VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JnanaSangama", Belgaum -590014, Karnataka.

MOBILE APPLICATION DEVELOPMENT REPORT
on

PROCSYNC

Submitted by

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Under the Guidance of
RAJESHWARI MADLI
Assistant Professor, BMSCE

in partial fulfillment for the award of the degree of
BACHELOR OF ENGINEERING
in
COMPUTER SCIENCE AND ENGINEERING

B.M.S. COLLEGE OF ENGINEERING
(Autonomous Institution under VTU)
BENGALURU-560019

Feb-2025 to June-2025

B. M. S. College of Engineering,

Bull Temple Road, Bangalore 560019

(Affiliated To Visvesvaraya Technological University, Belgaum)

Department of Computer Science and Engineering

CERTIFICATE

This is to certify that the project work entitled "**PROCSYNC**" carried out by **SANTHOSH N(1BM23CS302), SHREYAS GOWDA (1BM23CS319), SHREYAS T S (1BM23CS319) AND SUHAS B P (1BM23CS345)** who are bonafide students of **B. M. S. College of Engineering.** It is in partial fulfillment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visveswaraiah Technological University, Belgaum during the year 2024-2025. The project report has been approved as it satisfies the academic requirements in respect of **Mobile Application Development (23CS4AEMAD)** work prescribed for the said degree.

Signature of the Guide
RAJESHWARI MADLI
Assistant Professor, Dept. of CSE
BMSCE, Bengaluru

Signature of the HOD
Dr. Kavitha Sooda
Prof.& Head, Dept. of CSE
BMSCE, Bengaluru

External Viva

Name of the Examiner — Signature with date

1._____ _____

2. _____ _____

B.M.S. COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DECALARATION

We, SANTHOSH N(1BM23CS302), SHREYAS GOWDA (1BM23CS319), SHREYAS T S (1BM23CS319) AND SUHAS B P (1BM23CS345) students of 4th Semester, B.E, Department of Computer Science and Engineering, B. M. S. College of Engineering, Bangalore, hereby declare that, this Mobile Application Development entitled "PROCSYNC" has been carried out by us under the guidance of Rajeshw Madli, Assistant Professor, Department of CSE, B. M. S. College of Engineering, Bangalore during the academic semester Feb-2025 to June-2025

We also declare that to the best of our knowledge and belief, the development reported here is not from part of any other report by any other students.

Signature

SANTHOSH N (1BM23CS302)
SHREYAS GOWDA (1BM23CS319)
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Abstract

ProcSync is a role-based collaborative education application that enhances classroom communication by integrating structured academic management and real-time messaging. Designed for both teachers (Proctors) and students, the app allows educators to create virtual classrooms, share announcements, manage academic documents, and monitor student progress. Students can join these classrooms using unique codes, participate in group discussions, submit assignments, and share academic information in a secure environment. Inspired by platforms like Google Classroom and WhatsApp, ProcSync combines chat functionality with document handling and role-specific navigation. Built using Flutter and Firebase, it offers seamless cross-platform access, cloud-based storage, and secure authentication. ProcSync aims to centralize academic interactions, streamline digital classroom workflows, and foster effective teacher-student collaboration in both remote and hybrid learning environments.

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Chapter 1

Introduction

The increasing adoption of digital tools in education has transformed the traditional classroom into a more dynamic and accessible environment. However, many existing platforms either lack the simplicity required for real-time communication or the structure needed for managing academic workflows. To address this gap, ProcSync has been developed as a role-based collaborative education app that blends the core features of classroom management systems like Google Classroom with the intuitive communication style of apps like WhatsApp.

ProcSync empowers educators to create and manage virtual classrooms with ease, enabling them to share announcements, upload academic materials, and monitor student performance. Simultaneously, students are provided with a user-friendly interface to join classes, chat with peers and instructors, and submit academic information and assignments. The app emphasizes security, scalability, and role-based navigation, ensuring that teachers and students each access only the features relevant to their roles.

Leveraging the Flutter framework for cross-platform development and Firebase for real-time database, authentication, and storage solutions, ProcSync offers a seamless, responsive, and secure user experience. By centralizing academic communication and resource sharing, the application aims to foster a more connected and productive digital learning ecosystem.

