



Independent University, Bangladesh

Mobile Application Development of “Virtual Classroom” at TechTrioZ Solutions

An undergraduate internship report submitted by

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In consideration of the partial fulfilment of the requirement for the degree of

Bachelor of Science in Computer Science

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Virtual Classroom

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Approved on --/--/--

Sabrina Alam

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Acknowledgements

Firstly, I would like to thank Almighty Allah for giving me the strength and the ability to work hard. It was a great challenge doing an internship while the corona situation. It is my privilege that I had the opportunity to do an internship at TechTrio Solutions. I would like to thank all the people on whom I carry out my internship.

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Finally, I would like to thank my parents and family member for their love and support.

Abir Hossain Dibbo

January 2021

Dhaka Bangladesh

Abstract

I carried out my Internship at TechTrioZ Solutions, it was a great learning opportunity and a chance to work with real life products. This report is on Virtual Classroom. Virtual Classroom is an online class management mobile application which allows students and teachers to attend online classes and engage in various other activities. The report is broadly categorized into six different chapters. At first there is an introduction, objectives of the study, scope of the report, Background of the project. Chapter two describes the overview of TechTrioZ Solutions. Chapter three focuses on Methodology used. Chapter four focuses on development phases of Virtual class room and major works involved in virtual classroom development and monetization which is categorized in Planning, Designing, Software development models, Implementation, Testing, Deployment, and maintenance. Chapter five focuses the implementation of the system. Chapter six narrates a concluding summary and a reference section and an appendix.

Letter of Transmittal

25th January, 2021

Sabrina Alam

Lecturer,

Department of Computer Science & Engineering,

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Subject: Submission of Internship Report for the completion of Graduation.

Dear Madam,

With due respect, I would like to inform you that I have completed my internship at TechTrio Solutions. I was under the supervision of Miss Mahmuda Islam, Managing Partner. It was a great experience for me. I got the opportunity to work with the Mobile App Development Team. Throughout the internship, I got an insight how a Mobile App Lifecycle works. In this report, I have tried to include my experience along with some relevant information to make the report informative and comprehensive. I am extremely grateful for your guidance and kind cooperation on this report. It would be great if you kindly go through the report and evaluate my performance.

Regards,

Abir Hossain Dibbo

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Department of Computer Science & Engineering,

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Chapter 1

Introduction

Introduction

The increasing use of Information and Communication Technology innovations has led to the phenomenal growth and use of it in higher education over the past decade. Contemporary educational settings are now supporting curricula that promote competency and performance, which emphasize capabilities regarding how the information will be used rather than what that information entails. With the pandemic hitting the world we understand the importance of it now more so than ever.

Today, online learners demand more than mere information, as in a traditional learning environment, they expect to interact with someone representative of their teacher and to feel as though they are in a classroom, learning from other students, enjoying the learning process, and emotionally engaged with the lesson. As a result of modern technology, they also learn from the teacher's facial expressions, gestures, hand movements, and other activities that convey the message and instruction.

The growth in higher education e-learning programs over the past decade has been considerable to say the least, changing the face of university campuses around the world. eLearning can be thought of as an extension, if not a natural progression, of distance education, whereby students learned from a distance and made use of the technology available at that time, beginning with correspondence with instructors via the mail and moving on to mobile applications.

1.1 Background

Virtual classroom applies the multimodality principle to distance learners who need to have support and guidance, to feel social presence, to share responsibility, and to be motivated by instructors. Virtual classroom is online environment that enable students and instructors to communicate synchronously, by means of audio, video, text chat, and other such features, as though they were standing face to face in a classroom. Virtual classroom is like a physical classroom in that both allow for immediate feedback, support consensus and decision-making in group activities with 'just-in-time clarification and information' provide guided pacing and discipline in learning, and foster the development of group cohesion.

1.2 Objective of the Project

- Automate the current manual classroom system.
- To enable teachers to create a collaborative student-centered learning environment.
- Allow teachers to provide all the necessary class material.
- Allow students to join classes easily.
- To access all materials easily and quickly.
- Allow teachers to create announcements and notify students.
- To enable report generation: it can give necessary report to teacher.
- To learn through various modes such as videos, audios.
- Allow online assignment submission and grading.
- To deliver online lectures

1.3 Scope of the Project

The demand within the global market for virtual classroom has been rising on account of advancements in remote learning technologies. A virtual classroom is amongst the most nascent advancements in modern education systems, and it has enabled easy and quick transfer of knowledge. Virtual classroom is an online system wherein the participants log in from their devices to access a range of lectures, videos, and teaching modules at a given point in time. A virtual classroom can be attended from anywhere in the world, and all the participants are connected to the ‘teacher’ and to each other via a common channel. Furthermore, a virtual classroom also allows students to raise their queries by means of gestures, sounds, or buttons. The features of virtual classrooms are significantly larger and utilitarian

than normal classrooms, and this gives an impetus to the popularity of the former. There is a high possibility of new growth avenues emerging in the global virtual classroom market as schools and universities invest in this technology. Owing to the aforementioned factors, the revenues index of the global market for virtual classroom is projected to improve in the years to come.

Chapter 2

Company Profile

2.1 Company Profile of TechTrio Solutions

TechTrio is a young company located in Dhaka Bangladesh. TechTrio is young because it is peopled by energetic, curious, and committed minds who likes to take on new challenges and solve complex business problem. The company was founded by Mr. Naimul Baset and Mrs. Mahmuda Islam in November 2019. They are professionals with a vivid experience and wide exposure in Information Technology. It is a company where both functional and technical field merge together providing appropriate IT solutions. Their main services are to set up and maintain business's dashboards, data mining, and reporting. They also provide full range of consultancy and implementation of Cloud Computing Architecture by designing highly fault tolerant, scalable, secured, compliant and cost-effective solution according to need. Transition project management and road map preparation services are also provided by company's certified experts. They are specialized to support with their professional services like IT system design, Data storage and Backup design, Cloud Architecture, Software development, Comparative Analysis and Evaluation. Business Process documentation, policy preparation, Delegation of Authority matrix preparation and alignment with IT systems.

2.2 Company Vision Mission Values

Vision

To become a top-rated IT solution provider at home and abroad touching many hearts by innovation, transformation, and resource development.

Mission

To realize the Vision TechTrioZ will:

- Generate technology-based ideas and solutions for the stakeholders for doing right things and for doing things right.
- Capacity development, process improvement and digital transformation are the key drivers.

Values

- Quality of work
- On time, In-Full Delivery
- Customer Orientation
- Innovation and Idea generation
- Fairness and transparency
- Continuous improvement
- Health and safety

2.3 Their main Expertise is:

- Provide IT services and solutions (Process re-engineering and smart web-based software development)
- IT Consultancy
- Mobile Computing (Apps Development)
- Data Analytics for Decision Making
- Big Data analysis, Application of Data Science, Market & Business Intelligence

2.4 Key Project

TechTrio Solutions, a fast-growing tech company working on various projects which helps people to experience the greater benefits. Their key projects which are ongoing:

- Price Analytics Dashboard (Technology: Django, Rest API, Vue.JS, MySQL and Qlik Sense)
- Rebate Management System (Technology: Django, Rest API, Vue.JS, MySQL)
- Easy ERP System. (Technology: Django, Rest API, Vue.JS, PostgreSQL)
- Education system. (Technology: Django, Rest API, Vue.JS, PostgreSQL)

Chapter 3

Methodology

Methodology

Agile software development refers to a group of software development methodologies based on iterative development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams. Agile methods or Agile processes generally promote a disciplined project management process that encourages frequent inspection and adaptation, a leadership philosophy that encourages teamwork, self-organization and accountability, a set of engineering best practices intended to allow for rapid delivery of high-quality software, and a business approach that aligns development with customer needs and company goals. Agile development refers to any development process that is aligned with the concepts of the Agile Manifesto.

3.1 Why Agile

Efficiency

Agile makes teams more efficient at getting their work done. As Agile teams work in a collaborative culture, efficiencies generate a ripple effect. When everyone agrees on their role in the team, and when each person can focus on the most important tasks, the entire team works collectively and moves forward in unison, falling into regular cycles of work production, which helps in the predictability of Agile projects.

The characteristics of an Agile team are interconnected because of the relationship among efficiency, collaboration, and predictability, and each characteristic feed into the next one which forms a holistic set of habits that can be called Agile.

High Quality

In the Agile development, testing is done during the development cycle to ensure that the product is delivered in the optimum state. It enables the product owner to perform changes if needed and the team is aware of potential issues.

Project Predictability

Companies calculate the value of a project on the grounds of cost and return of investment. If the ROI outweighs the cost, then a company may decide to take the project further. But if the ROI of the project is not known, as it is with many projects nowadays, predicting the result of that project in terms of success becomes next to impossible. This is the reason why predictability is important in projects. The advantage of Agile methodology is that when companies take time on the front end during planning a project using Agile techniques, they can predict the cost of a project to conclude whether they should continue with the project.

Agile Ensures Development

As agile development is iterative, it means that the features are delivered incrementally which gives early benefits while the product is in the development process.

- Development is fast and early.
- A few iterations ensure a functional 'ready to market' product.
- First Mover Advantage.



Figure-1: Agile software development

Chapter 4

Body of The Project

4.1 Project Planning

Every project must need a proper plan. For a successful project planning is mandatory. I have described my planning below:

Project Planning:

- Gather Requirements
 1. Functional requirements.
 2. Nonfunctional requirements.
- Design
 1. Rich picture.
 2. Use case scenario.
- Implementation
 1. Language and Framework Selection
 2. Frontend design.
 3. Database design.
 4. Frontend and backend connection.
- Testing

4.2 Feasibility Analysis

Here, we carried out a study to gain an understanding of the customers' current system and problems experienced in this system through interviews, observations, participations etc. We used the obtained data to determine the viability of the system being proposed in terms of technical, economic, and social feasibilities.

4.3 Requirements Gathering

Functional Requirements: A functional requirement defines a function of a system or its component, where a function is described as a specification of behavior between outputs and inputs. The Proposed System must be able to perform the following:

1. Both Student and Teacher can securely login.
2. Student and Teacher must be registered before they can use the app.
3. Teacher must be able to create classes.
4. Teacher must be able to delete classes.
5. Student must be able to delete classes.
6. Students must be able to join classes using secure password.
7. Teacher can upload Class materials for students to download and view.
8. Teacher can provide assignment for students.
9. Students can download and view class materials.
10. Students can upload assignments.
11. Teacher can create announcements for students to view.
12. Both Student and Teacher can join a video conference classroom.
13. Class session can be recorded.
14. Screen Sharing can be done.
15. Teacher can view student list.
16. Teacher can view which students submitted assignments and download their assignments.

Non-Functional Requirements:

1. The user interface must be friendly and easy to use.
2. The system be high performing and fast.
3. The system should be reliable with high accuracy and low failures.
4. The system can handle large amount of load.
5. The video and audio quality must be high.
6. The system must be able to handle large files.

