a. Introduction to the Android
    b. Use Android Studio with the Android SDK
    c. Running and Debugging Applications
2. Android Development Tools
    a. Android Documentation
    b. Debugging Applications
    c. Using the Android Emulator
3. Building Android Applications
    a. Designing an Android Application
    b. Using Application Context
    c. Working with Activities
    d. Working with Intents
    e. Working with Dialogs
    f. Logging Application Information
4. Managing Application Resources
    a. Application and System Resources
    b. Working with Simple Resource Values
    c. Working with Layouts
    d. Working with Files
5. The Android Manifest File
    a. About the Android Manifest File
    b. Configuring and Managing Application Settings
    c. Manifest File Activities
    d. Managing Permissions
6. Implementing a Splash Screen
    a. Designing a Splash Screen
    b. Implementing a Splash Screen Layout
7. Implementing a Main Menu
    a. Designing a Main Menu Screen
    b. Implementing a Main Menu Screen Layout
    c. Working with the ListView Control
8. Developing Help Screens
    a. Designing a Help Screen
    b. Implementing the Help Screen
9. Working with Files
    a. Working with Files
10. Collecting User Input
    a. Designing a Settings Screen
    b. Implementing a Settings Screen Layout
    c. Using Common Form Controls to accept User Input

      d. Saving Form Data
      e. Working with Activity Dialogs
      f. DatePickerDialog
      g. Custom Dialogs
11. Adding Application Logic
      a. Designing a Game Screen
      b. Implement a Game Screen Layout
      c. Working with ViewSwitcher Controls
      d. Adding Logic
12. Adding Location-Based Services
      a. Designing the Favorites Place Feature
      b. Implement the Framework for the Favorite Place Feature
      c. Using Location-Based Services
      d. Using Geocoding Services
      e. Working with Maps
13. Adding Network Support
      a. Design a Network Application
      b. Developing a Network Application
      c. Accessing Network Services
14. Testing Android Application
      a. Testing Best Practices
15. Building an Application
      a. Preparing a Release Candidate Build
      b. Testing the Application Release Candidate
      c. Packaging and Signing an Application
      d. Testing a Signed Application
16. Publishing an Application to Google Play
      a. Selling on Google Play
      b. Android Application Publishing
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Resources

Griffiths, D., & Griffiths, D. (2017) *Head first Android development: A brain-friendly guide*, O'Reilly Media, Inc.

Phillips, B., Stewart, C., Marsicano, K. (2019) *Android Programming: The Big Nerd Ranch Guide*, Big Nerd Ranch Guides.

Horton, J. (2019) *Android Programming with Kotlin for Beginners*, Packt Publishing.

Google. *Android Developer*, https://developer.android.com/

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