Chapter 2

Hardware and Software Requirements

2.1 Hardware Requirements

Component	Minimum Requirement
Processor	Intel Core i3 or equivalent (64-bit)
RAM	4 GB (8 GB recommended for development)
Storage	500 MB free space for app (10 GB for development)
Display	1280×720 resolution minimum
Internet	Stable internet connection (required for Firebase services)
6.Mobile Device	Android 8.0+ or iOS 12.0+ (for testing or deployment)

2.2 Software Requirements

Software	Description
Flutter SDK	Open-source UI toolkit used to develop the cross-platform mobile application.
Dart Programming Language	The primary language used for writing application logic and UI components.
Android Studio / VS Code	IDEs used for coding, UI design, and running the application on emulators or devices.
Firebase Authentication	Enables secure user login via Google Sign-In and manages role-based access.
Firebase Firestore	A NoSQL real-time database used to store user profiles, messages, and classroom data.
Firebase Storage	Cloud storage solution used for uploading and retrieving shared academic documents.
BLoC (Business Logic Component)	State management architecture that separates UI from business logic for better scalability and testability.
Google Chrome / Mobile Emulator	For web-based or emulator testing of the app during development.
Git	Version control system for managing project changes and team collaboration.
Postman (optional)	API testing tool to simulate and debug backend interactions if required.