4.4 Designing

4.4.1 Rich Picture

Student Module

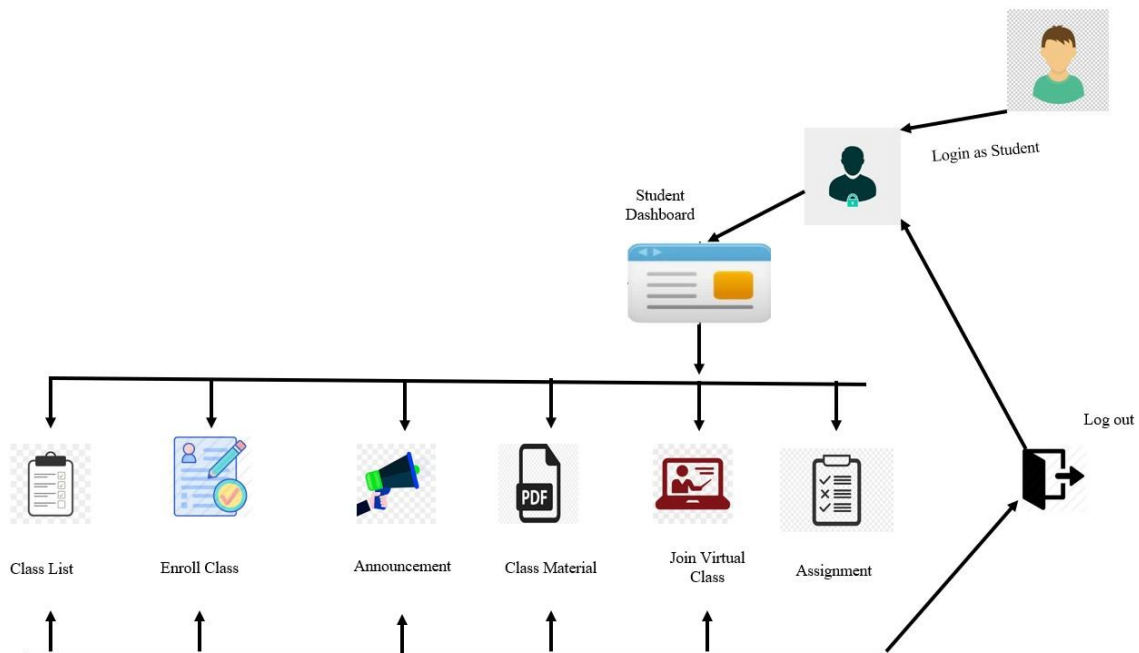


Figure-2.1: Rich Picture for student

Teacher Module:

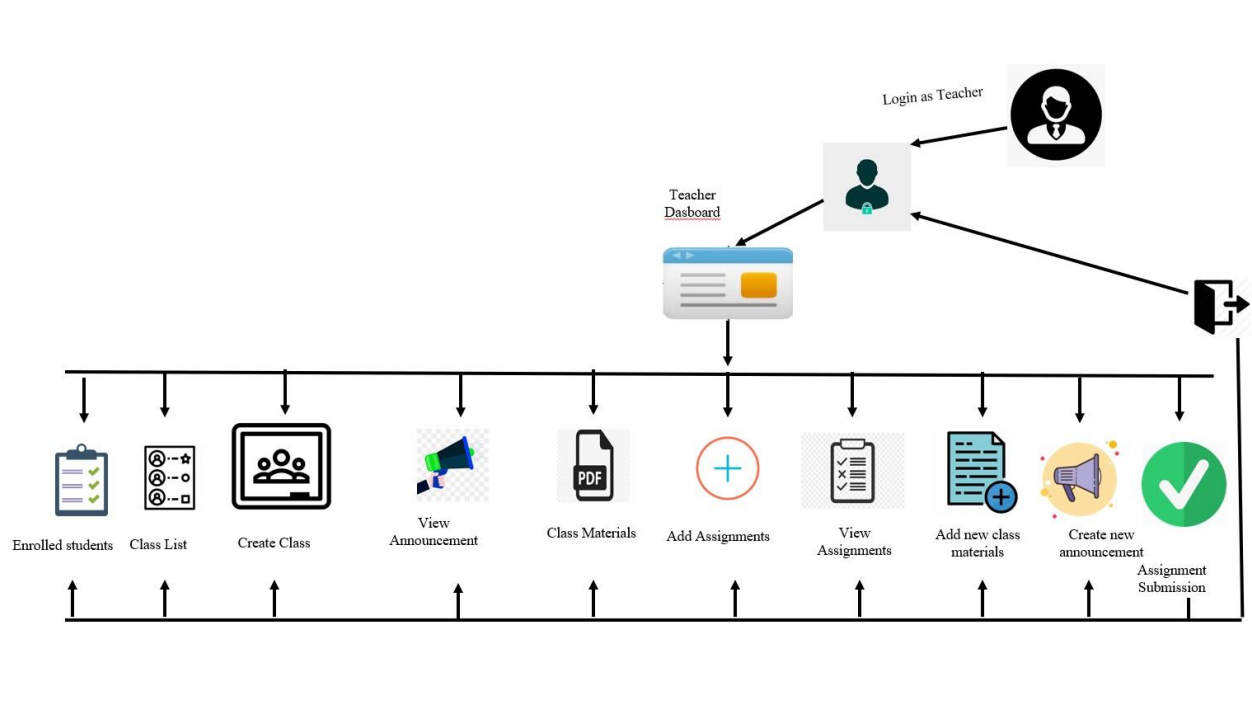


Figure-3: Rich Picture for Teacher

4.4.2 Use case

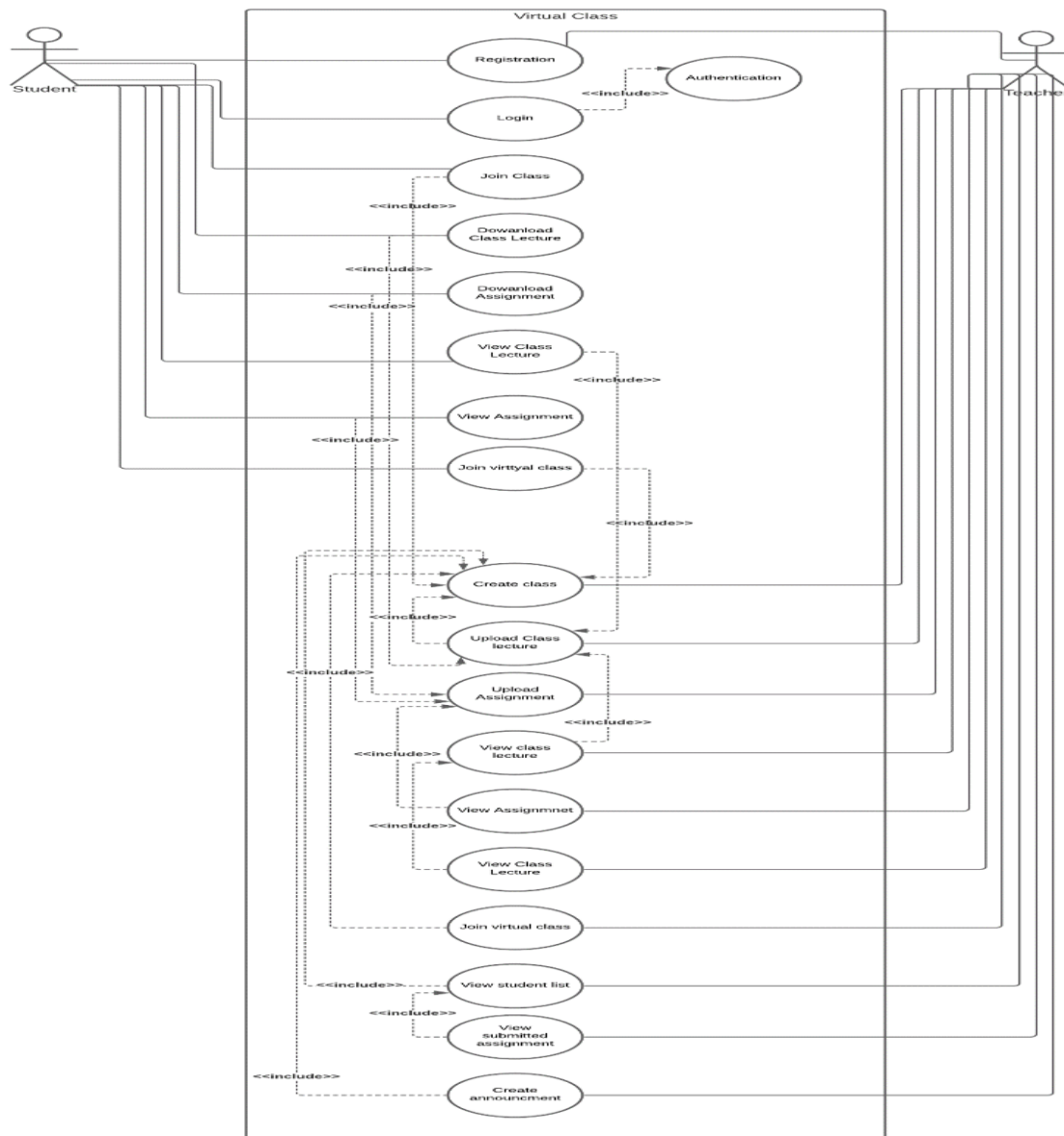


Figure-4: Use Case Diagram

4.5 Implementation

4.5.1 Coding

For building virtual classroom I was advised to work with flutter. In general, creating a mobile application is a very complex and challenging task. There are many frameworks available, which provide excellent features to develop mobile applications. For developing mobile apps, Android provides a native framework based on Java and Kotlin language, while iOS provides a framework based on Objective-C/Swift language. Thus, we need two different languages and frameworks to develop applications for both OS. Today, to overcome from this complexity, there are several frameworks have introduced that support both OS along with desktop apps. These types of the framework are known as cross-platform development tools.

The cross-platform development framework can write one code and can deploy on the various platform (Android, iOS, and Desktop). It saves a lot of time and development efforts of developers. Flutter is a UI toolkit for creating fast, beautiful, natively compiled applications for mobile, web, and desktop with one programming language and single codebase. It is free and open source. It was initially developed from Google and now manages by an ECMA standard. Flutter apps use Dart programming language for creating an app. The dart programming shares several same features as other programming languages, such as Kotlin and Swift, and can be trans-compiled into JavaScript code.

Advantages of Flutter

- It makes the app development process extremely fast because of the hot-reload feature. This feature allows us to change or update the code are reflected as soon as the alterations are made.
- It provides the smoother and seamless scrolling experiences of using the app without many hangs or cuts, which makes running applications faster in comparison to other mobile app development frameworks.
- Flutter reduces the time and efforts of testing. As we know, flutter apps are cross-platform so that testers do not always need to run the same set of tests on different platforms for the same app.

- It has an excellent user interface because it uses a design-centric widget, high-development tools, advanced APIs, and many more features.
- It is like a reactive framework where the developers do not need to update the UI content manually.
- It is suitable for MVP (Minimum Viable Product) apps because of its speedy development process and cross-platform nature.

Disadvantages of Flutter:

- The Flutter is a comparatively new language that needs continuous integration support through the maintenance of scripts.
- It provides very limited access to SDK libraries. It means a developer does not have a lot of functionalities to create a mobile application. Such types of functionalities need to be developed by the Flutter developer themselves.
- It uses Dart programming for coding, so a developer needs to learn new technologies.

4.5.2 Database

For my database I chose Firebase Cloud Firestore. Cloud Firestore is a flexible as well as scalable NoSQL cloud database. It is used to store and sync data for client and server-side development. It is used for mobile, web, and server development from Google Cloud Platform and Firebase. Like the Firebase Real-time Database, it keeps syncing our data via real-time listeners to the client app. It provides offline support for mobile and web so we can create responsive apps that work regardless of network latency or Internet connectivity. Cloud Firestore also provides seamless integration with Google Cloud Platform products and other Firebase, including cloud functions. After Cloud Firestore's NoSQL data model, we can store data in documents that have field mappings for values. The documents are stored in a container called collections. These containers are used to organize our data and create queries. There are different data types, from simple string and numbers to complex nested objects, supported by documents. We can also create sub-collection within a document and create a hierarchical data structure that scales to

the growth of our database. The Firestore data model supports whatever data structure works best for our app. Additionally, the query in Cloud Firestore is expressive, efficient, and flexible. The shallow queries are created to retrieve data at the document level without the need to retrieve the entire collection or any nested subdivision. Add sorting, filtering, and limits for our queries or cursors to index the result. Add a real-time listener to our app for keeping the data running. Every time it is updated without recovering our entire database. Adding real-time listeners to our app informs us with a data snapshot whenever our customer apps are changing data, only getting new changes.

For protecting our data access in Cloud Firestore, Firebase authentication, and Cloud Firestore security rules are used for Identity and Access Management (IAM). Most apps need to know the identity of a user. Knowing a user's identity allows an app to securely save user data in the cloud and provide the same personalized experience across all the user's devices.

