



Unit:
Mobile App Development

Mobile App Development Assignment:
Building a Task Management App

[Cycle] [Year]

Important notes

- Please refer to the *Assignment Presentation Requirements* for advice on how to set out your assignment. These can be found on the NCC Education website. Hover over 'About Us' on the main menu and then navigate to 'Policies and Procedures' then scroll to the 'Student Support' area.
- You **must** read the NCC Education document *Academic Misconduct Policy* and ensure that you acknowledge all the sources that you use in your work. These documents are available on the NCC Education website. Hover over 'About Us' on the main menu and then navigate to 'Policies and Procedures' then scroll to the 'Student Support' area.
- You **must** complete the *Statement and Confirmation of Own Work*. The form is available on the NCC Education website. Hover over 'About Us' on the main menu and then navigate to 'Policies and Procedures' then scroll to the 'Student Support' area.
- Please make a note of the recommended word count. You could lose marks if you write 10% more or less than this.
- You must submit a paper copy and digital copy (on disk or similarly acceptable medium). Media containing viruses, or media that cannot be run directly, will result in a fail grade being awarded for this assessment.
- All electronic media will be checked for plagiarism.

Scenario

Project Overview:

You are tasked with developing a task management mobile application for Android devices. The app should allow users to create, edit, and delete tasks, set deadlines, save task locations, and prioritise tasks based on urgency. The app also allows users to register and log in via the app. All the data will be saved in a MySQL Server Database via a PHP-based web service. Additionally, the app should have a user-friendly interface and intuitive navigation.

Task 1 – 15 Marks

Understanding the Scope and Position of Mobile Apps

a) Key Characteristics of Mobile Apps

Discuss the essential features and functionalities commonly found in mobile applications, such as offline accessibility, push notifications, and touch-based interfaces.

b) Scope and Limitations

Evaluate the potential scope of mobile apps in various industries **and** discuss the limitations, including device compatibility, screen sizes, and hardware constraints.

c) Developing for Multiple Platforms

Analyse the challenges **and** strategies for developing apps that are compatible with multiple platforms, such as iOS and Android.

Task 2 – 15 Marks

Understanding Development Architectures, Platforms, Languages, and Tools

a) Key Characteristics of Native Apps

Explain the advantages and disadvantages of developing native apps, including performance optimisation and access to platform-specific features.

b) Key Characteristics of Cross-Platform Development Frameworks

Compare popular cross-platform development frameworks like React Native and Xamarin, highlighting their features and limitations.

c) Current Trends in Development Tools

Summarise the latest trends in mobile app development tools, including integrated development environments (IDEs), version control systems, and automated testing frameworks.

d) Native vs. Cross-Platform Approaches

Evaluate the relative merits of native and cross-platform development approaches for developing the task management app, considering factors like time-to-market, performance, and maintainability.

Task 3 – 15 Marks

Planning and Designing the Mobile Application

a) SDLC and Mobile Apps

Explain how the Software Development Life Cycle (SDLC) applies to mobile app development, including stages like requirements analysis, design, implementation, testing, and deployment.

b) Specification and Design

Employ appropriate methods to specify **and** design the task management app, considering user requirements, user interface design principles, and usability guidelines.

Task 4 – 40 Marks

Developing Application Functionality

a) Using Android Studio

Install **and** utilise Android Studio as the primary IDE for developing the task management app, including setting up the project, creating layouts, and writing code.

b) User Interface Elements

Implement common user interface elements like RecyclerView, FloatingActionButton, and Geolocation components to construct the application interface.

c) Database

Create a Database using MySQL to store and retrieve application data such as user data, task data etc.

Task 5 – 15 Marks

Employing Object-Oriented Technique

a) Object Orientation in Kotlin and Android

Discuss how Kotlin and Android utilise Object-Oriented Programming (OOP) principles like encapsulation, inheritance, and polymorphism to enhance code quality and development productivity.

b) Inheritance Usage

Make appropriate use of inheritance in designing and coding the task management app, demonstrating how it facilitates code reuse and maintainability.

Submission requirements

- The completed task management app project along with its source code.
- A written report addressing the assessment criteria outlined above.
- The word count for the word-processed report is **1500** words.
- Diagrams and materials associated with the tasks above should be presented in a Word-processed document.
- All references and citations must use the Harvard Style.

Deadline

[Insert Deadline Date]

Candidate checklist

Please use the following checklist to ensure that your work is ready for submission.

Have you read the NCC Education document *Academic Misconduct Policy* and ensured that you have acknowledged all the sources that you have used in your work?

Have you completed the *Statement and Confirmation of Own Work* form and attached it to your assignment? **You must do this.**

Have you ensured that your work has not gone over or under the recommended word count by more than 10%?

Have you ensured that your work does not contain viruses and can be run directly?