IN PARTNERSHIP WITH PLYMOUTH UNIVERSITY

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Module Code: PUSL2023	Module Name: Mobile App Development
Coursework Title: coursework	
Deadline Date: 18-05-2023	Member of staff responsible for coursework: Mr. pulasthi Gunawardena
Programme: Bsc (Hons) Computer Science, Bsc (Hons) Software Engineering	

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Group work: please list all names of all participants formally associated with this work and state whether the work was undertaken alone or as part of a team. Please note you may be required to identify individual responsibility for component parts.

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10820271- Kirimatiye G Devanji
10818824- Walpita K Walpita
10819583- Payagala H Divyanjali
10819522- Wedikkara Munindradasa
10750001- Dhanapala Ishara

We confirm that we have read and understood the Plymouth University regulations relating to Assessment Offences and that we are aware of the possible penalties for any breach of these regulations. We confirm that this is the independent work of the group.

Signed on behalf of the group: 

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Use of translation software: failure to declare that translation software or a similar writing aid has been used will be treated as an assessment offence.

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Overall mark _____% Assessors Initials _____ Date_____

*Please delete as appropriate Sci/ps/d:/students/cwkfrontcover/2013/14

Abstraction

The LMS mobile app is a simple platform that allows for easy access and administration of instructional content. Students, teachers, and administrators can work effectively on tasks such as course administration, material distribution, collaboration, and assessment monitoring.

Users may log in with their unique credentials or create new accounts using the app's secure authentication. Data protection and proper access levels are ensured by user roles and permissions.

Users may explore available courses, enrol in them, and access specific information such as instructors, curriculum, materials, and significant dates using course management services. Notifications keep consumers informed about upcoming deadlines and course progress.

The presentation of multimedia resources appropriate for mobile devices guarantees an effective learning experience. Interactive elements can help stimulate discussions, queries, and explanations.

Assessment and monitoring features make it easier to submit assignments and receive prompt responses from teachers. Throughout the course, users may track their grades and progress.

By supporting group projects, conversations, and peer-to-peer connections, the software encourages cooperation. Messaging and discussion forums promote participation and information exchange.

In conclusion, the LMS mobile app provides a full platform for users to access educational resources, participate in interactive learning, collaborate with peers, and measure academic achievement from their mobile devices.

Acknowledgement

We are grateful to everyone who helped us create this great work. Mr. Pulasthi Gunawardena deserves special recognition for aiding us in completing a perfect assignment. We would also like to thank our group members and their families for their invaluable efforts and help during the process. We collaborated to create the finest document possible.

Contents

Group members

Index number	Name	Email
10818168	Pasan Bopegamage	10818168@students.plymouth.ac.uk
10820271	Kirimatiye G Devanji	10820271@students.plymouth.ac.uk
10818824	Walpita K Walpita	10818824@students.plymouth.ac.uk
10819583	Payagala H Divyanjali	10819583@students.plymouth.ac.uk
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Introduction

Technology has transformed the way we study and gain information in the present era of digital transformation. Learning management systems (LMS) have evolved as effective tools for facilitating efficient and adaptable learning experiences. LMS mobile apps have become vital for learners, teachers, and educational institutions as mobile devices have grown in popularity. The purpose of this introduction is to offer an overview of the importance and benefits of LMS mobile applications in the sphere of education.

A learning management system (LMS) mobile application is a software programme that brings typical LMS functionality to mobile devices such as smartphones and tablets. It enables users to access educational resources, take courses, communicate with instructors and classmates, and measure their progress at any time and from any location.

The flexibility and accessibility of LMS mobile applications are two of their primary benefits. Learners are no longer restricted to a physical classroom or a set period for study. They may participate in instructional activities while travelling, making learning more convenient and adaptive to their schedules. LMS mobile applications enable learners to take charge of their learning path, whether it's examining course materials during a commute or completing assignments from a coffee shop.

Furthermore, LMS mobile applications encourage learner participation and cooperation. Learners may connect with their classmates, exchange ideas, and improve their understanding by using interactive tools such as discussion boards, chat options, and collaborative projects. Even in virtual learning environments, this fosters a feeling of community and encourages active engagement.

Instructors benefit from LMS mobile applications as well since they can administer courses, provide content, and offer comments at any time and from any location. They can quickly track student progress, provide crucial updates, and provide timely feedback, all while improving the learning experience and supporting personalised education.

LMS mobile applications are also beneficial to educational institutions since they expedite administrative processes, ease course management, and give vital statistics for performance tracking. These apps can smoothly interact with current LMS systems, allowing schools to expand their educational offerings outside of traditional classrooms and reach a larger audience.

Overall, LMS mobile applications have transformed the educational environment by providing a convenient, adaptable, and engaging platform for students, teachers, and institutions. As technology advances, the role of LMS mobile applications in supporting lifelong learning and developing unique educational experiences will become ever more important.

Features of the application

This application is mostly used by two parties.
1. Student
2. Lectures
They have distinct characteristics based on their job inside the system.