Chapter 3

Design Layouts: Screen Shots of Mobile App / Webpage

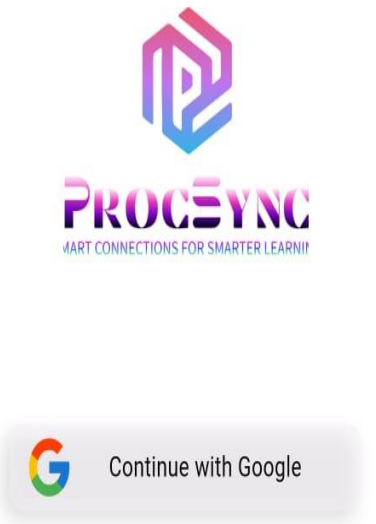

Fig3.1: Login page

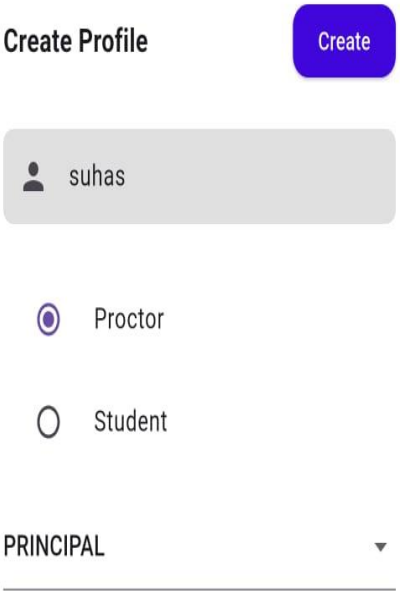

fig3.2: Procter profile creation

Fig3.3: Group section

fig3.4: Chat page

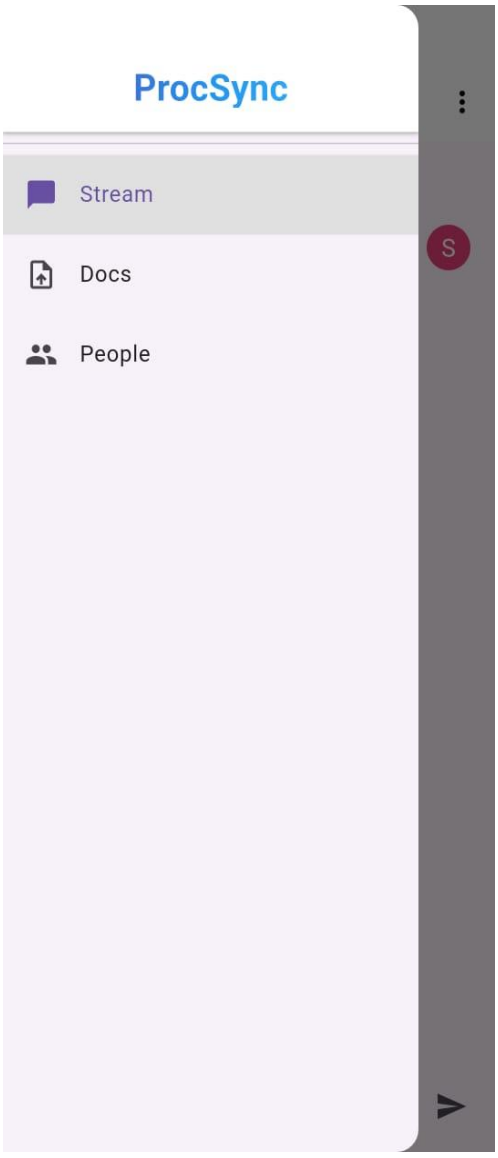

Fig3.5: Procter dashboard

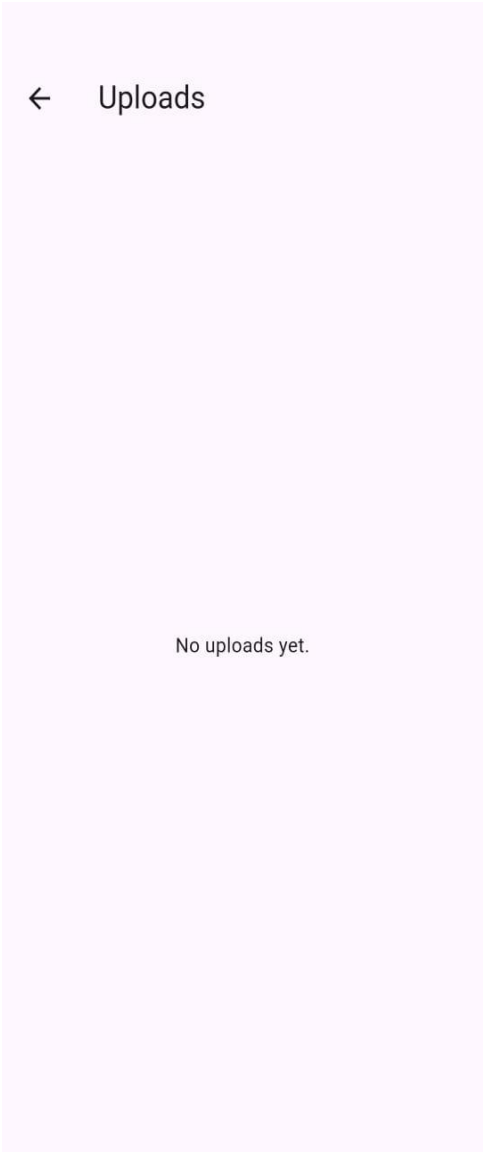

fig3.6: Uploads page

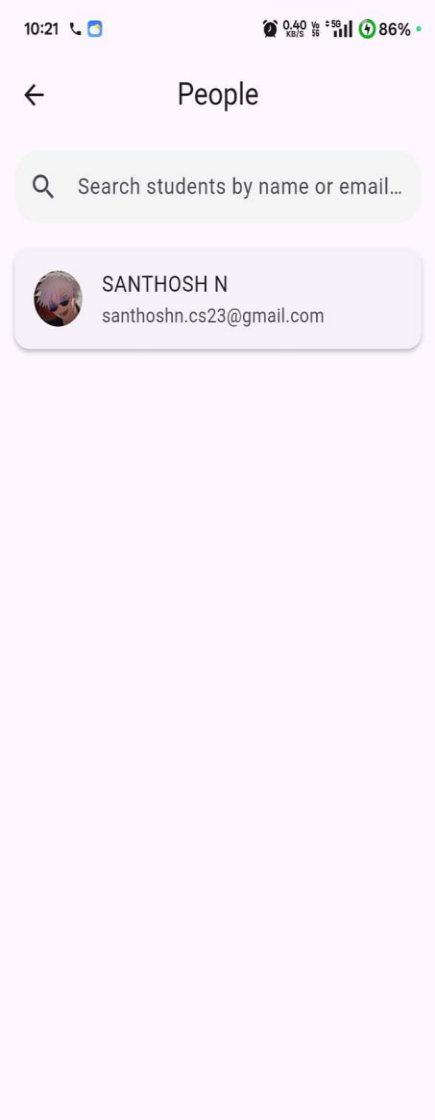

Fig3.7: Peoples page

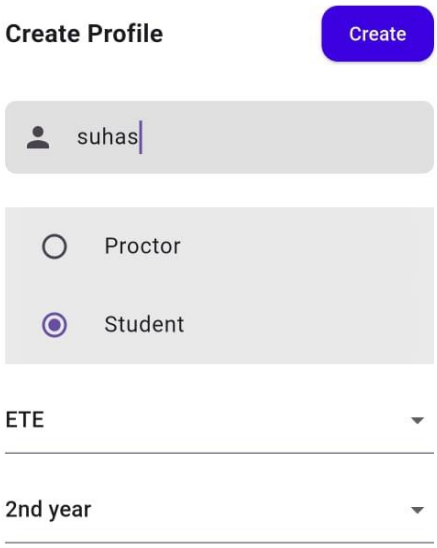

fig3.8: Student profile page

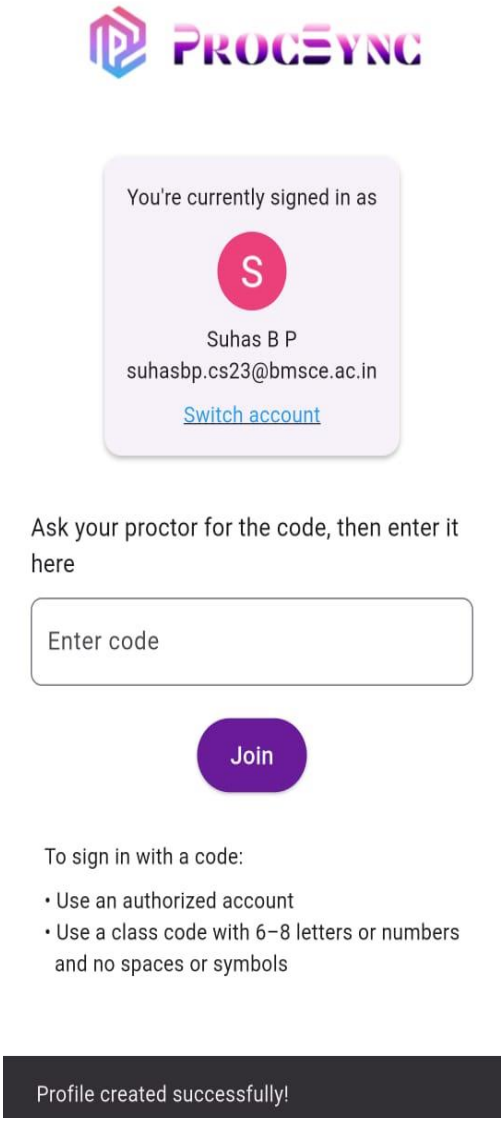

Fig3.9: Group join page

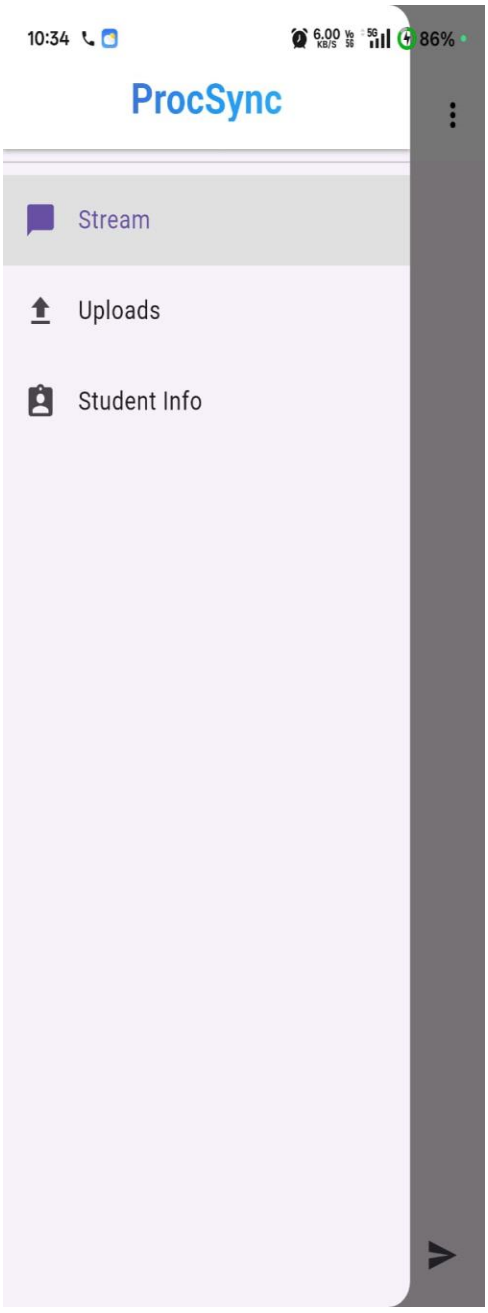

fig3.10: Student dash board

