



Mobile Application Development
Higher National Diploma in Software Engineering 23.1F
Assessment 4 – Project Report

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1. Acknowledgement

I would like to express my sincere appreciation to Ms. P.D.C. Ranaweera, our highly regarded lecturer for the Mobile Application Development module at the National Institute of Business Management. The user's instruction, experience, and constant support were crucial in shaping our comprehension of mobile application development concepts, ultimately leading to the success of this project. I am deeply appreciative of the information and expertise shared by Ms. Ranaweera, which enabled us to effectively negotiate every aspect of this project with assurance and skill.

I would like to offer my sincere appreciation to my dedicated teammates for their essential contributions and unwavering commitment during the project. The combined efforts, shared passion, and collective resolve played a crucial role in successfully overcoming obstacles and delivering a mobile application of exceptional quality. This expedition has proven to be an immensely enlightening endeavor for each of us, and I am appreciative of the chance to collaborate with such exceptionally skilled individuals.

Upon contemplation of this endeavor, we acknowledge the significant worth of the knowledge gained and the expertise developed. We are enthusiastic about utilizing these experiences in our future pursuits, having full assurance in our capacity to utilize our recently acquired knowledge and expertise to address novel difficulties and attain even bigger accomplishments.

2. Abstract

This report contains information about the building of an Android app that was made to make the process of signing up for short courses easier for MindCraft Academy students. The Java-based app is designed to meet the needs of three different types of users: registered MindCraft students, guest users, and administrators. It provides an easy-to-use platform that makes it easier to sign up for classes, browse courses, and see where people are located. It also gives administrators full control over courses, users, and deadlines.

3. Introduction

This is a mobile application designed and developed to MindCraft Academy to register students for their newly introducing short courses. By accessing this mobile application students can go through the courses offered by MindCraft Academy.

This application displays course details such as course name, description, fees, branches, duration, starting dates, closing dates and etc.

This application has 3 kinds of users' accounts such as Admin (Administrator), Student (Registered) and Guest. Admin can add courses and update details to the system, students can get registered and access to the courses while guest account can only view courses with their offered locations of branches.

This application also integrated with Google Maps for guests to view the branches of the offered course. This makes the guests much more comfortable in selecting the appropriate branch offered by MindCraft Academy.

4. System Design

The mobile application's system design has several components, such as user interface design, database administration, map integration, and image upload capability. These components collaborate to deliver a smooth and instinctive user experience. Below is a concise summary of the system design.

1. User Interface Design (UI/UX):

Interface Design has given special attention in developing this application. UI designs are essential for improving user experience and increasing user engagement. Efficient user interface (UI) designs give priority to simplicity, intuitiveness, and visual attractiveness in order to guarantee smooth interaction with digital products. UI designs aim to enhance usability and increase user happiness by employing strategic layout, intuitive navigation, cohesive branding, and adaptable features.

2. Database Management:

An SQLite database is utilized in the system design of the mobile application to efficiently handle and store important data items. The database architecture consists of multiple essential tables, each fulfilling unique functions inside the application:

The User Table functions as a storage for user data, containing important information such as the user's name, email address, physical address, and user type designation, which differentiates between registered users and administrators.

The branch table maintains detailed information about each branch to enable easy browsing and course selection based on geographical proximity. This encompasses the names of the branches, their exact geographical positions, and relevant contact information for each branch of the institute.

The course table serves as a centralized database for all course-related information, including the course name, fees, duration, starting dates, and maximum participant capacity for each course offering.

The purpose of the student course table is to establish a connection between individual users and the courses they have enrolled for, allowing for precise tracking and management of course registrations. This table facilitates the effective administration of registered courses and user-specific course information.

The verification code table is a crucial part of the registration process. It is used to hold the verification codes that are used during user registration. This guarantees the safe verification of user identification and confirms user identities throughout the registration procedure.

By organizing the SQLite database with these fundamental tables, the mobile application gains the ability to effectively manage user data, course registrations, and branch information. This enables smooth user experiences and efficient administration of course offers.

