BSc in management information systems

Faculty of Computing

SE 303.3 Mobile application development

20.3 Batch

Group 08

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Introduction

Student learning management system is a mobile application that is develop to provide students with access to a range of educational resources, tools, and services through their mobile devices. With the app, students can view information about their classes, assignments, grades, and attendance records, as well as news, events, and library catalogs.

The mobile application can be downloaded from the app store and installed on Android or iOS devices. To access the portal, students can use their student ID and password. Users can navigate quickly between all available features with the user-friendly interface of the mobile application. It allows students to stay connected with their educational institution, no matter where they are, at all times with the student portal mobile application. Using alerts and notifications, students will never miss an important deadline, due date, or change in their class schedule.

In summary, the student portal mobile app is a convenient and efficient way for students to get access to a variety of educational resources and maintain contact with their academic institutions from anywhere, anytime.

The importance of a student learning management system on a mobile application

- Simple Access:
  With a mobile application, students can use their mobile devices to access academic data and resources at any time and from any location. They can now obtain essential academic material without depending on desktop computers or being physically present on campus.

- Communication between students and educational institutions is improved through mobile applications, which are more practical and effective. Students can use the apps messaging tools to get in touch with teachers and classmates, and they can receive push notifications about forthcoming deadlines, new course materials, or other essential information.

- Time management:
  By giving students access to their class schedules, assignments, and due dates, a mobile application for student portals can help them manage their time more efficiently. They can keep on top of their schoolwork and meet deadlines by doing this.

- Increased Engagement:
  By giving students access to resources and tools that encourage involvement and collaboration, a mobile application can enhance student engagement. Students can use discussion boards, course materials, and internet resources, for instance, to improve their educational experience.

- Personalization:

This mobile applications can be customized to each individual students needs in order to make it simpler for them to access the knowledge and tools most important to their academic progress.

Project scope

In order to create a mobile application for a student portal, the following components may be included:

- User authentication:

Students can access their personal accounts securely through a secure login system.

- User profile management:

Provide students with the ability to update and manage their personal information, contact information, and privacy preferences.

- Coursework management:

Grades and attendance records can be tracked by students.

Students can view, submit, and review assignments, quizzes, and exams.

Provide course schedules, syllabuses, and materials to students.

- Personalization and notification:

Notify students about important updates, deadlines, and changes in course schedules through push notifications.

Provide students with the option to customize their app settings, such as themes, notifications, and language.

- Security and privacy:

Ensuring that student data is protected, and data protection regulations are followed.

- Technical considerations:

Make sure the app is compatible with different screen sizes, resolutions, and orientations.

Make a mobile application for iOS and Android that supports popular platforms.

Issues faced during the implementation and how to overcome them in the mobile application.

Various problems can occur when this mobile application is being implemented. Here are some typical problems and some solutions to them.

- **Platform compatibility:** The technological specifications and design standards for various mobile platforms (such as iOS and Android) vary. We Considered using cross-platform development frameworks, which permit code exchange between platforms, to remedy issues, such as React Native or Flutter.

- **User Interface and User Experience (UI/UX):** Low adoption rates and user discontent can be caused by poor UI/UX. To get around this, learned user preferences and expectations by conducting user research and testing. To continually enhance the user experience, iterate on the design in response to customer feedback.