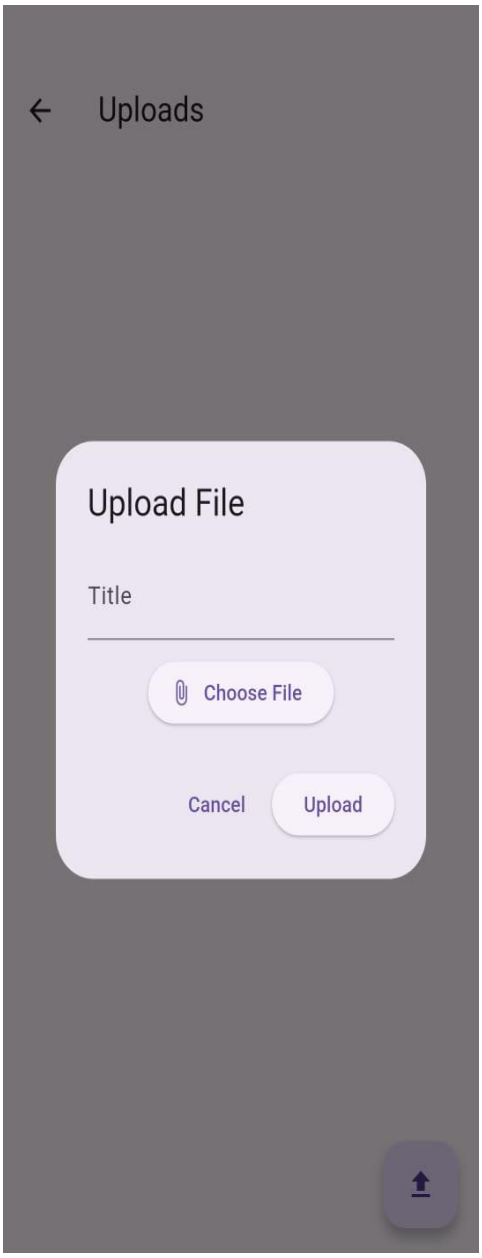

Fig3.11: Document upload page

fig3.12: Student info page

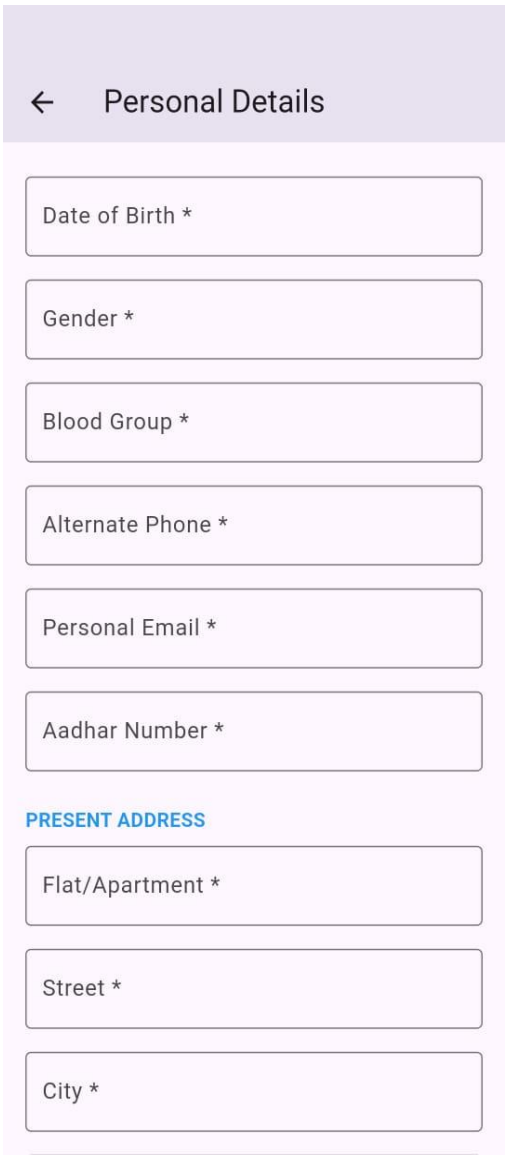

fig3.13: Student personal details

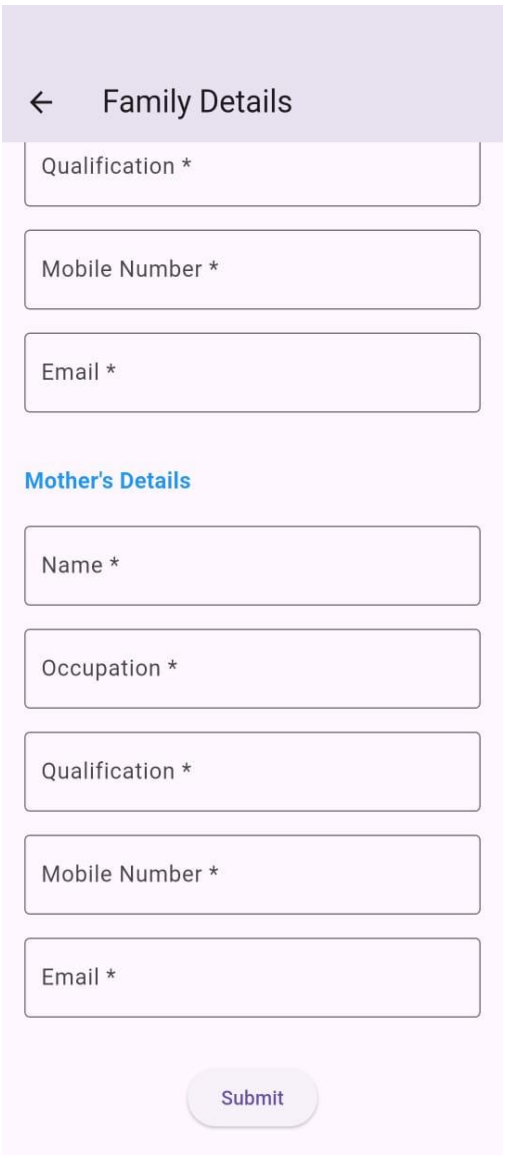

fig3.14: Student family details

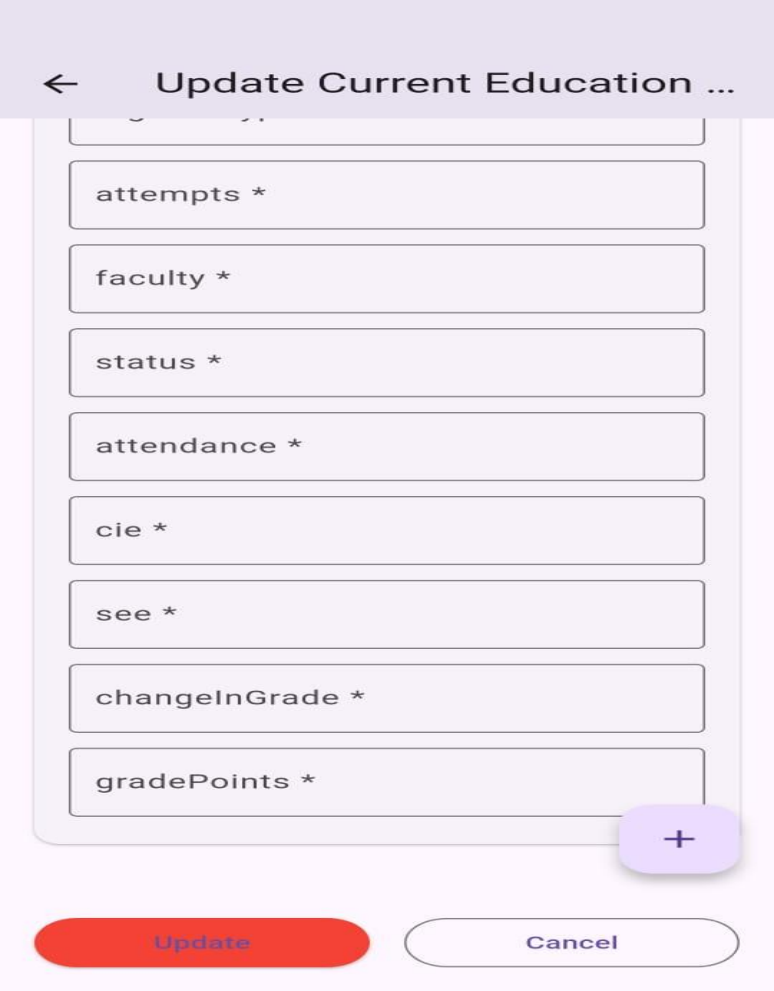

Fig3.15: Education updation page

Chapter 4

Database Table Screen shots

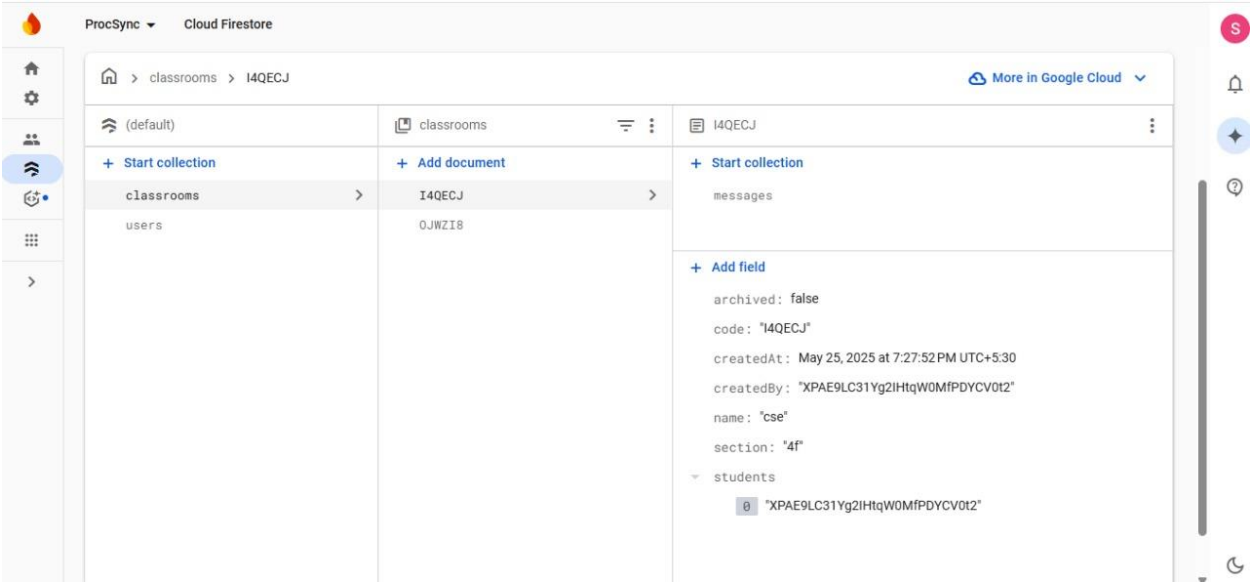

Fig 4.1:database table

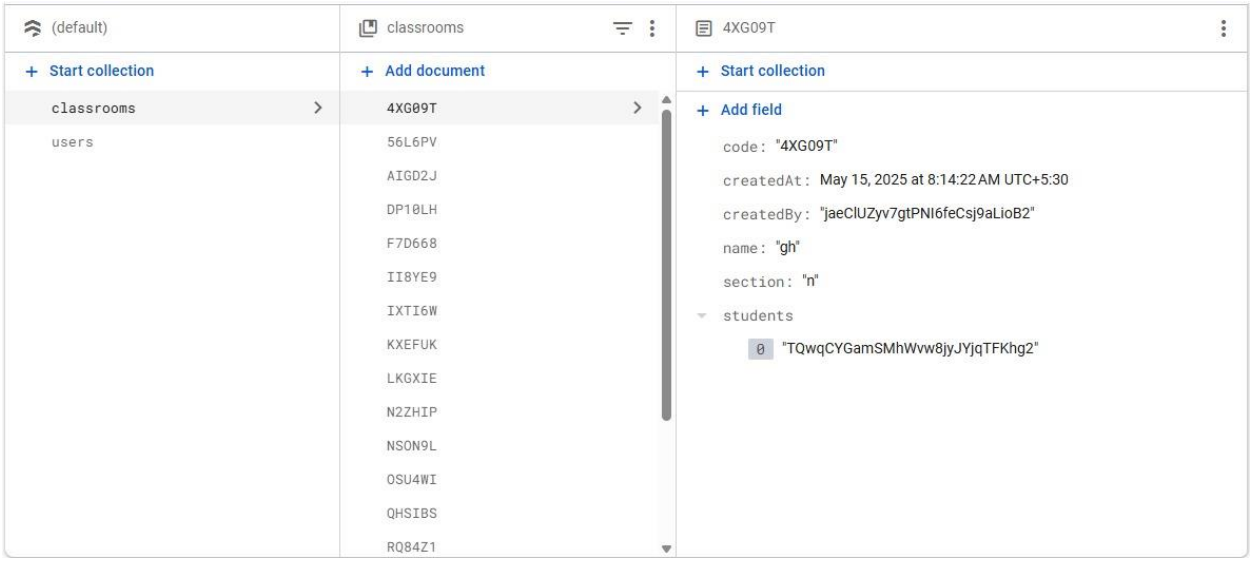

Fig 4.2: database table

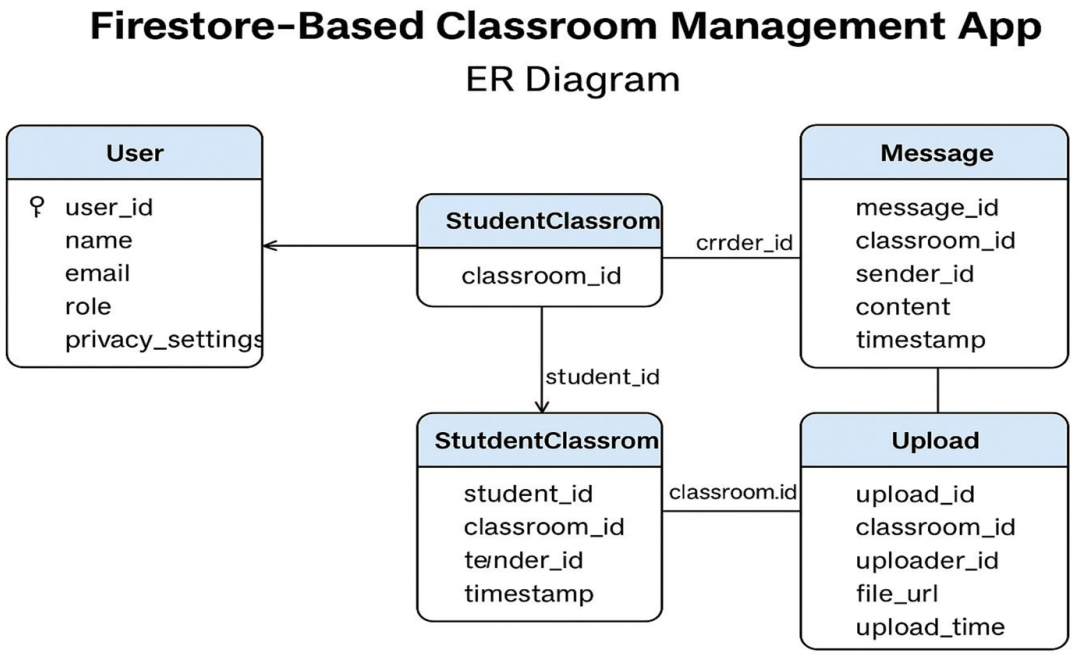

Fig 4.3: ER Diagram

Chapter 5

5.1 Conclusion