Firebase Authentication provides backend services, easy-to-use SDKs, and ready-made UI libraries to authenticate users to your app. It supports authentication using passwords, phone numbers, popular federated identity providers like Google, Facebook, and Twitter, and more. Firebase Authentication integrates tightly with other Firebase services,

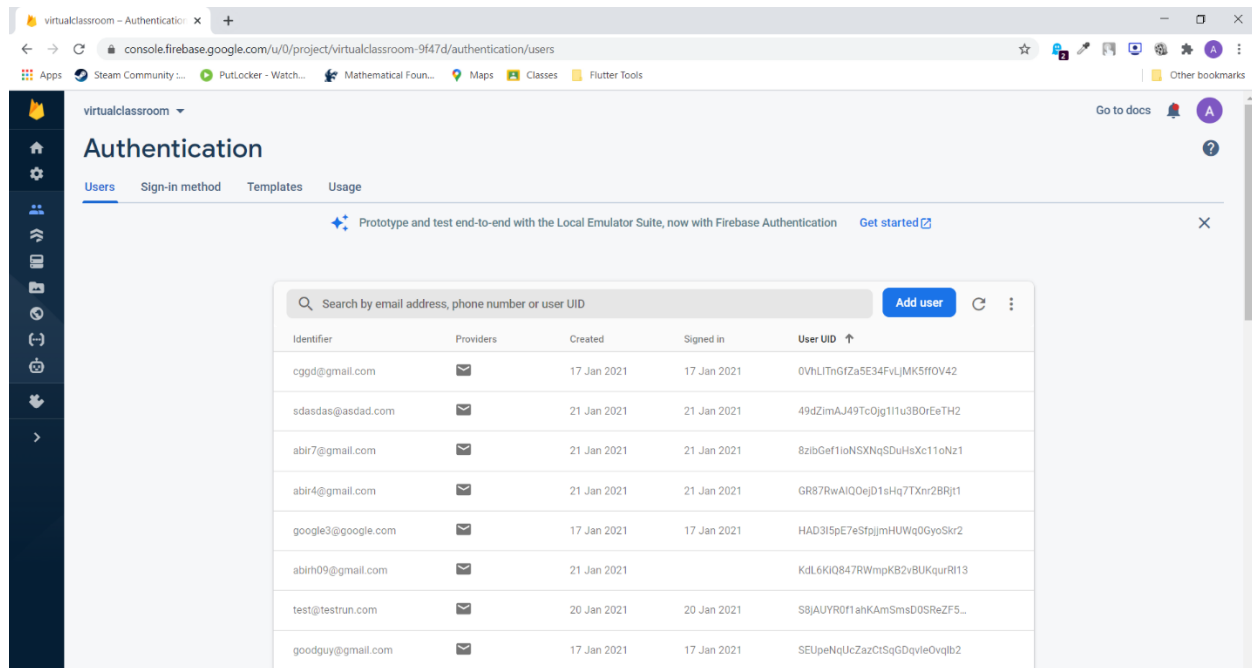


Figure-5: Firebase Authentication

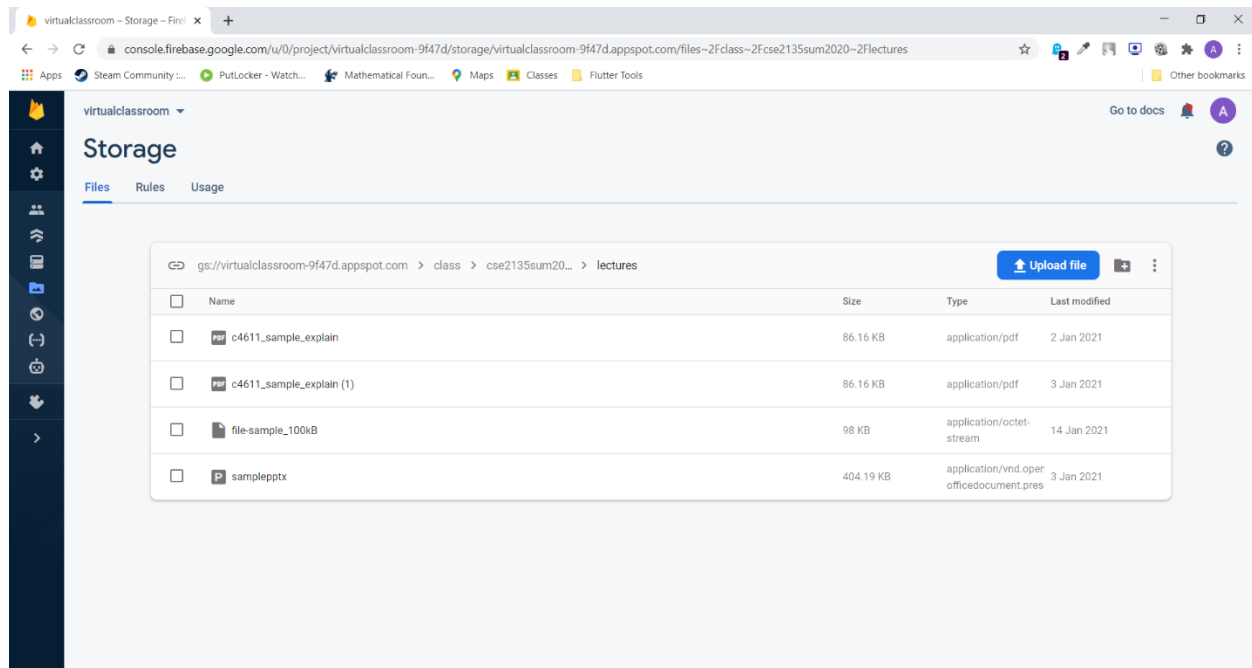


Figure-6: Firebase Storage

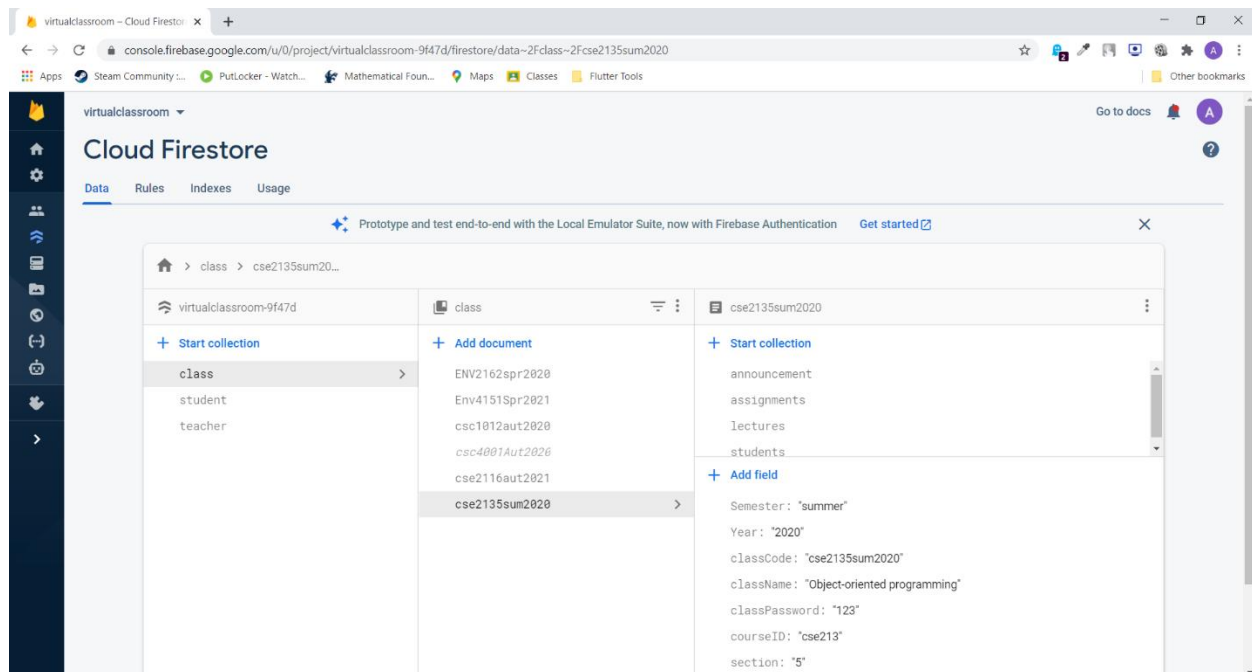


Figure-7: Firebase Firestore

4.6 Testing

Software Testing is a method to check whether the actual software product matches expected requirements and to ensure that software product is Defect free. It involves execution of software/system components using manual or automated tools to evaluate one or more properties of interest. The purpose of software testing is to identify errors, gaps or missing requirements in contrast to actual requirements. We followed following test strategies:

Functional Testing

Functional Testing is a type of software testing that validates the software system against the functional requirements/specifications. The purpose of Functional tests is to test each function of the software application, by providing appropriate input, verifying the output against the Functional requirements.

Checklist base testing

To structure a set of testing in order not to waste time repeating the same tests. We have used a generalized list of scheduled tasks and standard rules against our software application that need to be tested for flaws. These "to-do" lists form the "checklist" which enumerates all the conventional actions performed phase-wise during the testing cycle, with the completion of each phase, the listed activities are ticked off step by step.

Beta/ Acceptance Testing

To check if our product is working in the way it must and gain confidence in the product that is getting released to the market. It is the external user acceptance testing done by the real users on the client side. Our main aim of beta testing is to make sure that our product does not have any issues from the client side.

Items to be tested.

All the functional requirements will be tested.

1. Compatibility Test
2. Check creates new account to check existed user created again or not.
3. Login with specific errors
4. Teacher can upload the file.
5. Teacher can create class.
6. Same class not created twice.
7. Prevent accidental deletion of class by using password.
8. Teacher can assign assignment.
9. Teacher can write in notice board.
10. Student can join class.
11. Student can download class material.
12. Student can upload assignment.
13. Student can view announcements.

Chapter 5 Project Management and time distribution

5.1 Activity Wise Time Distribution

Activity	Days	Work Percentage
Planning	5	5%
Requirements Gathering	5	5%
Feasibility Analysis	5	5%
Designing	22	40%
Implementation	23	40%
Testing	5	5%
	Total= 65	100%