Student

1. Splash Screen
   This is the introduction screen.

2. Sign up
   Users may register for the LMS by entering their information.

3. Login
   Students can access the system by entering a valid username and password.

4. Dashboard

    - Module
    - Lecture materials
    - Exam results
    - Lecture dates and time

Lectures / Admin

1. Splash Scree

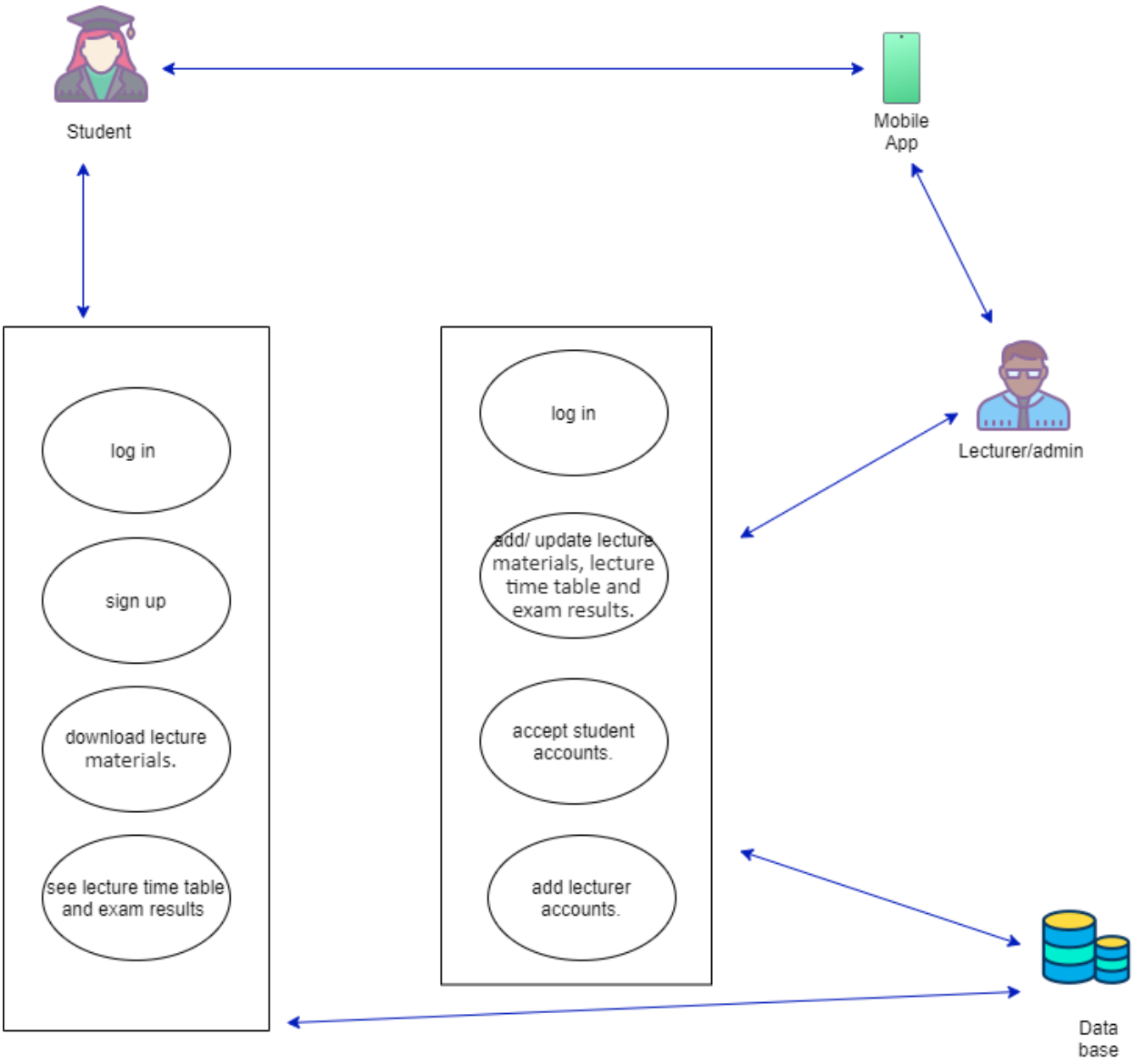
   This is the introduction screen.

2. Log in
   Log in to the system using the specified username and password.

3. Dashboard

   - Add lecture materials.
   - Add exam results.
   - Add lecture time and date.
   - Confirmed student accounts.
   - Add lectures.

High level architecture diagram.



Requirement

Functional requirements

Functional Requirements for Students:

- User Registration and Login:

  Users should be able to register and create accounts using the LMS mobile app. Users should be able to safely log in using their credentials.

- Access to Course Resources:
  Students should have access to course resources such as lectures, reading materials, multimedia content, and assignments.

- Progress Tracking:

  Students should be able to check their progress in each course, including completed modules, quizzes, assignments, and overall course completion status.