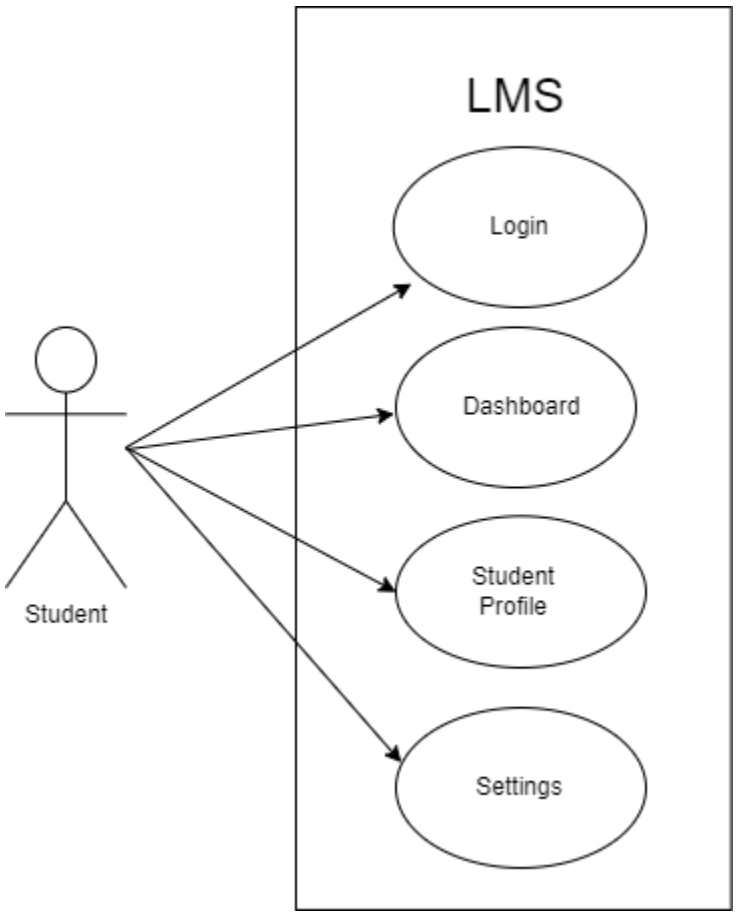
- **Resources constraints:** There were difficulties due to the lack of resources and time. We prioritize features and functionalities carefully based on their significance and impact to reduce these restrictions and adopted agile development approaches to guarantee ongoing delivery and iterative development.

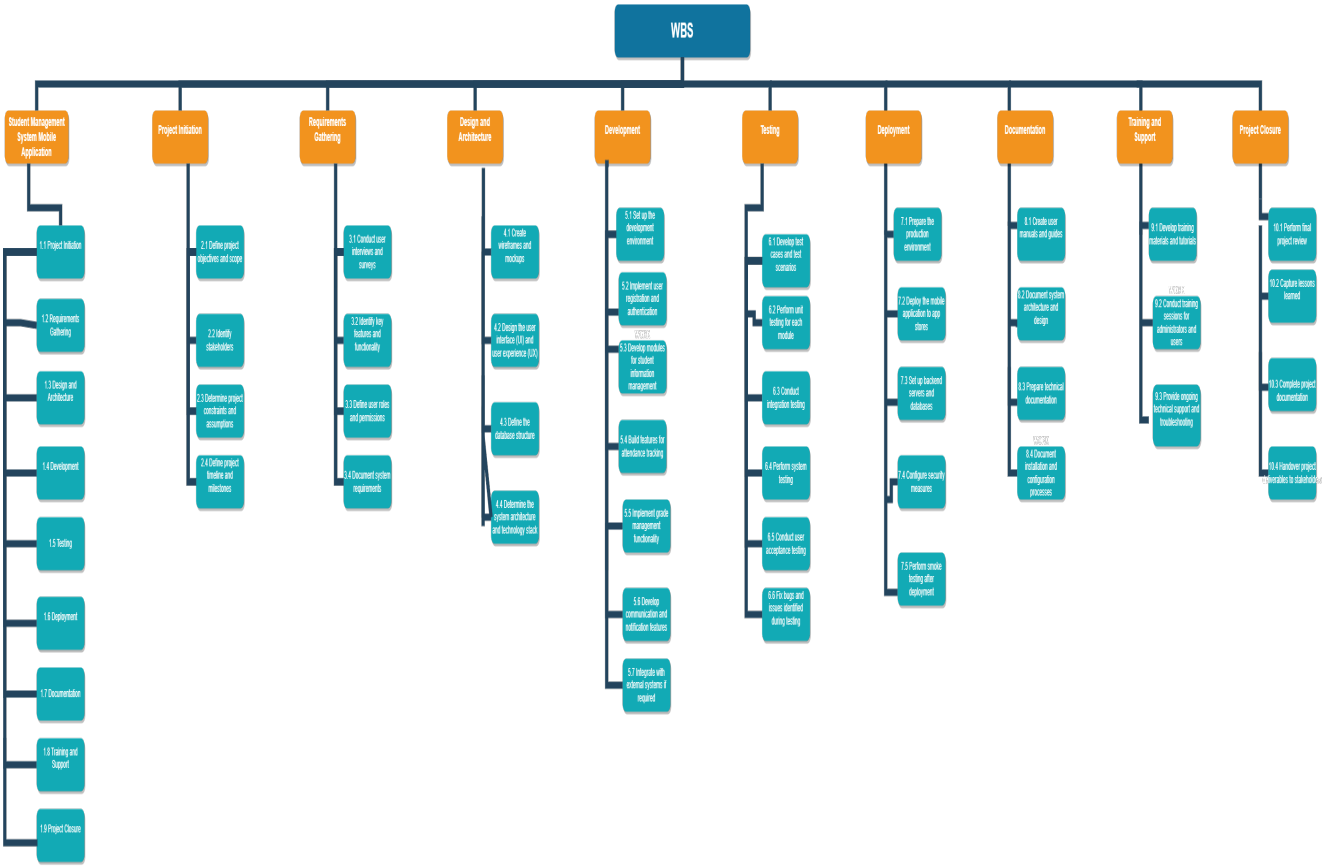
- **Security and data privacy:** It is crucial to guarantee user data protection. used security coding techniques such as input validation, encryption, and secure data storage. implemented user authentication technologies, such as multi-factor authentication and safe password storage.