5.2 Gantt Chart

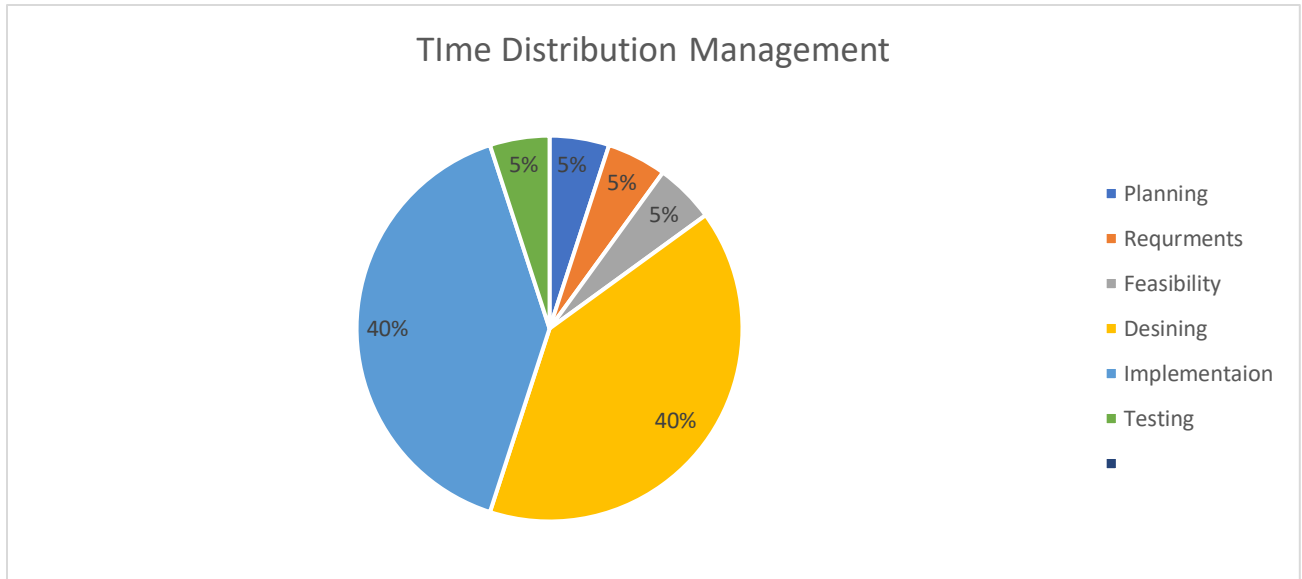


Figure-8: Time Distribution Pie Chart

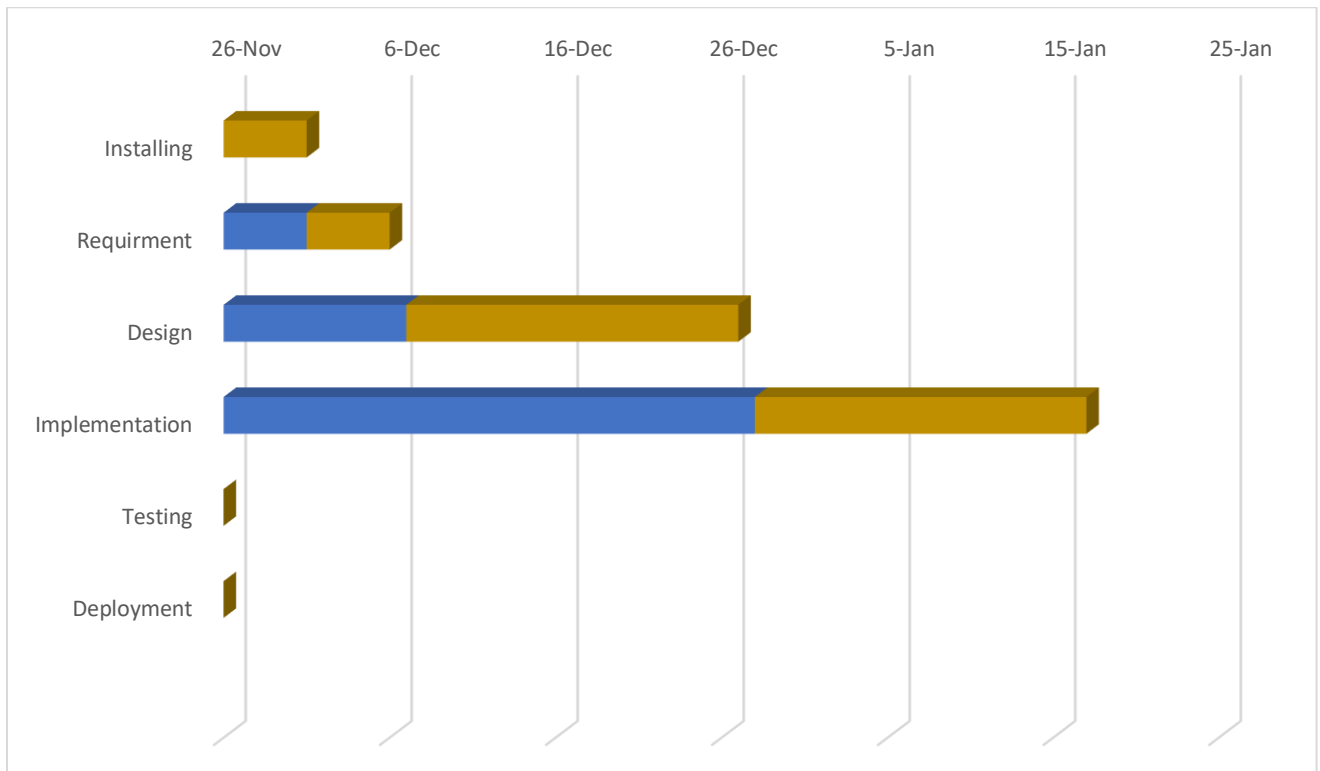


Figure-9: Gantt Chart

Chapter 6 Project as Engineering Problem Analysis

6.1 Sustainability of the work

Sustainability means doing something in such a way as to not deplete natural resources and to support long-term, global ecological balance. Looked at another way, sustainability is often seen as balancing meeting the needs of the present without compromising the needs of future generations to meet theirs.

During this challenging COVID-19 period most of the people from all classes completely dependent on virtual environment. It is a hint that the use would increase even further in the future. Given the current risky situation and online dependency of people, it is easily understandable that the Virtual classroom is highly sustainable. The Virtual Classroom supports for this kind of change, securing its sustainability.

6.2 Social and environmental effect analysis

Sustainability awareness is of great importance in virtual environment. Researchers and practitioners have asked how environmentally aware online classrooms are, and which measures can be implemented for green-minded customers. All aspects are connected, and a company cannot choose to deal with one and omit another. Dealing with the whole process and services means not harming living creatures. The support for a green environment and products contributes to the health of sustainable e-commerce consumers.

However, studies show that transport increases pollution, emissions, and congestion, which harms the environment. During online classes there is no use of transportations, pollution. So, it is totally environment friendly.

Chapter 7

Internship out come and issue analysis

7.1 Problem and challenges face in the workplace

Internship is completely a new experience for me. I faced some challenges and problem during my internship phase. But this experience is completely a new learning for me.

- As I did not know dart language before, it was a big challenge for me to learn this new language within this short period of time.
- It took a lot of time to learn and collect and study all the documentation for my project.
- At the beginning the 9:30 to 5:00 work life was so tiring for me. I was not habituating with this situation before. So, it was a difficult situation for me. But after some days I got used to all the situation with the cooperation and support of my team members.

7.2 Analyzing the issues based on relative theory

System Analysis and Design: System Analysis and Design helped me to properly plan the project and approach it in the correct manner, to reduce problems on later stages.

Database Management: My experience from database management course helped me develop the database model of the project.

Object Oriented Programming: Since Flutter and Dart are object Oriented programming, my learnings from this course were greatly in use during my project.

I used different classes and created objects of the classes, which helped me to do development properly.

Mobile Application: My familiarity with mobile application helped me to pick things faster in early stages, since I was already familiar with android studio and developed project using it. I could catch on faster.

7.2.1 Literature review

Technology such as the virtual classroom is becoming increasingly popular in today's modern world.

This pandemic situation made it necessary for students and teachers. A virtual classroom is an online learning. Virtual classroom can provide students with quick feedback in the form of 'just-in-time' clarification and information. Moreover, in a virtual classroom, students can easily interact with their peers in real time which is often not possible in other forms of communication, point out that online classroom allow students to enhance their interaction with classmates over the course of their study as they become more comfortable using different technologies. The interactivity in virtual classroom creates a more active learning environment and instructors can post various class discussion topics using an electronic whiteboard in a virtual classroom.

Chapter 8 Conclusion and Future work

8.1 Future Work

For future update I have some recommendation to improve the project. This project can be more user friendly. For better user experience and faster response in the system they can change the UI and UX design and maintain it. The user experience will get faster.

8.2 Conclusion

This internship was very successful for me. I have gained new knowledge, skills, and met so many new people. I got insight into professional practice. The demand for practical work experience has no other alternative in today's job market. An internship is a great opportunity to achieve this experience. The internship was also good to find out what my strengths and weaknesses are. This helped me to define what skills and knowledge.

Also, about my project, As Bangladesh is slowly moving towards achieving its dream of becoming a digitalized nation, the education sector needs to be revamped. Use of technological aids in teaching such as virtual classroom enables teachers to create a collaborative student-centered learning environment. However, this will require considerable effort from the teachers as they must prepare lecture notes, question banks, learning lessons etc. to upload these materials in an online platform. Virtual classroom requires different pedagogical methods than the repetitive and traditional 'chalk and talk' teaching approach. Unfortunately, the local educational culture in Bangladesh, like many other developing countries is focused on repetition and memorization. To bring a change in this norm is a huge challenge. While the process of change in pedagogy may be faster for developed countries due to their open-minded cultural aspect and technological

advancements, one cannot It is also vital to ensure that any chosen educational online platform is compatible with the existing curriculum and the institutional context. Moreover, an important aspect of using virtual classroom for teaching purposes is that it must be economically feasible, which means users can get the facilities at little to no cost.

Appendix: A (UI Design)