- Content Delivery:

  The app should be able to offer a variety of content kinds, including text, multimedia (videos, photos), and documents (PDFs, presentations). Course materials should be accessible and seen by users.

Functional Requirements for Lecturers:

- Course Creation and Management:

  Lecturers should be able to develop and administer courses, including adding course materials, organising modules, and setting up assignments and evaluations.

- Content Delivery:

  Lecturers should be able to upload and manage course materials including lectures, slides, multimedia content, and reading materials.

- Grade Management:

  Lecturers must be able to organise and assign grades for student assignments, quizzes, and assessments. They should also be able to provide pupil's feedback.

- Communication with Students:

  Lecturers should be able to contact with students via messaging or discussion boards to deliver instructions, answer queries, and engage in course-related conversations.

Non-Functional Requirements

- Performance:

  The app should be quick and responsive, allowing for a seamless user experience even when there are a big number of users and course content. It should have a low latency and downtime.

- Security:

  To secure user data and prevent unauthorised access, the app should utilise strong security measures. This comprises sensitive information encryption, secure authentication, and safe data storage.

- Usability and User UI:

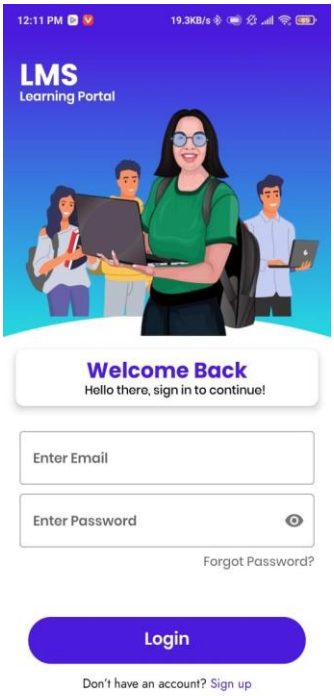
  The software should have an easy-to-navigate, intuitive and user-friendly UI. It should provide consumers clear instructions and directions. Users with impairments should be able to use the app.

- Compatibility:

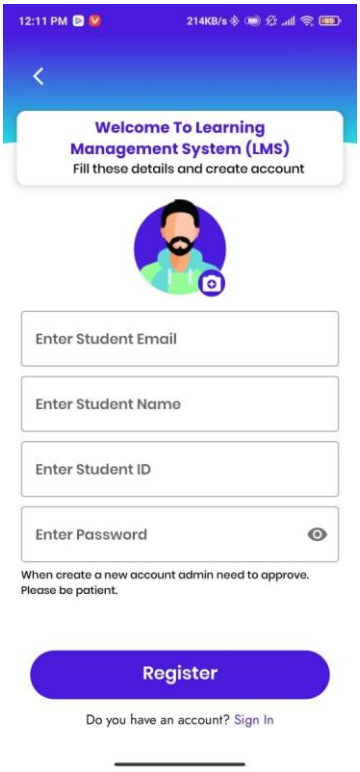
  The app should be compatible with a wide range of mobile platforms and devices, guaranteeing consistent functioning and user experience across devices.

Project screen shots

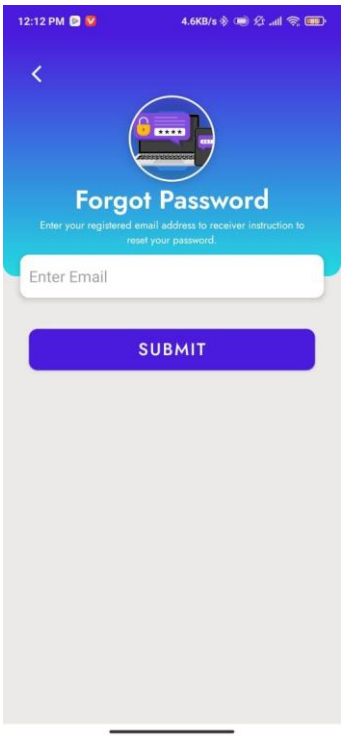
This is the welcome page of this project here we can see the get start button and sign in button. If the click on gets start button, then we can see the register page and sign in button we can see sign in page.



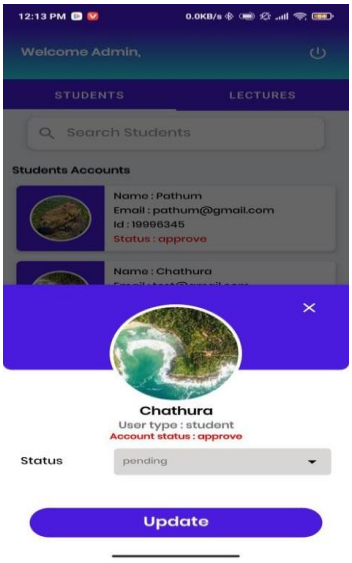
Here we can see the login page of this project. From that you can see the text box of enter your email and the text box for the password. As well as you can see the login button and if you click on the forgot password, you can see the forgot password page. There are also sign up button on this page.