- **Performance optimization:** Mobile applications must function well across a range of platforms and network setups. Conducted comprehensive testing and profiling to locate bottlenecks to address performance concerns. Coded the application more efficiently, reduce network requests, and used caching techniques. Utilized strategies like asynchronous loading and lazy loading to improve responsiveness and shorten load times.

User case diagram, WBS

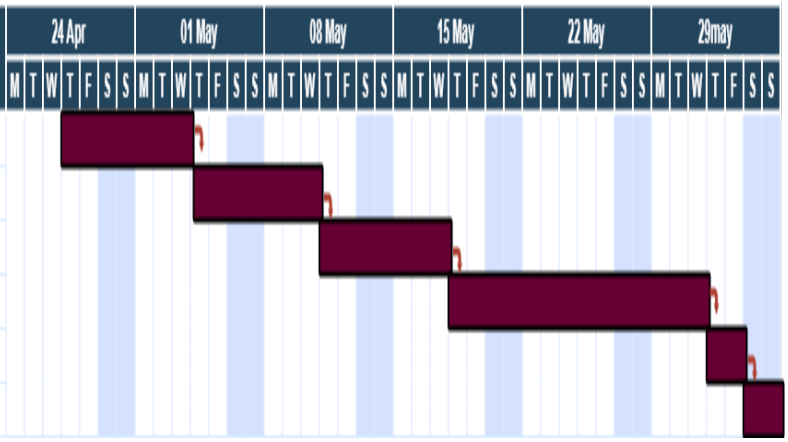
- This project is being developed using an agile methodology.