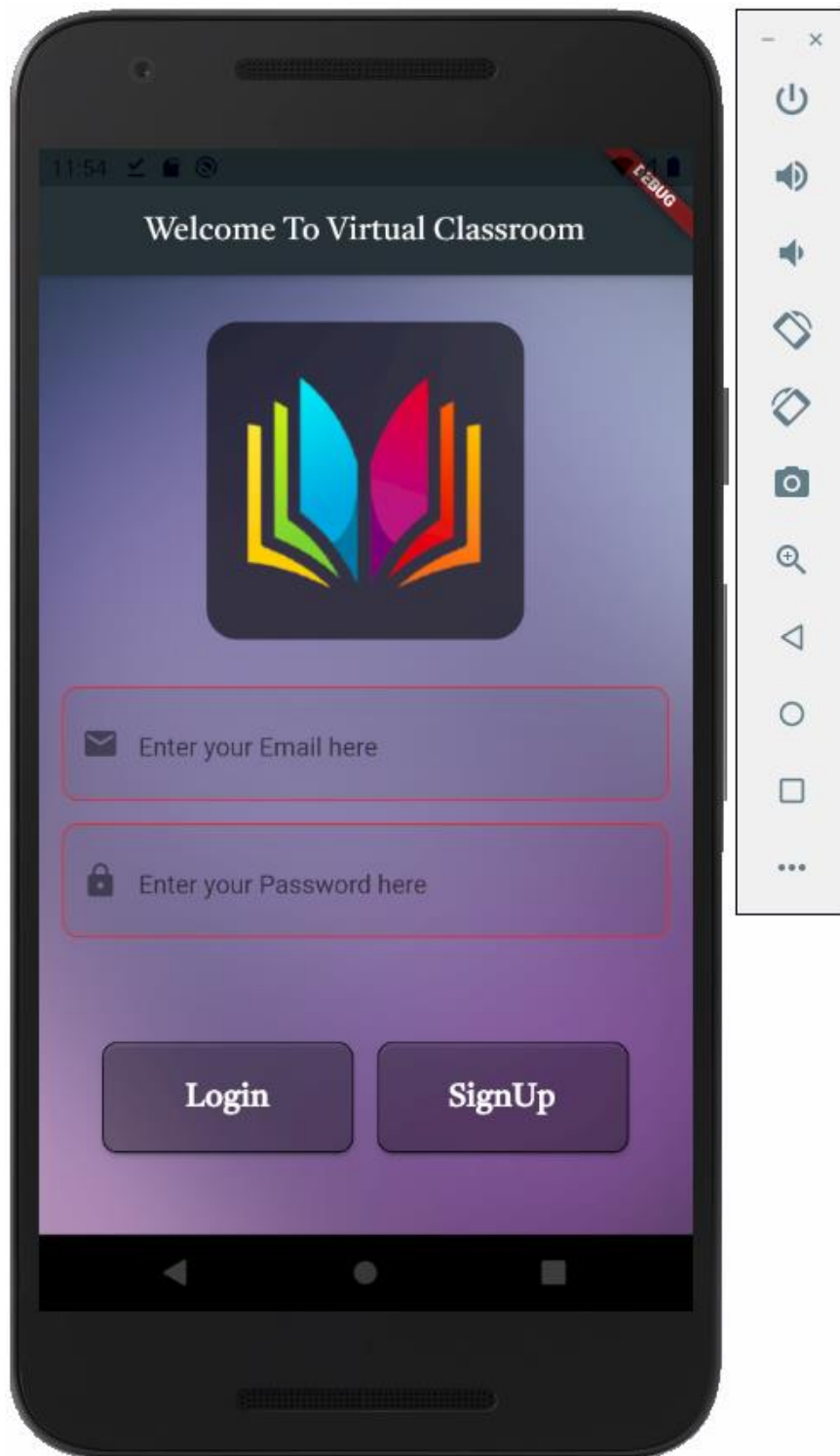


Figure-10: Login Validation

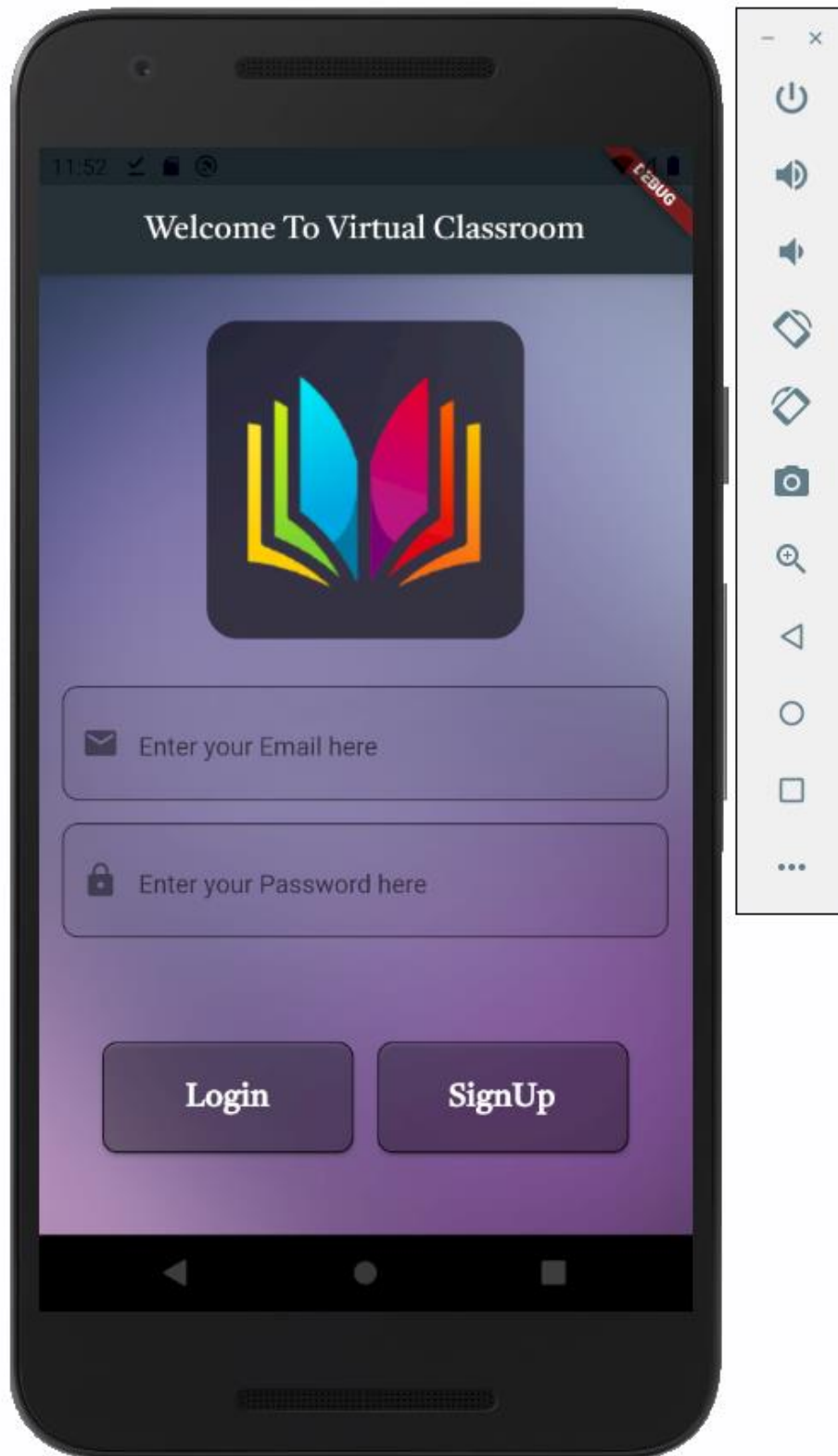


Figure-11: Login Page

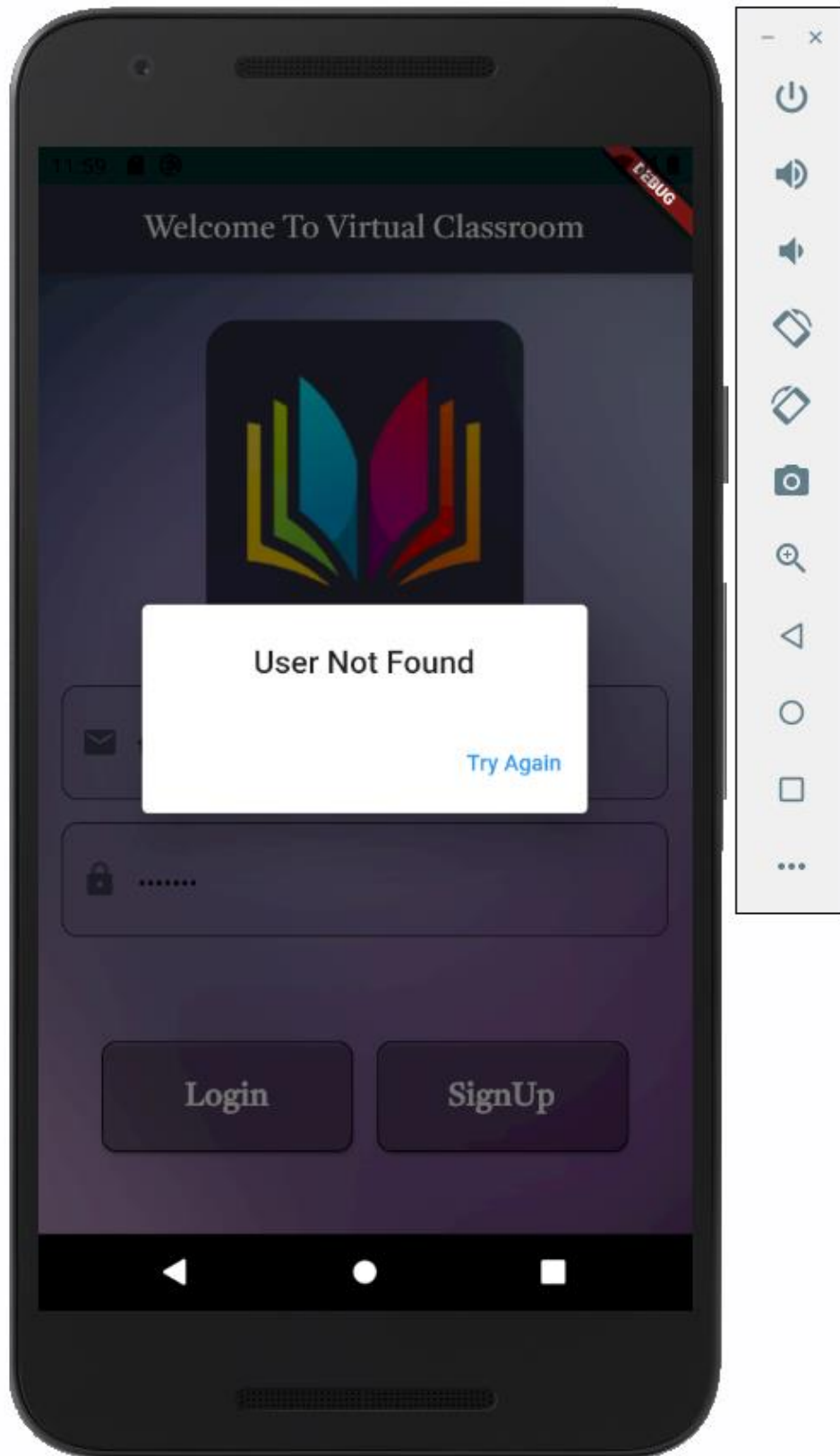


Figure-12: Login Exception for user not existing

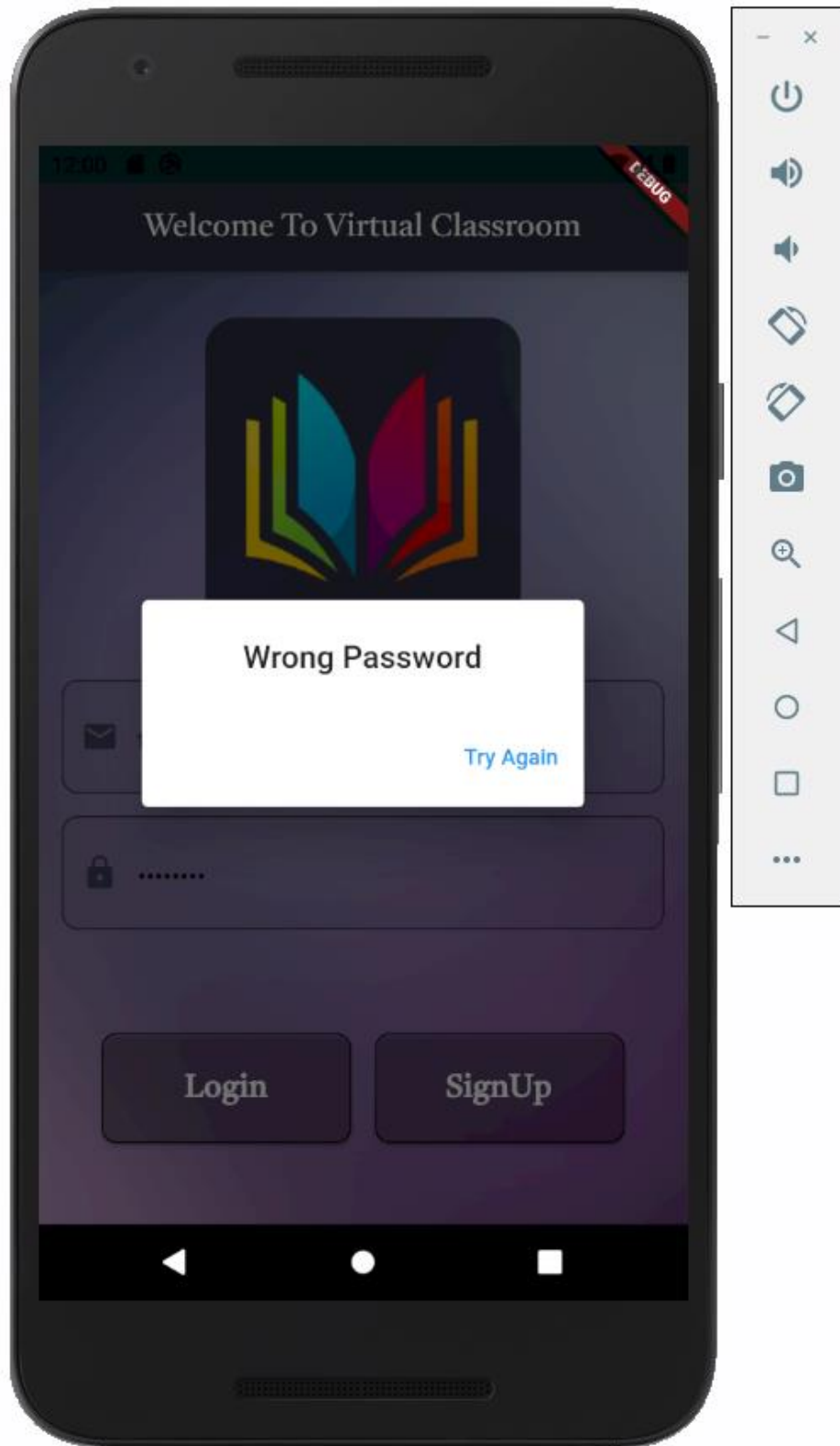


Figure-13: Login exception for wrong password

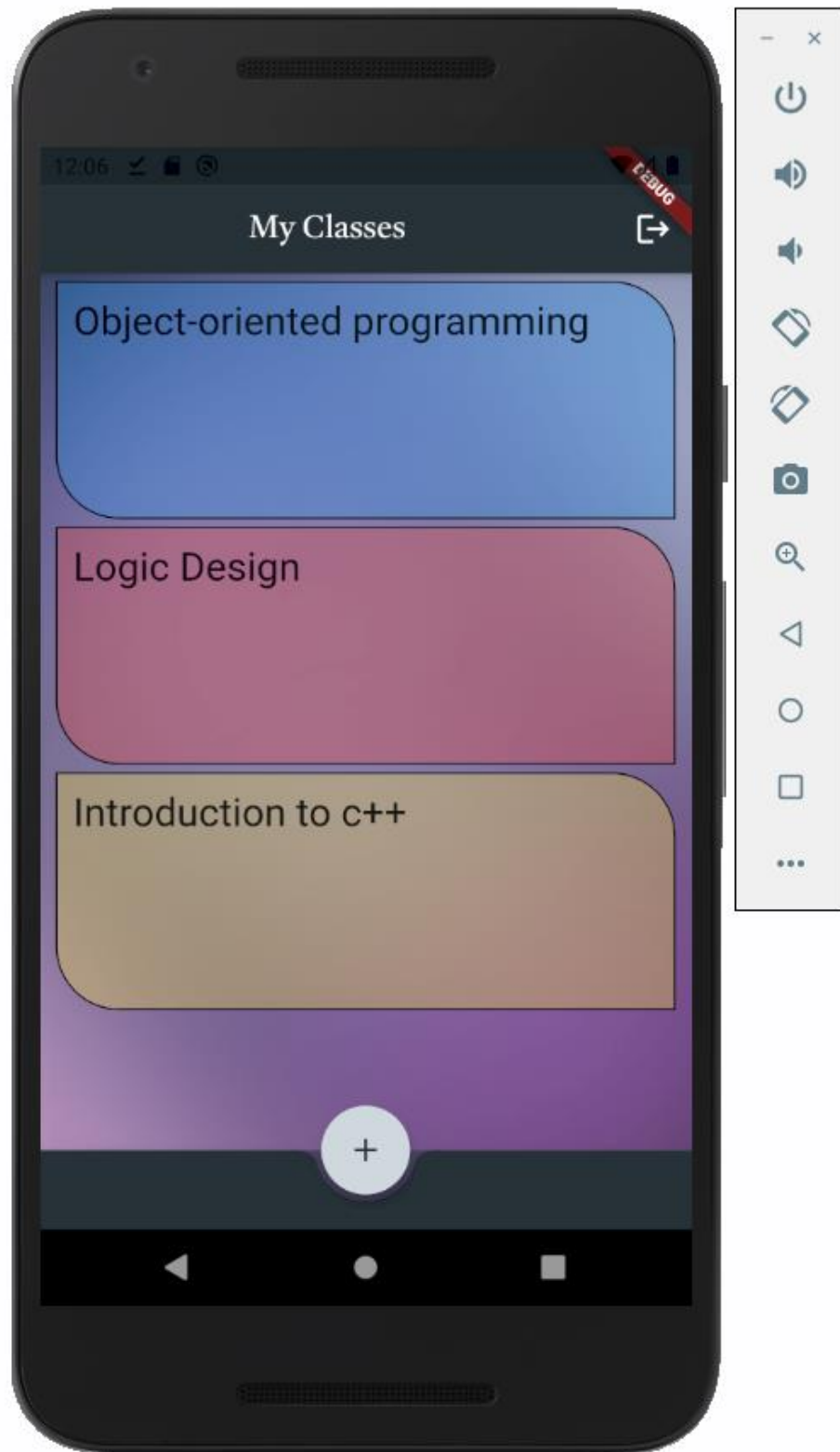


Figure-14: List of Classes

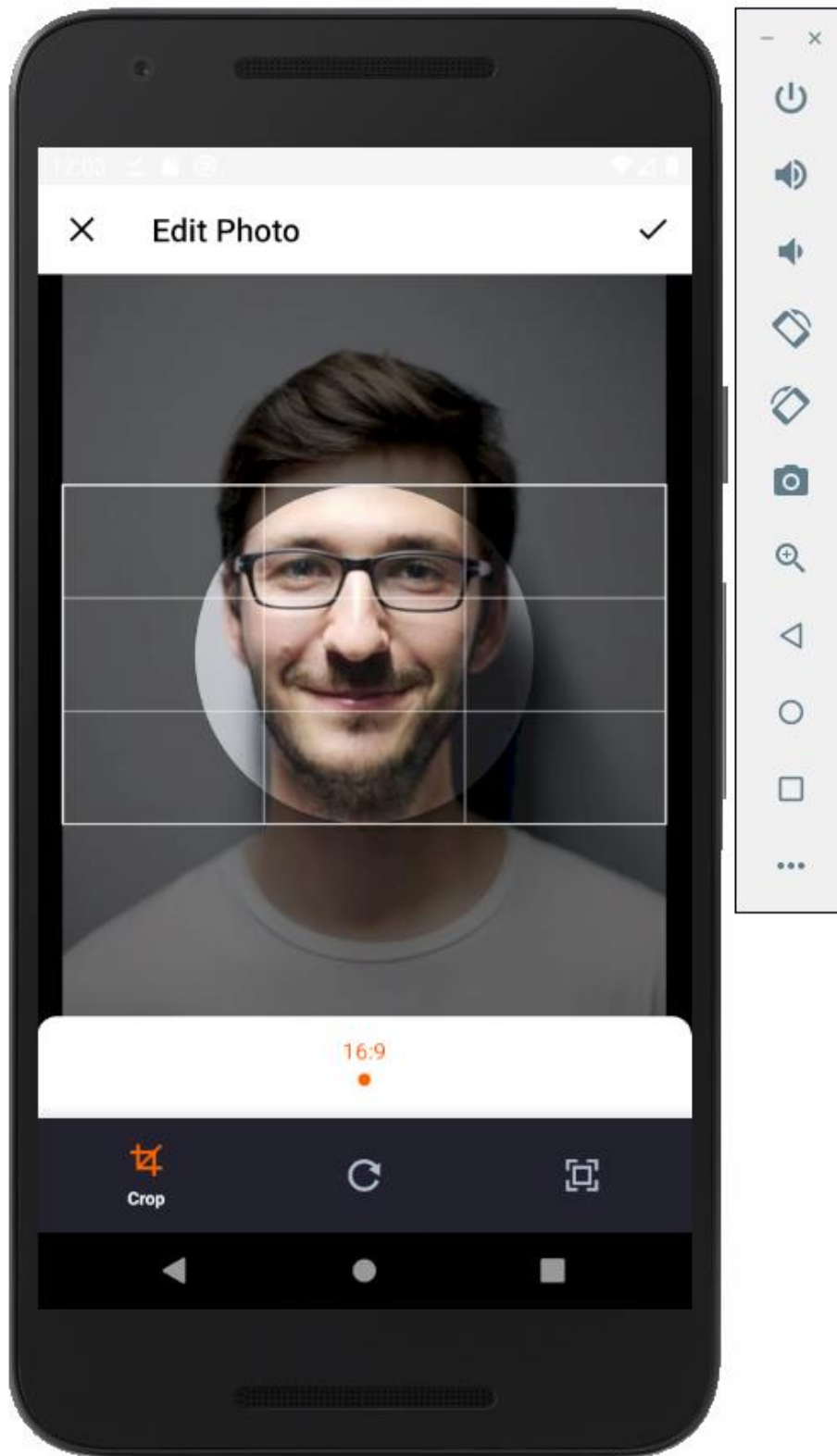


Figure-15: Cropping Photo for User Profile

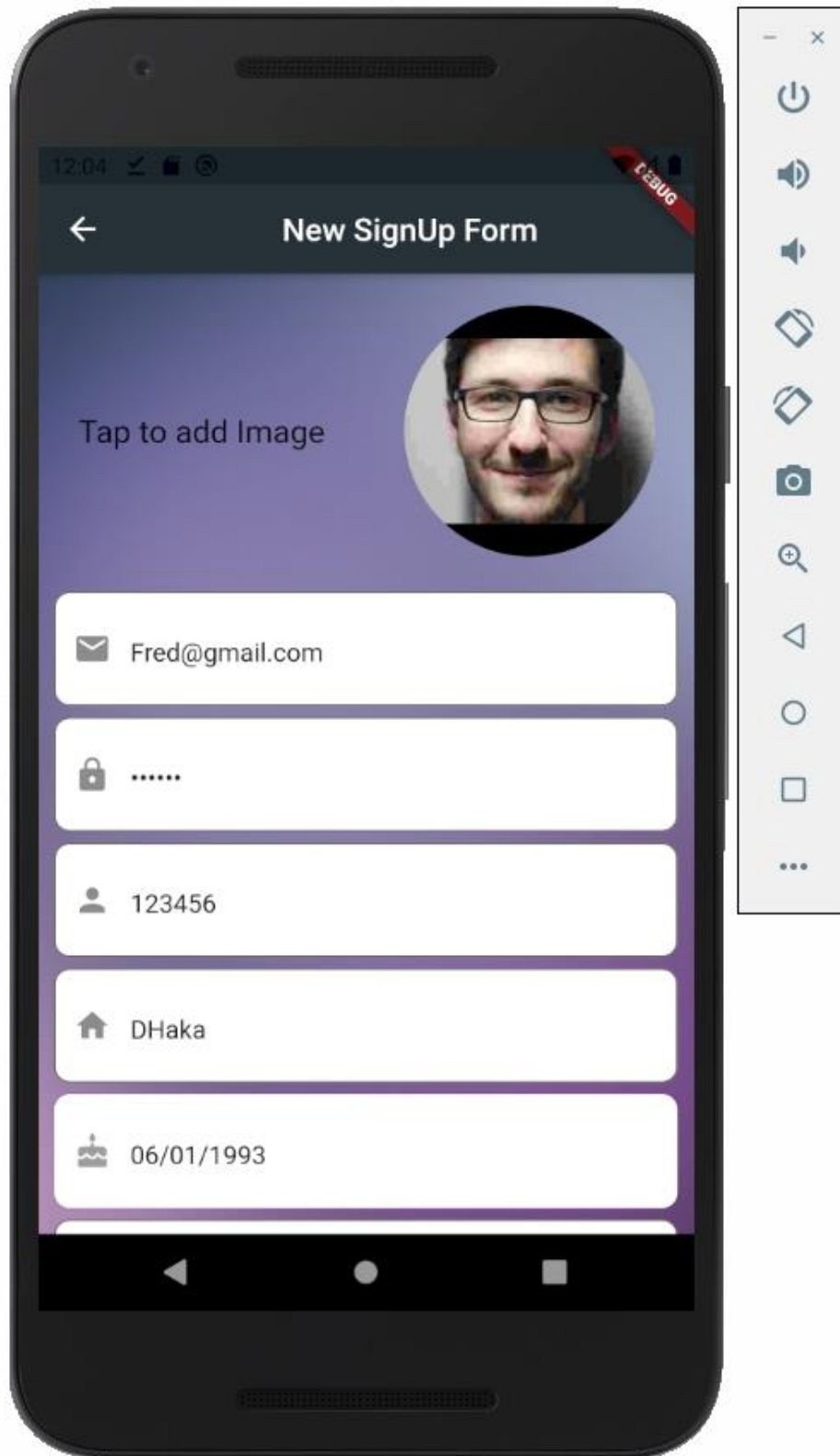


Figure-16: Signup as new user

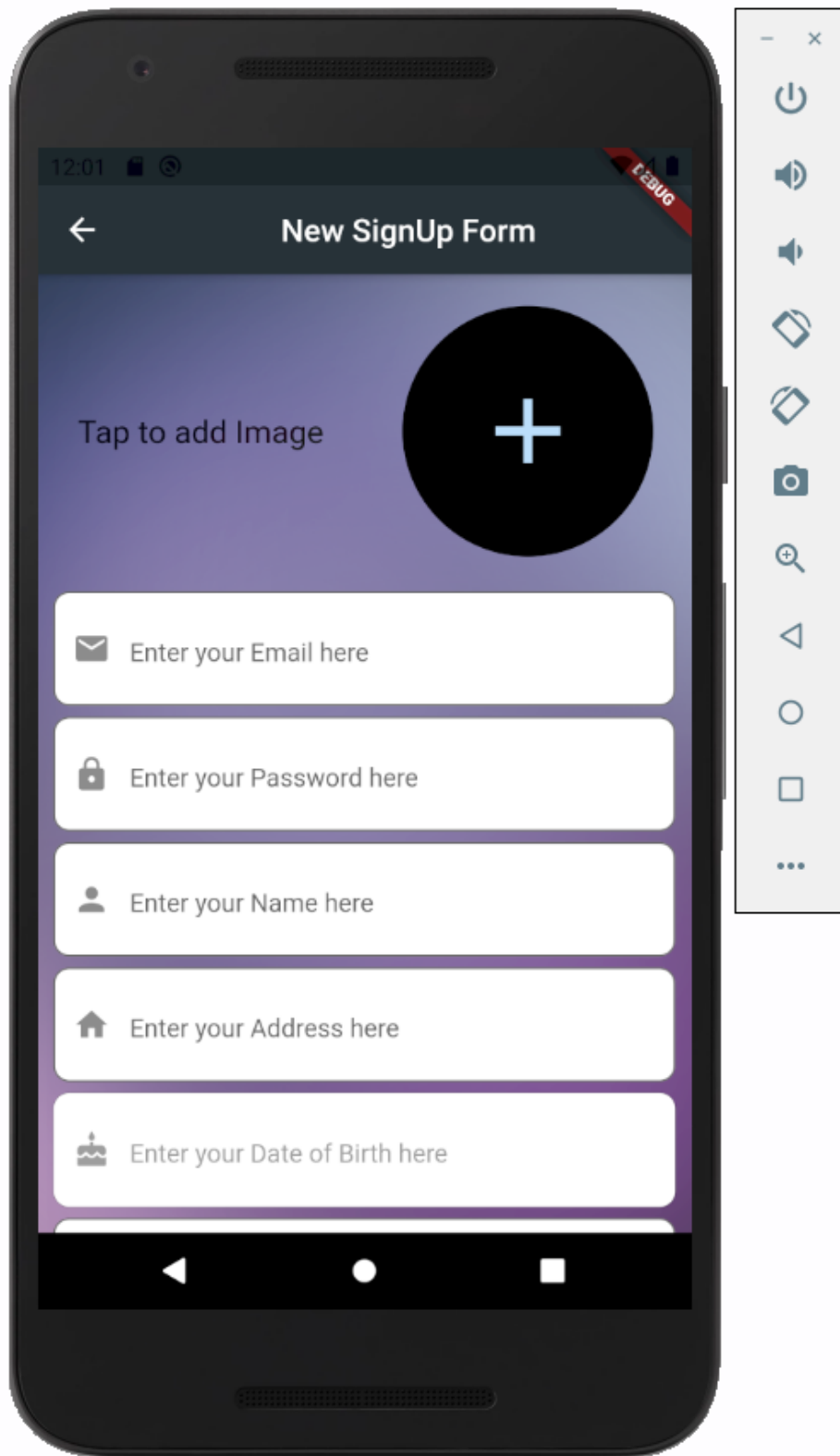


Figure-17: Signup Screen part 1

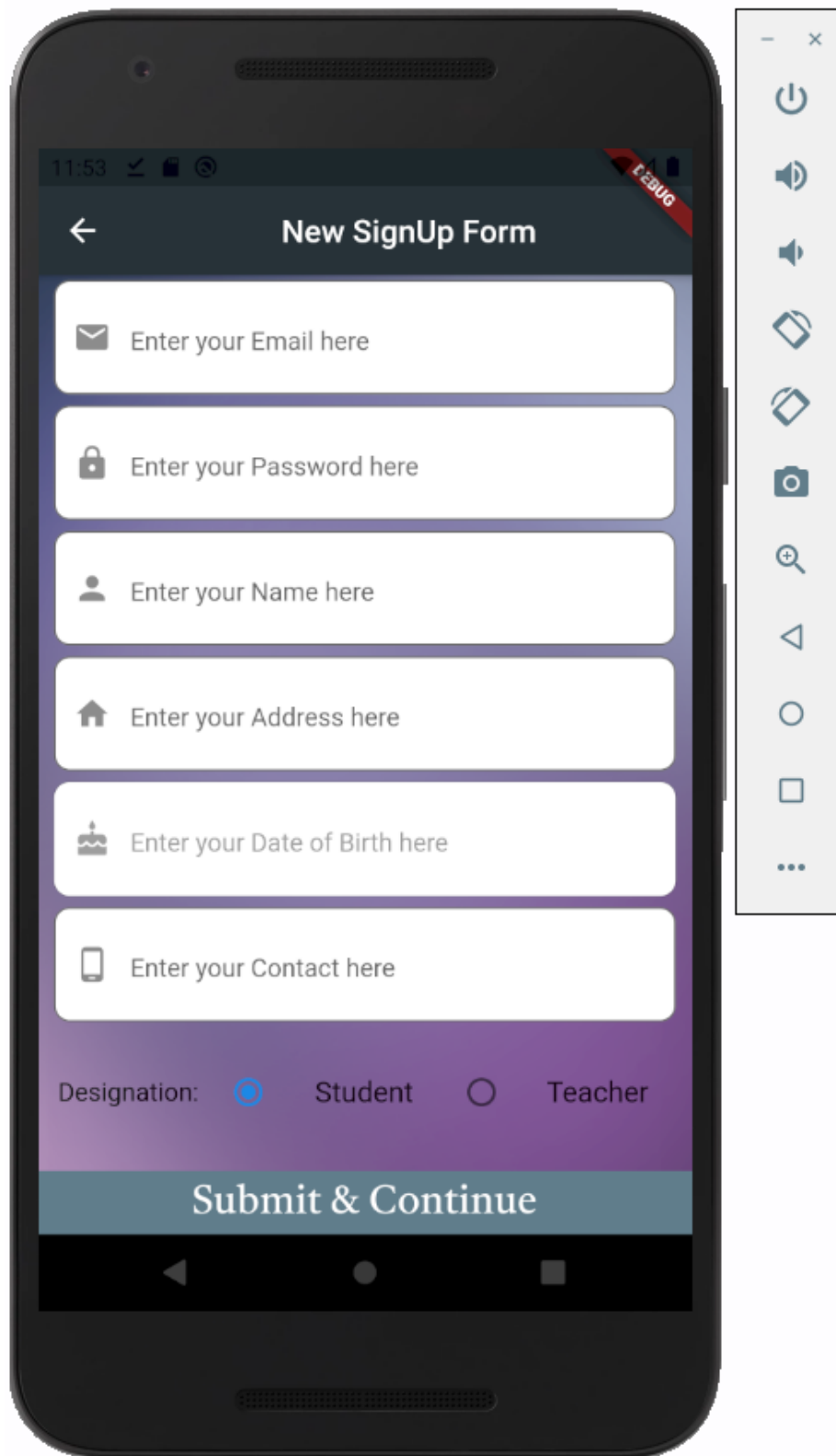


Figure-18: Signup Screen part 2

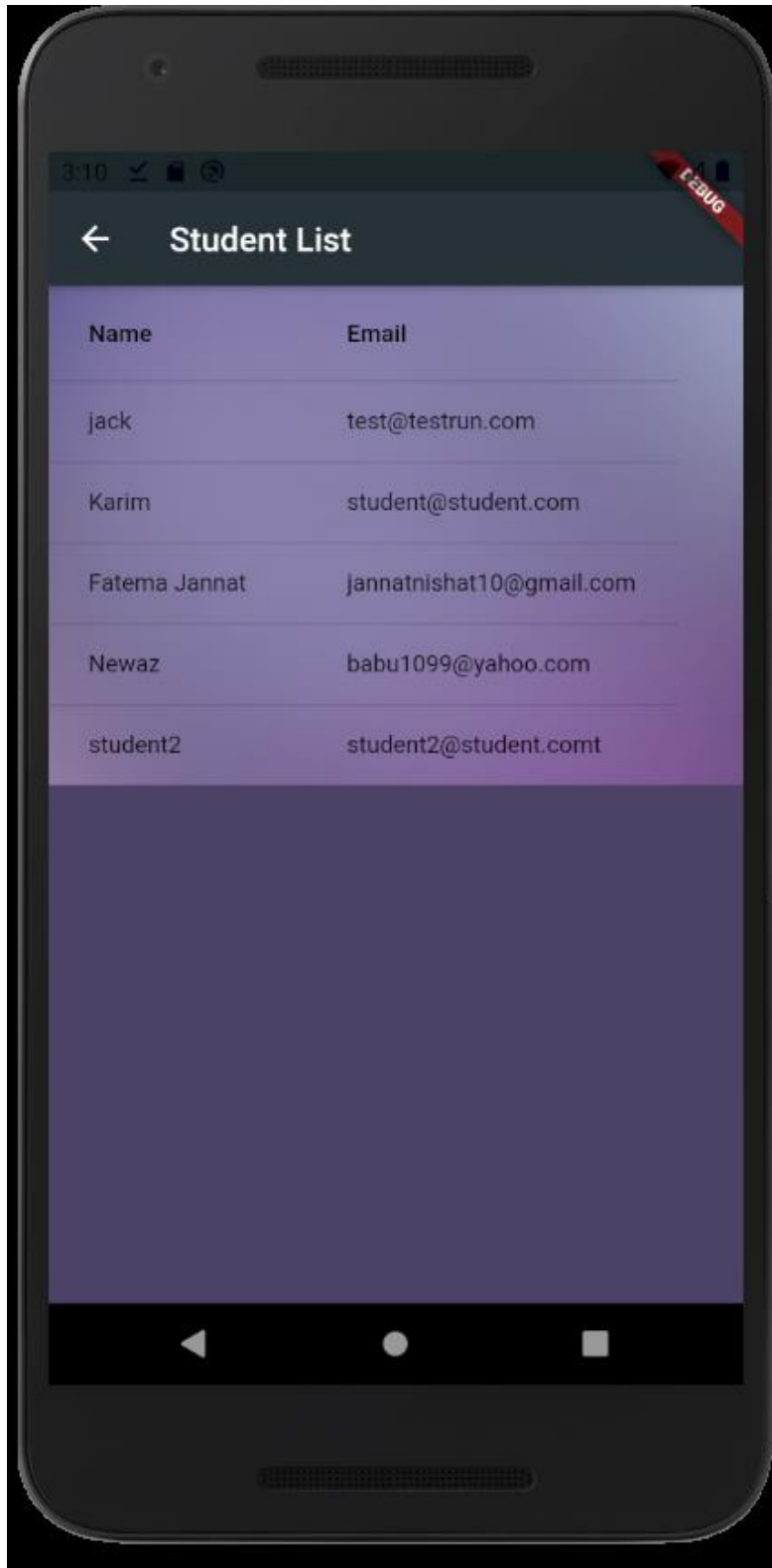


Figure-19: Student List for Teacher

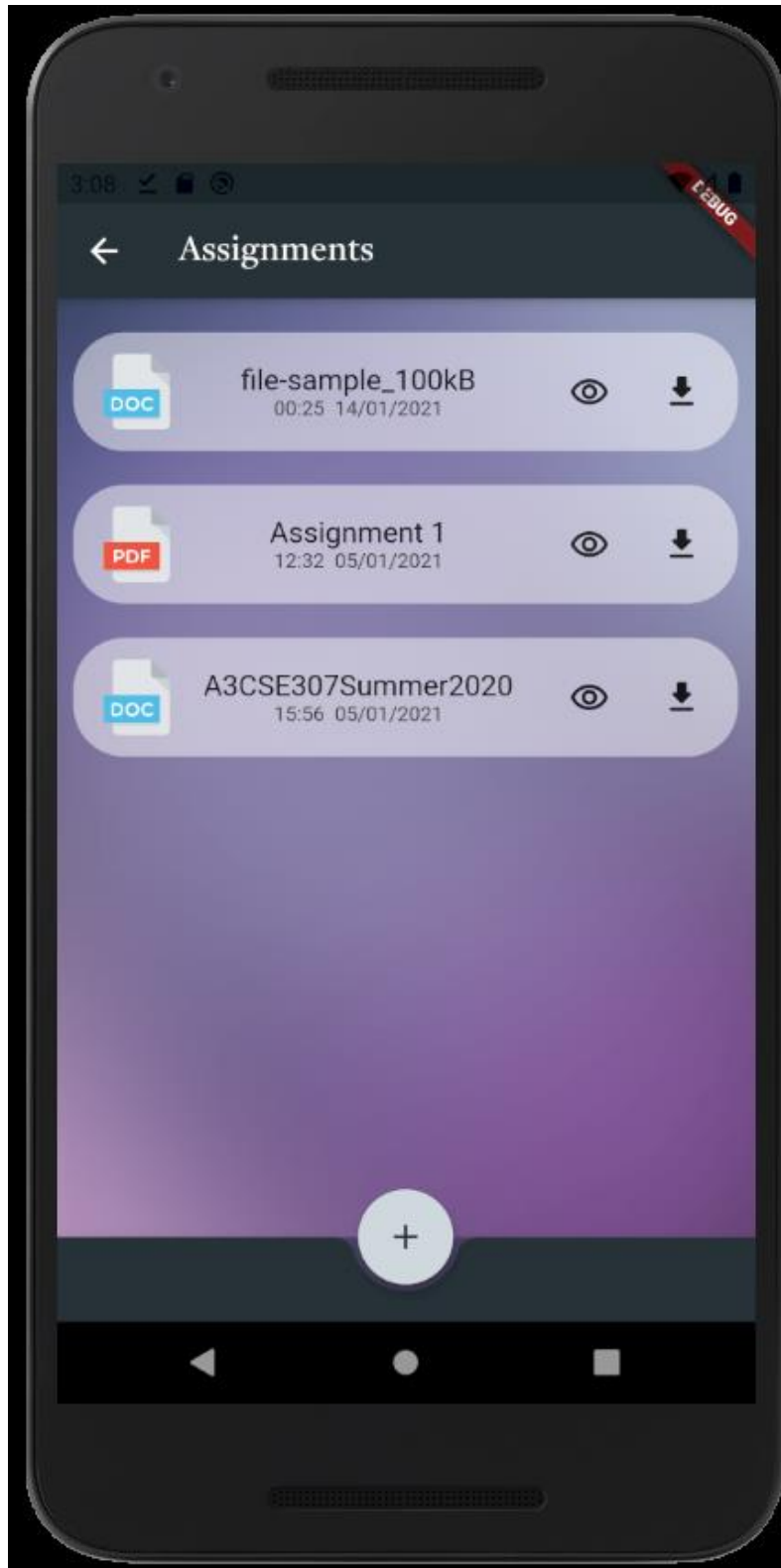


Figure-20: Assignments that were posted

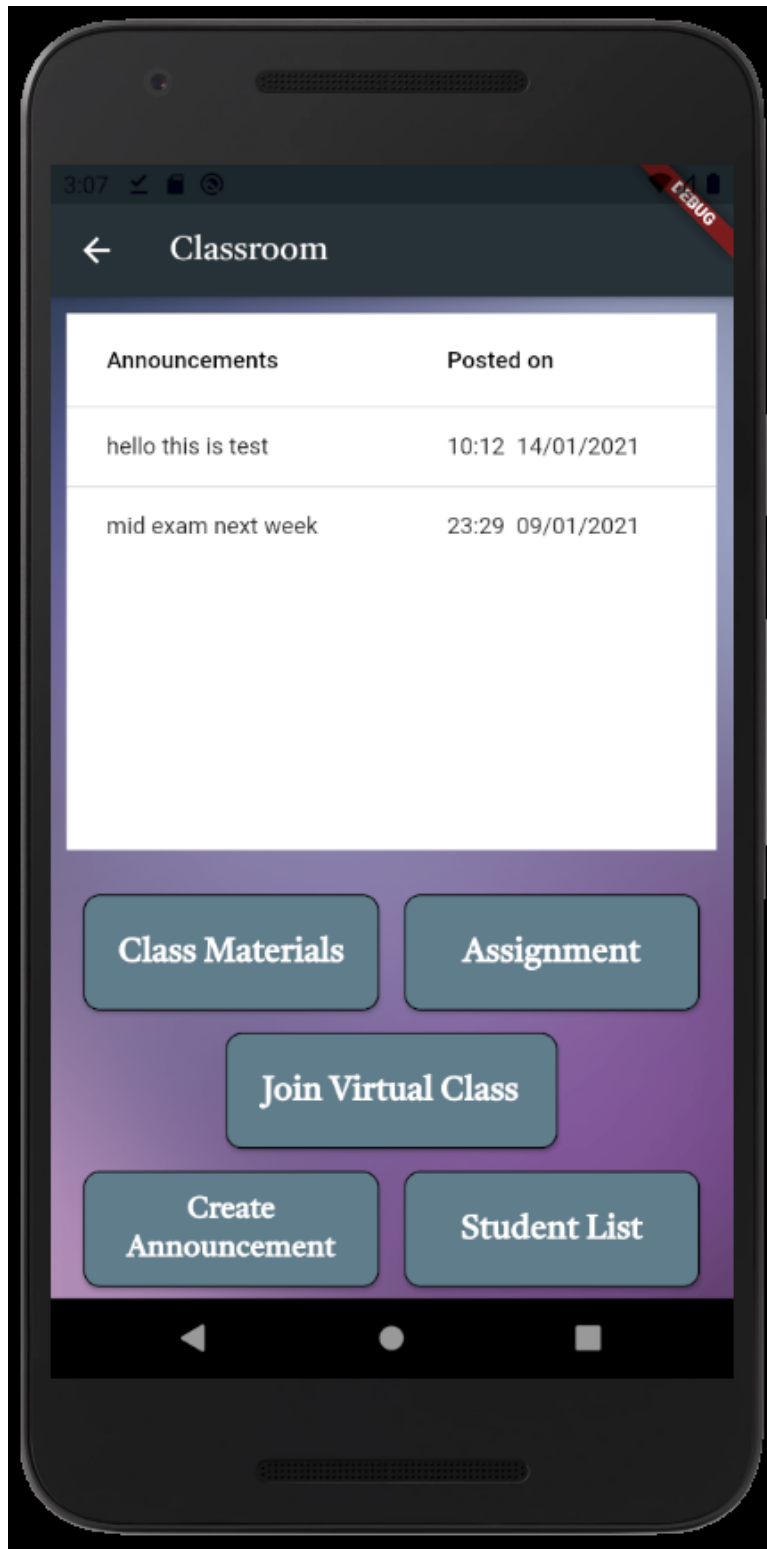


Figure-21: Classroom interface for teachers

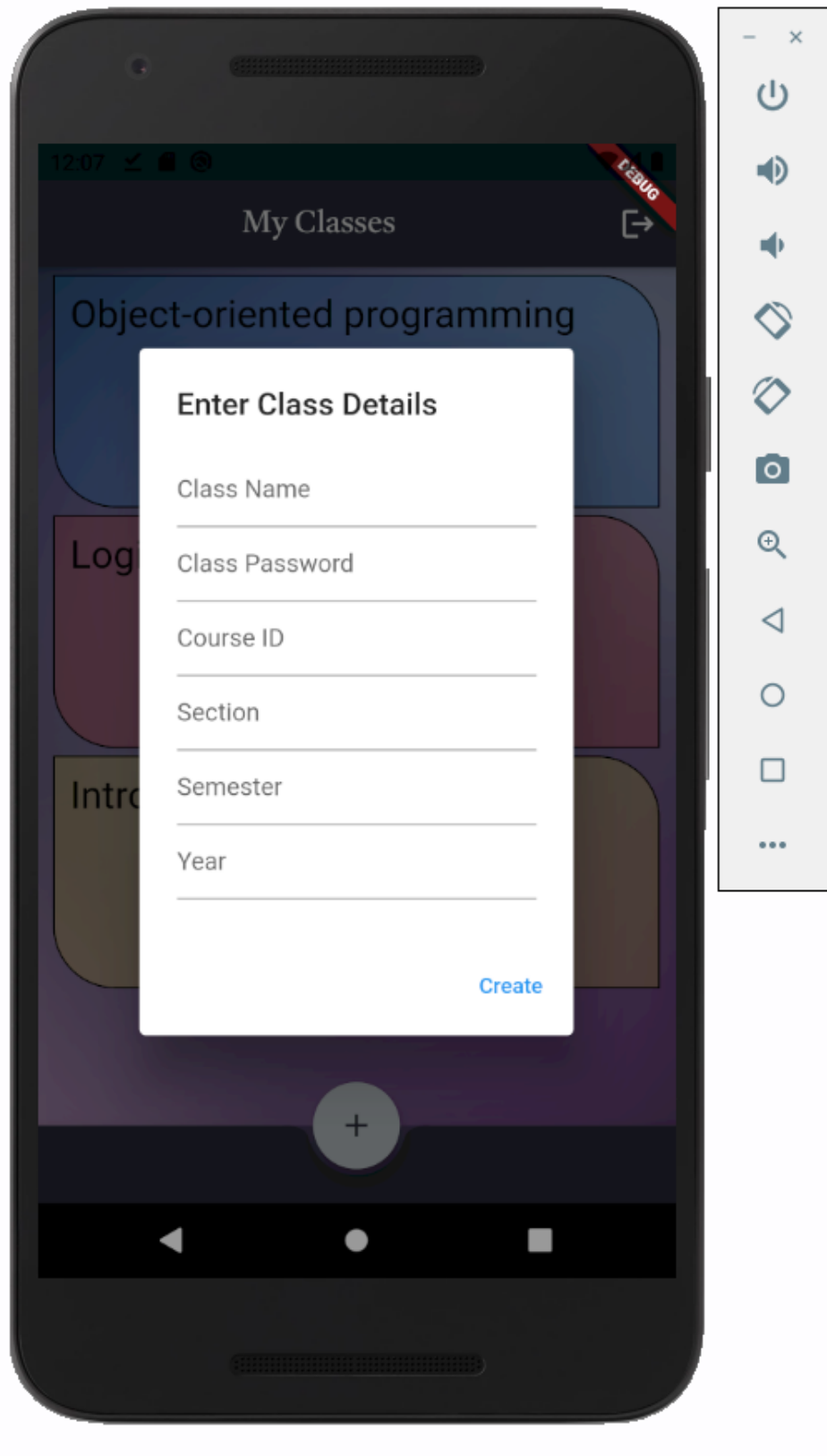


Figure-22: Creating new class by teacher

Appendix: B (Log File)

Date	Task
22/11/2020	Attend Orientation and see what others are working on.
23/11/2020	Discuss Project idea and platform to work with
24/11/2020	Introduction to Flutter, learn about its cross platform development