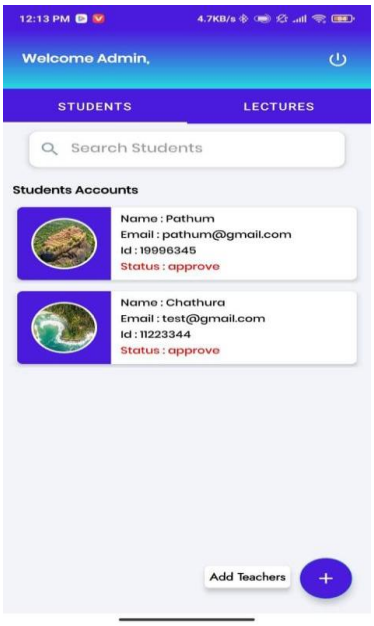
Here we can see the register page of this project and we can see the first text box for into the student email and second text box for enter the student name as well as another text box for enter student ID and last text box for the password and after filling these checks boxes then you can click on register button already you have an account you can click on sign in button .



Here you can see the forgot password page of this project and there is a text box for enter your email and after entering your email, you can click on the submit button then you can remake your password.

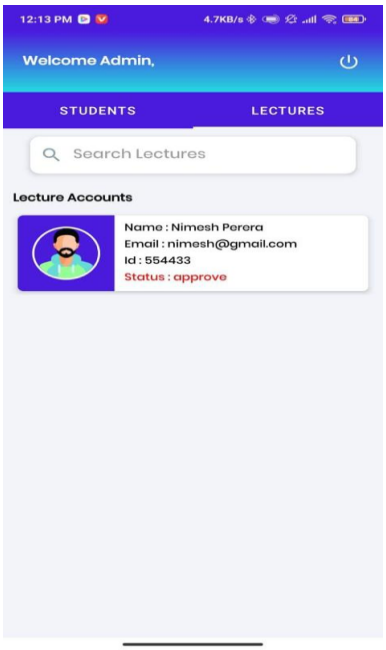


Then we are going admin page on the top we can see there are 2 tabs. first is student and other one is lectures. Then we can search the students in system using search bar. in student tab we can see students are enrolling to the system. We can see student name , email , id and status. Under clicking student details we can see additional information user type , account status , also we can update the student information.

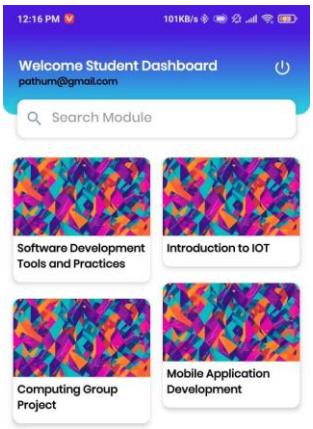


In the student tab on the bottom there is button called add teachers. We can click add teacher button to add teachers to our system.

We are clicking add teachers button it go to add lecture page. We can upload photo of a lecture. And then we can fill the form.in the form we can enter lecture email , enter lecture name , enter lecture id , enter the password and click register button.

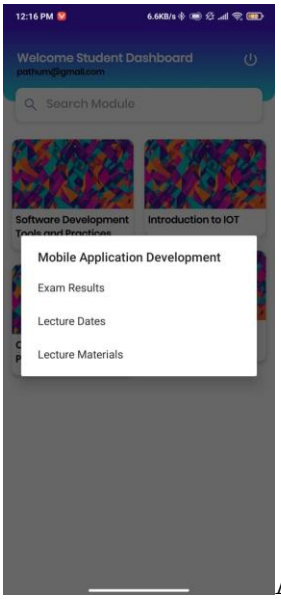


Then we are clicking register button in add lectures page we can see lectures tab current lectures are add into the system.we can see lecture name , lecture email , ad and status.

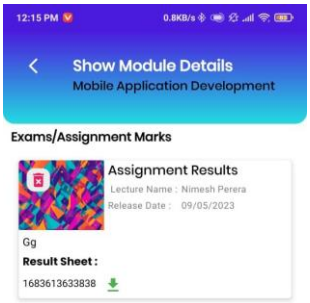


This is a student Dashboard of this project. Here we can see the email of the student. We can search for the module we need from the search bar here. The module will be displayed here. When you click on those modules, you can see the details of that module.

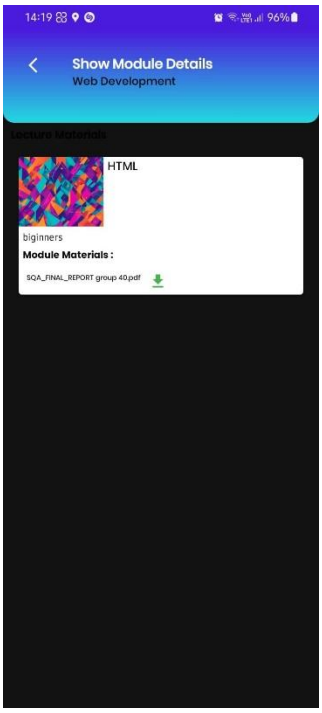
Here we can see the lecture schedule related to the lecture. From that you can see the lecturer's name, lecture date, lecture time, and lecture hall. Here, if we want to go back, we can go back from the place called show module materials.