LMS
Login
Dashboard
Student Profile
Settings
Student

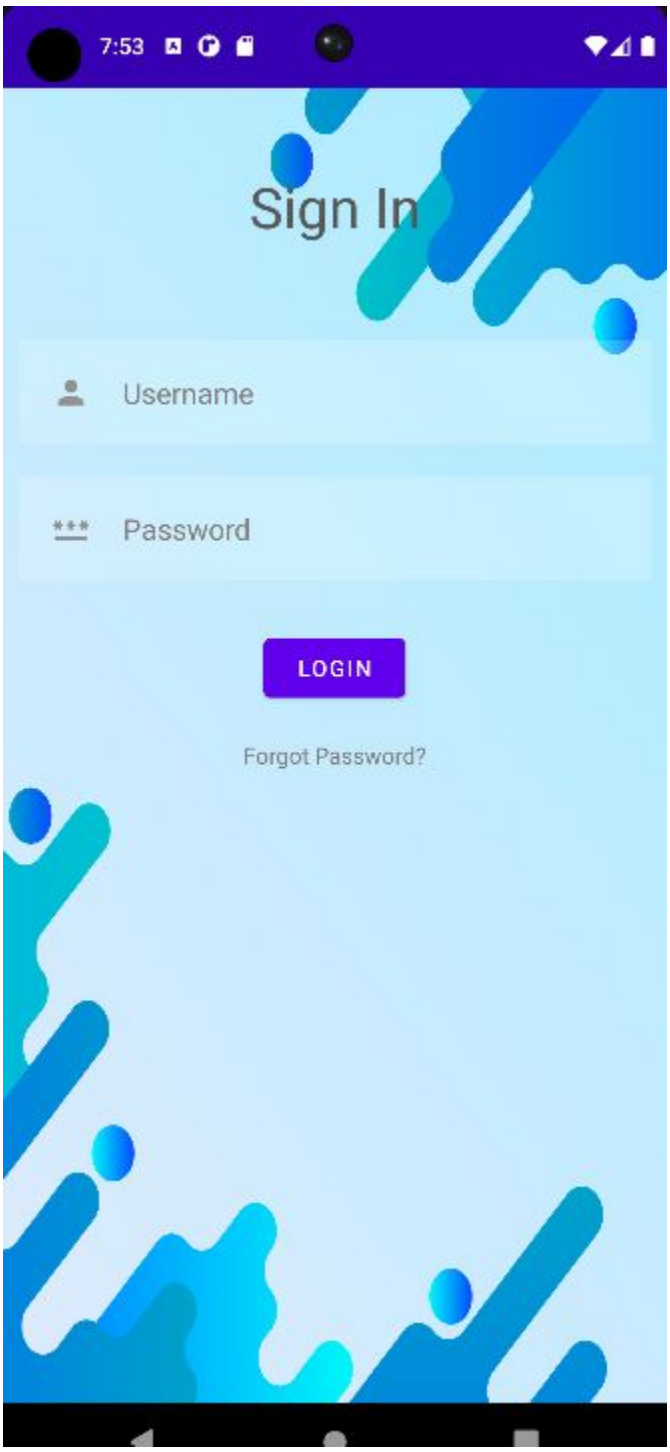

WBS
Student Management System Mobile Application
1.1 Project Initiation
1.2 Requirements Gathering
1.3 Design and Architecture
1.4 Development
1.5 Testing
1.6 Deployment
1.7 Documentation
1.8 Training and Support
1.9 Project Closure
Project Initiation
2.1 Define project objectives and scope
2.2 Identify stakeholders
2.3 Determine project constraints and assumptions
2.4 Define project timeline and milestones
Requirements Gathering
3.1 Conduct user interviews and surveys
3.2 Identify key features and functionality
3.3 Define user roles and permissions
3.4 Document system requirements
Design and Architecture
4.1 Create wireframes and mockups
4.2 Design the user interface (UI) and user experience (UX)
4.3 Define the database structure
4.4 Determine the system architecture and technology stack
Development
5.1 Set up the development environment
5.2 Implement user registration and authentication
5.3 Develop modules for student information management
5.4 Build features for attendance tracking
5.5 Implement grade management functionality
5.6 Develop communication and notification features
5.7 Integrate with external systems if required
Testing
6.1 Develop test cases and test scenarios
6.2 Perform unit testing for each module
6.3 Conduct integration testing
6.4 Perform system testing
6.5 Conduct user acceptance testing
6.6 Fix bugs and issues identified during testing
Deployment
7.1 Prepare the production environment
7.2 Deploy the mobile application to app stores
7.3 Set up backend servers and databases
7.4 Configure security measures
7.5 Perform smoke testing after deployment
Documentation
8.1 Create user manuals and guides
8.2 Document system architecture and design
8.3 Prepare technical documentation
8.4 Document installation and configuration processes
Training and Support
9.1 Develop training materials and tutorials
9.2 Conduct training sessions for administrators and users
9.3 Provide ongoing technical support and troubleshooting
Project Closure
10.1 Perform final project review
10.2 Capture lessons learned
10.3 Complete project documentation
10.4 Handover project deliverables to stakeholders