ProcSync is a robust, user-centric educational application designed to bridge the gap between academic communication and structured classroom management. By combining features from traditional learning management systems with real-time messaging and document sharing, it creates a unified platform tailored for both teachers and students. Through secure Google Sign-In, real-time Firestore integration, and intuitive role-based navigation, the app ensures a smooth and secure experience for managing classrooms, sharing resources, and engaging in academic discussions.

The successful implementation of Firebase technologies, along with Flutter's cross-platform capabilities, showcases the potential of modern frameworks in creating scalable and responsive educational solutions. ProcSync not only simplifies administrative tasks for educators but also provides students with a seamless platform to interact, learn, and stay organized.

5.2Future Work

To enhance the capabilities of ProcSync and meet evolving educational needs, several features are planned for future development:

- **Voice Messaging Support**
  Enable students and teachers to send quick voice notes within chat conversations.

- **Image and Document Previews**
  Add thumbnail and preview functionality for shared images, PDFs, and Word documents.

- **Admin Dashboard**
  Introduce higher-level administrative roles with dashboards to monitor usage, feedback, and overall app performance.

- **Analytics and Insights**
  Implement analytics tools to track student engagement, submission frequency, and classroom activity trends.

- **Offline Mode**
  Allow users to access previously loaded data and draft messages or uploads without internet, syncing once reconnected.

- **Multi-language Support**
  Localize the app to support regional languages for broader accessibility.

- **AI-Based Feedback Collection**
  Integrate AI-driven sentiment analysis for student feedback to help educators better understand classroom climate.

References

1.Flutter Documentaion

https://docs.flutter.dev/

Used for UI development and Flutter-specific implementations.

2.Firebase Documentation

https://firebase.google.com/docs

Used for backend setup, including Firestore, Firebase Auth, and Firebase Storage.

3.FontAwesome Icons

https://fontawesome.com/icons

Used for incorporating clean, consistent UI icons within the app.

4.Google Cloud Console

https://console.cloud.google.com

Used for configuring Firebase projects, Firestore databases, and authentication settings.

5.Flutter YouTube Channel

https://www.youtube.com/c/flutterdev

Official tutorials and community videos used to learn best practices and new features in Flutter.