As mentioned above, when a module is clicked, the sections are displayed like this. The section that students need to know is exam results, lecture dates, and lecture materials.

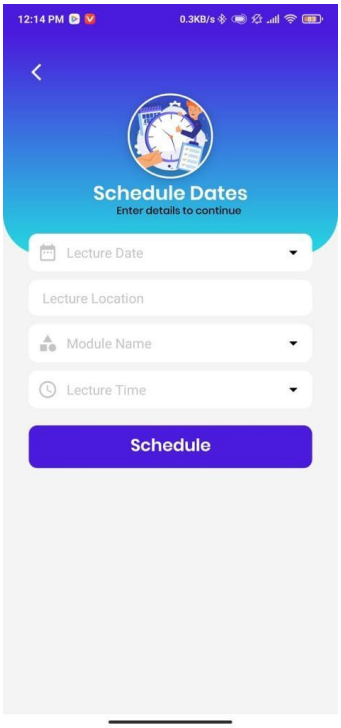


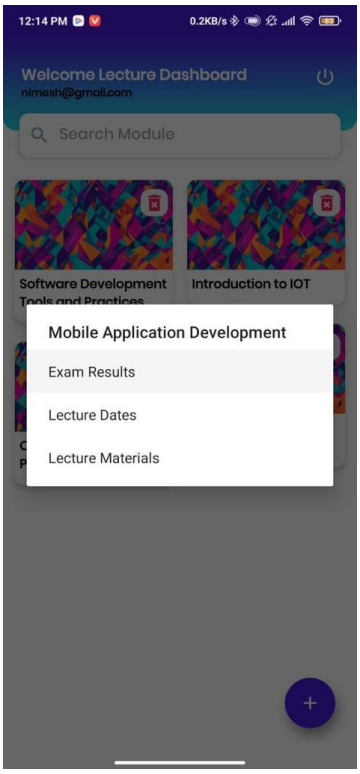
Exam results and assignment marks can be seen here. Also Lecturer's name, released date can be seen. Students can download the result sheets if they want. Here, if we want to go back, we can go back from the place called show module materials



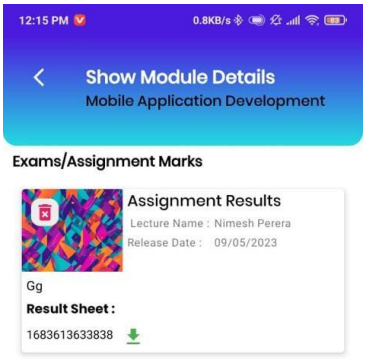
This is the lecture materials page. Here we can see lecture notes, tutorial. Students can download the lecture notes, tutorial.Here, if we want to go back, we can go back from the place called show module materials.

This page, it shows the time schedule of the lectures. Through this, there is the ability to update the date time, location (which lecture hall number the lecture will hold), the module name of the lecture, and the time duration of the lecture.





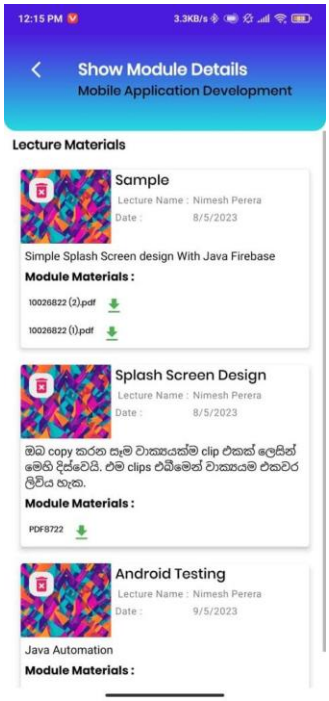
Through this page, the student has the ability to see the exam results, lecture dates that they have scheduled, and the lecture materials which have been uploaded in each module. When a student selects the module and then there is a showing of what he/she wants to do or see. Then it gives the option to see exam results, lecture dates, and lecture materials and students can select and go ahead with what he/she wants to do.

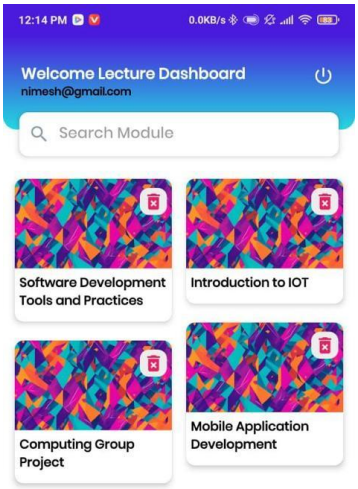


After selecting the exam results it enters the page which has included the exam results and assignment results. There is the ability to the students can view his or her exam results and download it.