Gantt chart

	Task Name	Duration	Start	ETA
1	Planning	7 days	27.04.23	01.05.23
2	Analysis	7 days	2.05.23	9.05.23
3	Design	7 day	10.05.23	17.05.23
4	Coding	14 days	18.05.23	1.06.23
5	Testing	2 day	2.05.23	4.06.23
6	Implementation	2 days	5.06.23	7.06.23

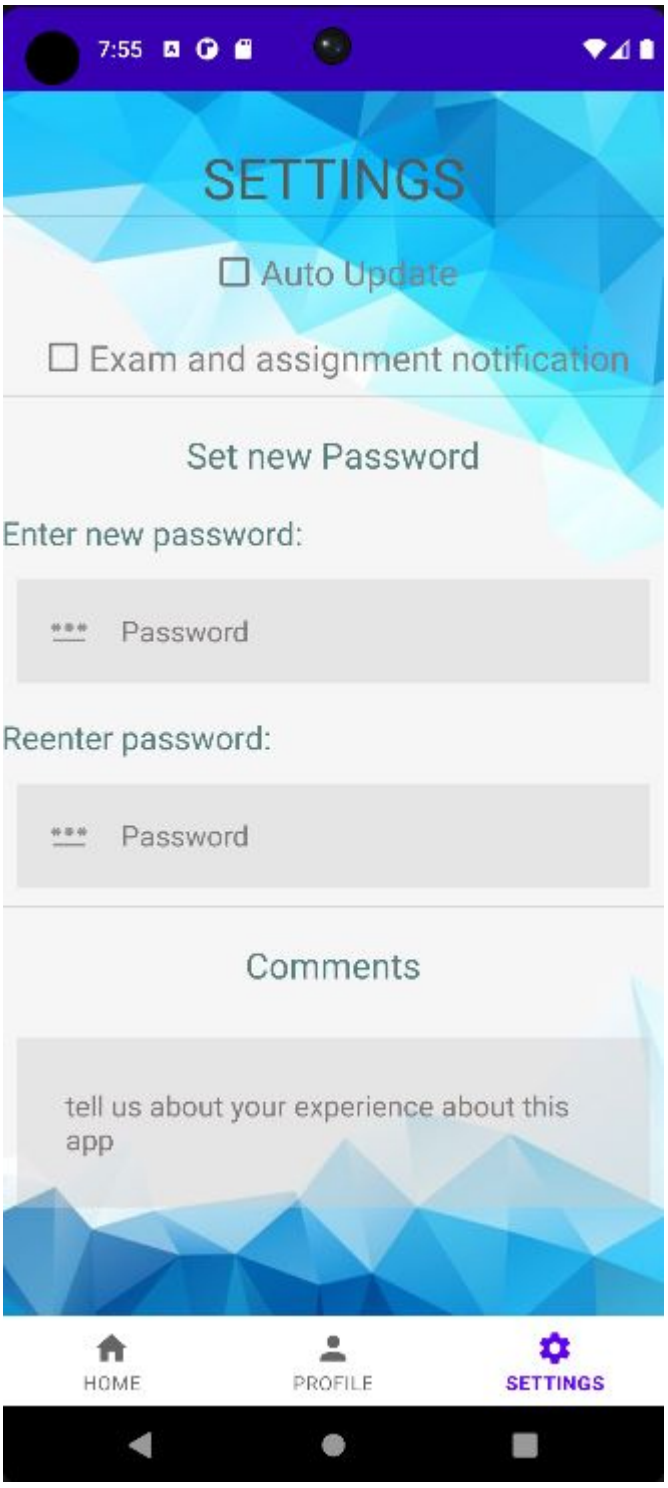


Declaration of API



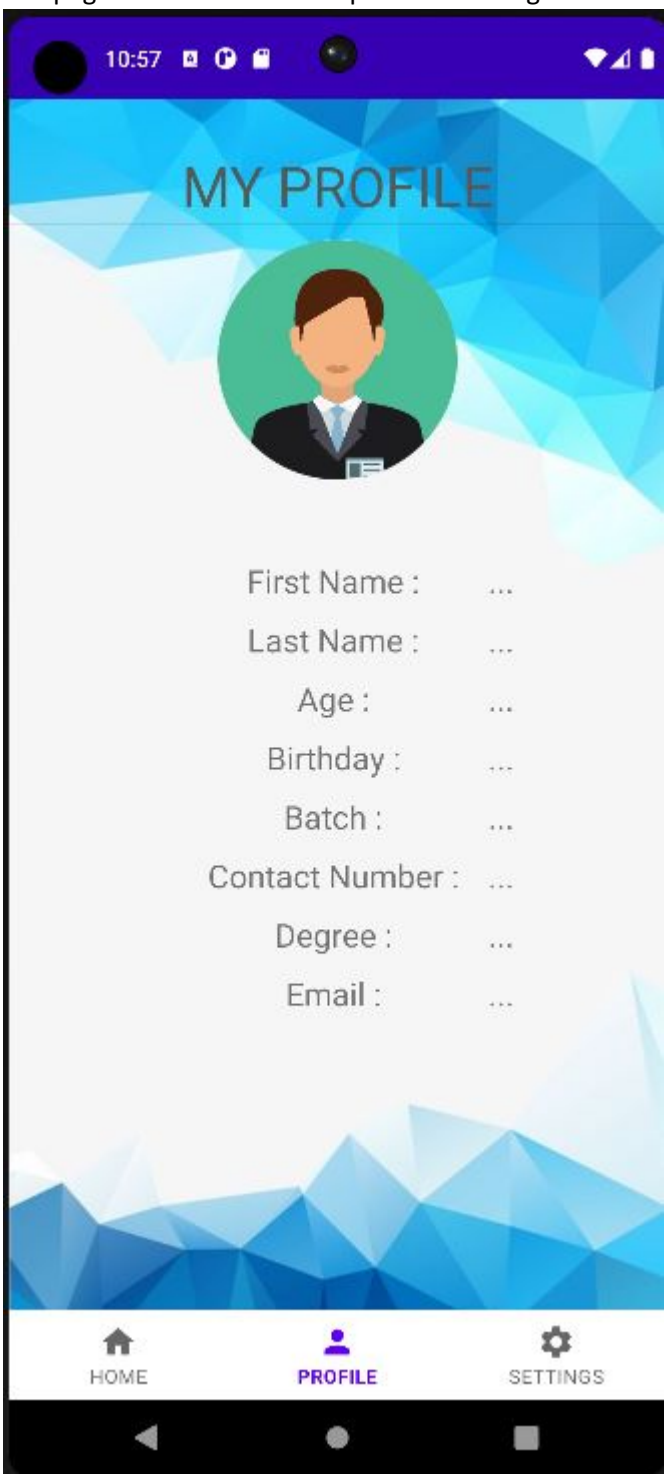
Any form of secured application will often have a login page, which is frequently used online to authenticate users before displaying the secured pages of web apps. As above you can see our application trying to confirm user login info via using user name and password.

Home - This is the calander and reminder interface. Also user can acess their modules from this page.



Profile - User's profile and each details of user can attached to this page more easily than current web page. Settings – user can change settings from

this page and also the developer have been given an comment section to comment their experience.



Summary

In conclusion, a student learning management system application acts as an easy-to-use platform for managing their academic activities. User authentication, user profile management, course management, access to library resources, information on campus services, personalization and notifications, security and privacy safeguards, analytics and reporting capabilities, and technical considerations for mobile platforms are all included in the project scope for such an application.

Common problems that can occur during the development of a mobile application include platform compatibility, user interface and user experience (UI/UX) design, interaction with existing systems, performance optimization, etc. Adopting cross-platform development frameworks, conducting user research and testing, enhancing performance through testing and code optimization, and putting in place thorough quality assurance processes are some strategies to address these issues.

This mobile application can offer students a seamless and user-friendly experience, facilitating access to course materials, communication with peers and instructors, and effective management of their academic journey, by successfully addressing these challenges and putting the defined project scope into practice.