3. Google Map Integration:

Integrating Map GPS functionality into the mobile application allows users to effortlessly access and view branch locations on Google Maps directly from the application interface. This feature greatly improves the overall user experience by allowing users to easily visualize the geographic distribution of branch sites. By utilizing the integration of Map GPS, customers can easily locate and choose the closest branch while signing up for courses, thus enhancing convenience, accessibility, and user happiness. This connection optimizes the course registration process by offering customers up-to-date location information, enabling well-informed decision-making, and improving the general usability of the application.

5. Results

The finished mobile application has successfully met the specified objectives established by the institute, delivering a seamless and efficient user experience for course registration and management. The following essential features and results have been accomplished:

1. **User Authentication and Roles:** The program facilitates robust user authentication, enabling users to log in as either administrators or regular users. Each user category is allocated distinct responsibilities and permissions, with administrators being given authorization to utilize course administration functionalities, while registered users can effortlessly enroll in courses.
2. **Course Registration and Management:** Users have the ability to retrieve detailed information on courses, including important details such as course names, costs, durations, starting dates, registration deadlines, and the locations where the courses are offered. Registered users can easily navigate among courses of their choice, include them in their enrollment list, and proceed with the registration procedure in a user-friendly manner.
3. **Promotion Code Discounts:** The application includes functionality for promotion codes, allowing customers to apply discounts while registering for courses. Users can receive discounts on course prices by inputting valid promotion codes, which improves the affordability and accessibility of the courses for participants.
4. **Email Confirmations:** After successfully registering for a course, users promptly receive email confirmations as a means of verifying their registration. This feature guarantees that users receive immediate notifications regarding their registration progress and offers them a simple record of their course registrations for future reference.
5. **The inclusion of map GPS capabilities** enhances the user experience by allowing convenient access to information about the location of branches. Users can easily access a map that displays neighboring branches, allowing them to make well-informed selections when choosing the most convenient branch for attending a course based on its vicinity.

Ultimately, the application's focus on the needs and preferences of the user, its strong and reliable features, and its smooth combination of different elements have greatly improved the institute's course registration procedure. Users may easily use the application, rapidly register for classes, and receive email notifications to stay updated, resulting in a higher level of user satisfaction and overall experience.

6. Discussion

The creation of the mobile application for course registration was a collaborative effort that includes team members with expertise in specific areas such as user interface design, database management, and feature implementation. The collaborative approach played a crucial role in guaranteeing a thorough development process, where all essential elements of the application were handled with accuracy and effectiveness.

An important obstacle faced throughout the development process was the incorporation of map GPS capabilities. This required the inclusion of location-based services to allow users to see branch locations and choose the closest one when registering for courses. The successful implementation of this capability required the development and design teams to closely collaborate in order to overcome technical challenges and effectively integrate it with the application's user interface.

Moreover, prioritizing the optimization of the application for performance became a crucial area of focus. This undertaking required careful refinement of the coding, strategic utilization of database indexing techniques, and prudent allocation of system resources to guarantee optimal performance. Through the identification and resolution of performance bottlenecks and the optimization of resource use, the application achieved a smooth and prompt user experience.

Notwithstanding these obstacles, the application effectively accomplishes its goals and greatly improves the institute's course registration procedure. Users gain advantages from a user-friendly course registration system, complete access to detailed course information, prompt alerts, and the option to choose preferred locations for attending courses. The intuitive interface, together with effective course selection and communication channels, enhances the entire user experience.

Furthermore, the integration of supplementary attributes such as email verifications, promotional code reductions, and image submissions enhances simplicity and functionality for customers. These characteristics were deliberately incorporated to conform to the institute's specifications and improve overall user contentment.

Ultimately, the development team's cooperative endeavors, along with efficient approaches to resolving issues, resulted in the triumphant release of a mobile application that not only fulfills the institute's requirements but also greatly enhances the course registration procedure for both students and administrators.

7. References

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