When selecting the lecture schedules button of each module can see the lecture date, time, venue, and lecturer who conducts the lecture.

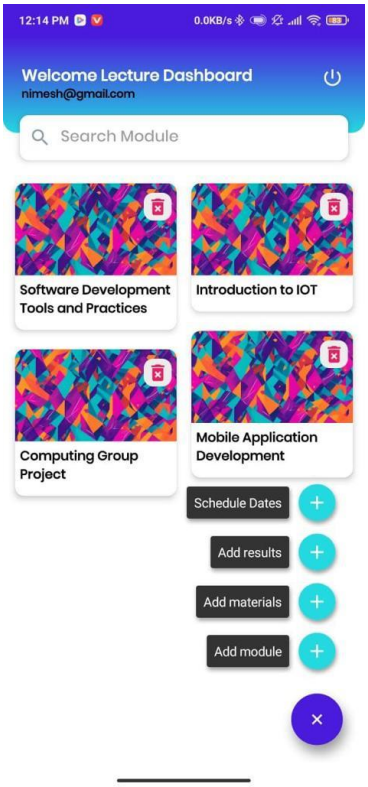
After selecting the lecture material button of the module there are all the lecture slides which have been uploaded by the lecturer and the student have the ability to download it and view it. There is ability also to view lecture slides without downloading them also.

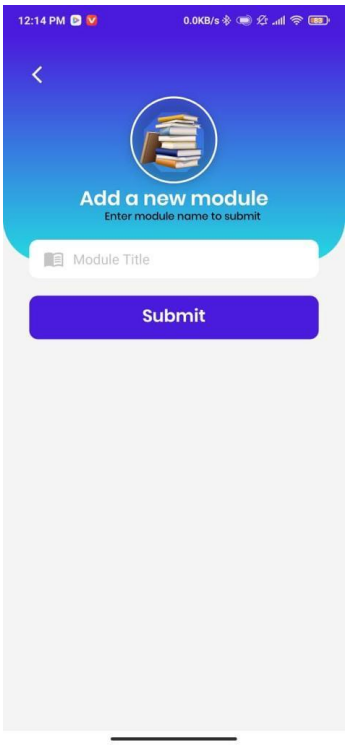




When we log the LMS we view dashboard and in there we can view several modules which have to be available for each student. In there the student could search the modules and view each module. And there is the option to delete the modules through the button in right top corner of the module.

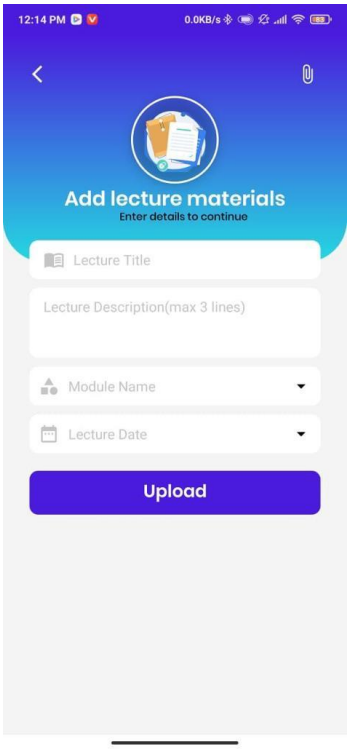
When we open the dashboard there is a plus button on the dashboard and we have the ability to click it and get some option. There are several options named add module, add materials, add results and schedule dates.

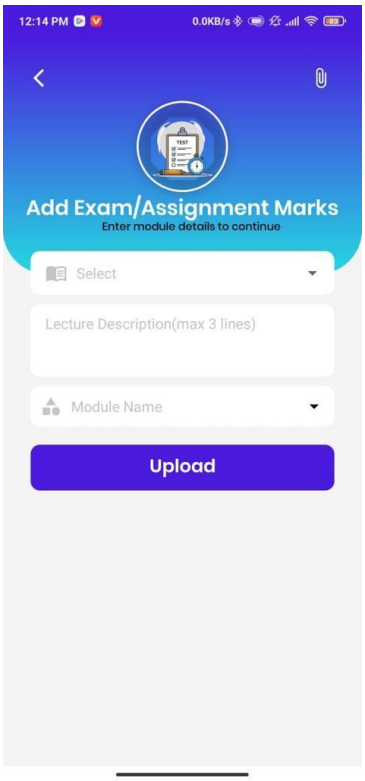




In this page there is ability to add new modules option for lecturers. When the lecturer wants to add a new module he can give a module name and pressing the submit button the dashboard will be updated by the new module.

In the lecturer materials page can have the ability to add lectures materials given the name, description, module name(which should updated the module) and the lecture date (when it will updated).After updating this details the lecturer can ability to press the button updated the module.





In this pages the lecturer can updates the assignment marks and exam results which belong each module and the lecturer and update each module given the module name and description.

Chosen technologies.