25/11/2020	Build small apps using flutter and dart, Run app on a physical device
26/11/2020	Learn to build better user interfaces, work with flutter widgets
29/11/2020	Design flowchart for my app, training on flutter
30/11/2020	Update flowchart, design database model
1/12/2020	Make a design for my app, get it approved
2/12/2020	Update database model, work on some front end design
3/12/2020	Work on design for my app, build various small scale app as part of training
6/12/2020	Design Login Page and add Firebase Authentication to the login page.
7/12/2020	Design Signup Page added functionality to add user image, usign image picker and image cropper packages for flutter.
8/12/2020	Build Classroom Screen, Classes Screen, Student List screen, Assignments Screen, Class Materials Screen
9/12/2020	Added logout functionality and added images and icons to project
10/12/2020	Training and watch tutorials
13/12/2020	Handle Date problems while working with date time as a requirement for user birthday, added a date picker widget.
14/12/2020	Work with all navigation for the app, and fix pop and push of navigators throughout the app, Restrict some functionality to students.
15/12/2020	Added validations to login and signup screen, handle exceptions throw by firebase
20/12/2020	Run into a Problem where needed to know if the user is a student or teacher before the screen appears, app kept crashing, tried to fix it and did some research
21/12/2020	Finally Fix the Problem with future builder.

22/12/2020	Added create class, delete class, join class functionality, added a password for teachers to delete class, to avoid deletion by mistake
23/12/2020	Work with Stream builder widget to display the classes associated with a specific user
24/12/2020	Update some color gradients used throughout the app, make designs more suited and work with contrast
27/12/2020	Research on which video conferencing platform to choose and which provides more function
28/12/2020	Install Jitsi meet package to the app, read documentation of the jitsi meet
29/12/2020	Fix links to connect the teacher and student of a specific class together securely
30/12/2020	Added Firebase Storage to the app, learn about different ways to handle files in dart and firebase
31/12/2020	Improve code, remove some unnecessary statement, and clean code
3/01/2021	Build the screen for class lecture materials and added upload, download and view functionality
4/01/2021	The file was being downloaded, but could not be opened by users, later figure out it was a pathing problem on my side.
5/01/2021	Added design to the files, improve the interface and show icons for different file types
6/01/2021	Added Assignment option to the app, where teacher can assign an assignment and students can view and upload assignment
7/01/2021	Added color and an add button to unsubmitted assignment, and a tick sign and a different color for submitted assignments, improve UI
10/01/2021	Create a functionality by which teachers can post in classes and notify students.
11/01/2021	Create the list of announcements from database and display it in classroom to be seen by all students
12/01/2021	Run into a problem where I had to fetch data from a parent in tree widget. Try to solve it.
13/01/2021	Build a screen to display the list of students enrolled in a class to be seen by the teacher.
14/01/2021	Building a Screen for teachers, where teachers can see the assignments that were assigned and the list of students who submitted it

17/01/2021	
18/01/2021	For delays in connecting to firebase database, the app remains stagnant, added a loading widget so users can know of the connection state
19/01/2021	App Fails on some Samsung devices, Trying to Work out the problem
20/01/2021	Upgraded flutter to beta version and build the release apk again to fix the Samsung issue
21/01/2021	Testing app again and improving some user interface to make it look more professional

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