Programming languages

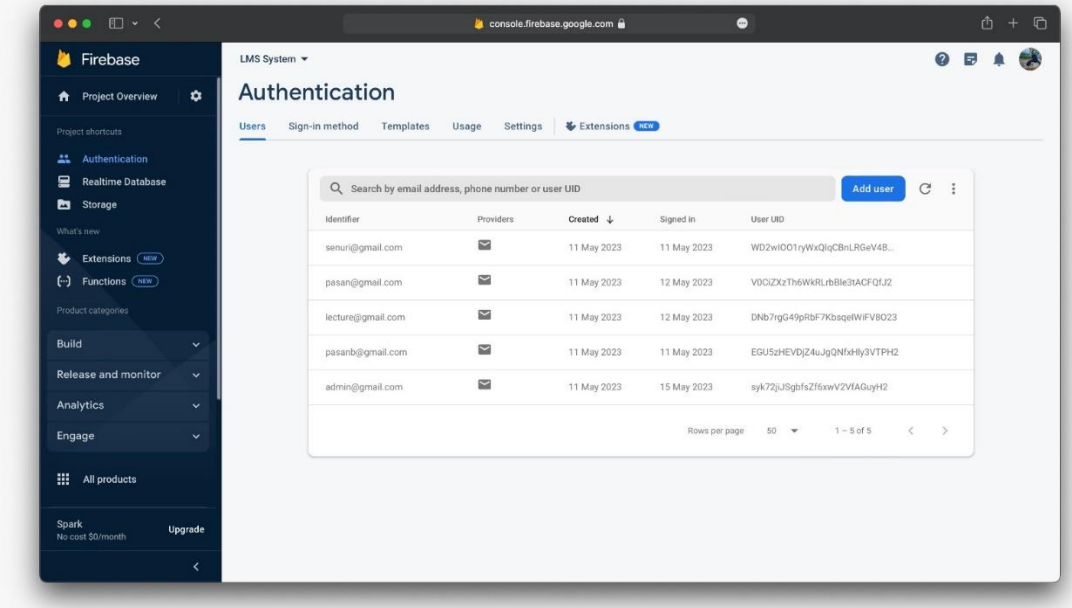
JAVA

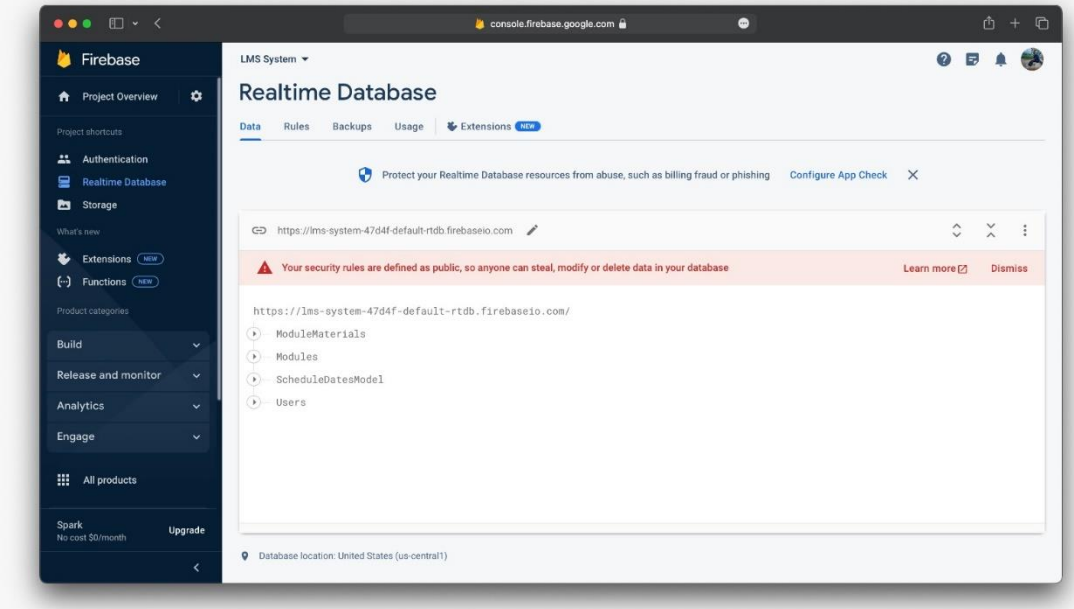
We picked Java as the programming language for the construction of our LMS (Learning Management System) mobile app. Java is a powerful and extensively used programming language that is recognised for its resilience, scalability, and platform independence. We can reach a larger audience by employing Java to ensure that our software functions well on a variety of devices and operating systems. Java's vast libraries and frameworks give us a variety of resources and tools for easily developing and maintaining our LMS programme. Its object-oriented architecture enables for modular and reusable code, making the programme easier to manage and upgrade over time. We can confidently design a feature-rich and high-performing LMS programme that satisfies the expectations of our customers while assuring long-term maintainability with Java's strong community support and constant advances.

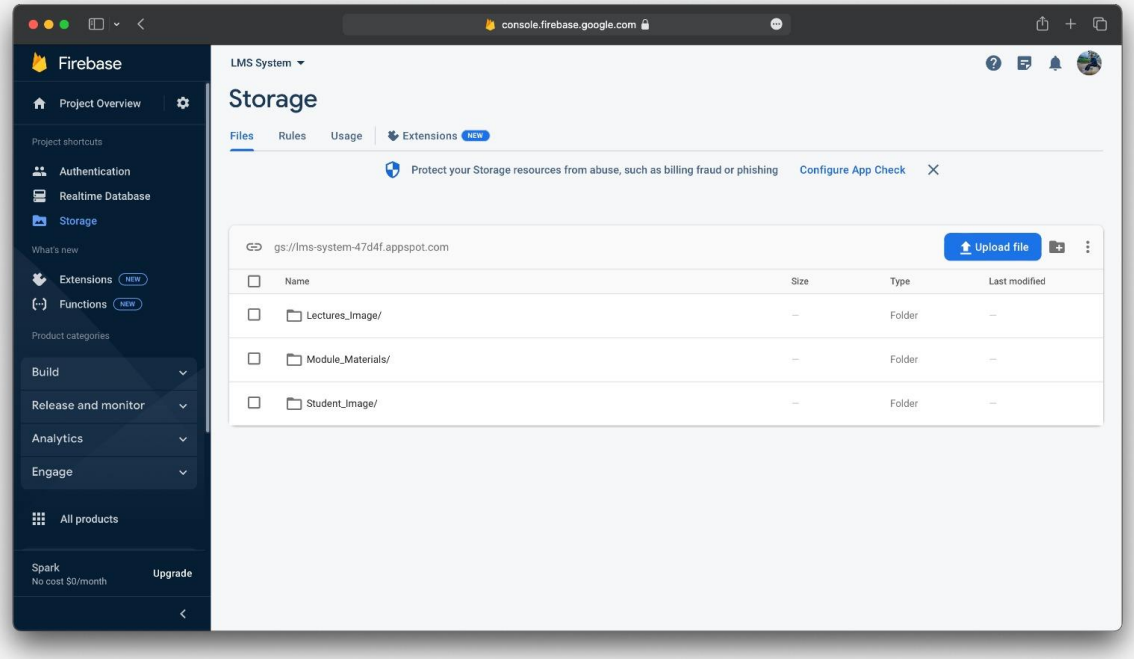
Database

We chose Firebase as our database option for our LMS (Learning Management System) mobile app. Firebase offers us with a powerful and scalable platform that fits effortlessly into the architecture of our project. We can ensure that our app offers up-to-date and synchronised information to our users by utilising Firebase's real-time database capabilities. Furthermore, Firebase provides a number of strong capabilities like as authentication, cloud storage, and analytics, all of which improve the functionality and speed of our LMS software. With Firebase as our database solution, we can safely deliver a dependable and efficient learning experience for our users while also benefiting from the Firebase platform's flexibility and scalability.

Screen shots of database






console.firebase.google.com
Firebase
Project Overview
Project shortcuts
Authentication
Realtime Database
Storage
What's new
Extensions NEW
Functions NEW
Product categories
Build
Release and monitor
Analytics
Engage
All products
Spark
No cost $0/month
Upgrade
LMS System
Storage
Files
Rules
Usage
Extensions NEW
Protect your Storage resources from abuse, such as billing fraud or phishing
Configure App Check
gs://lms-system-47d4f.appspot.com
Upload file
Name
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Type
Last modified
Lectures_Image/
Folder
Module_Materials/
Folder
Student_Image/
Folder

Conclution

Finally, our LMS (Learning Management System) mobile app is based on a strong foundation of technology. We used Android Studio as our development environment, which allowed us to fully use the Android platform and its rich collection of tools and resources. We chose Java as our programming language because of its adaptability, robustness, and platform independence. We want to build dependable and scalable software that can support a broad range of devices and operating systems. Furthermore, Firebase has been critical in offering a streamlined and effective database solution, allowing for real-time data synchronisation and sending up-to-date information to our users. We were able to create feature-rich LMS software that delivers a smooth learning experience while ensuring simplicity of maintenance and future scalability by integrating these technologies.

Workload matrix

Plymouth Index number	Name	Task Carried out
10818168	Pasan Bopegamage	• Design the user interface for a mobile application. • Make the application. • Putting the application through its paces. • Making a database. • Contribution to the final report.
10820271	Kirimatiye G Devanji	• Design the user interface for a mobile application. • Make the application. • Putting the application through its paces. • Contribution to the final report.
10818824	Walpita K Walpita	• Design the user interface for a mobile application. • Make the application. • Putting the application through its paces. • Contribution to the final report.
10819583	Payagala H Divyanjali	• Design the user interface for a mobile application. • Make the application. • Putting the application through its paces. • Contribution to the final report.

10819522	Wedikkara Munindradasa	• Design the user interface for a mobile application. • Make the application. • Putting the application through its paces. • Contribution to the final report.
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