A Minor Proposal Report On

CancelTency: Your Dream University Without Middleman

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF BACHELOR'S IN SOFTWARE ENGINEERINGUNDER POKHARA UNIVERSITY

Submitted By:

Madhu kunwar (221721)

Madhusudan Bhandari (221722)

Pranav Bhandari (221732)

Samrat Giri (221740)

Under the supervison of:

Er. Rudra Nepal

Date:

08/02/2025

Department of Software Engineering

Nepal College of Information Technology

Affiliated to Pokhara University

ACKNOWLEDGEMENT

We would like to express our sincere gratitude to all those who supported and guided us throughout the development of this minor project titled "CancelTency Your Dream University without middleman".

First and foremost, we are deeply thankful to our project supervisor, Er. Rudra Nepal, for his continuous guidance, valuable feedback, and encouragement at every stage of this project. His expertise and support played a crucial role in shaping our ideas and turning them into a working solution.

We also extend our thanks to the faculty members and staff of the Department of Software Engineering, Nepal College of Information Technology, for providing the resources and academic environment necessary for the completion of this work.

Special thanks to our friends and classmates for their constructive suggestions, collaboration, and technical discussions which helped refine the project significantly.

Finally, we are grateful to our families for their unwavering support and motivation throughout the course of this project.

Madhu Kunwar
Madhusudan Bhandari
Pranav Bhandari
Samrat Giri

ABSTRACT

CancelTency is a student-centered mobile and web-based application designed t to simplify the international universities admission process for Nepalese students. It focuses The platform empowers students to obtain reliable information, directly communication with foreign universities, and manage their application process independently not depending one the consultancies. By bypassing third-party involvement, cancelTency aims to reduce unnecessary costs, increase transparency, and promote self-reliance among students. The key features include university search and comparison tools, step-by-step application guidance, document management, and direct communication channels with university.In addition of making the studying abroad easier, this project encourages knowledge decision making for Nepalese students.Through CancelTency, students can search for universities and compare the universities, access their admission requirements and receive personalized recommendations based on their academic profiles. Additionally the platform offers features like document uploading, scholarship information, deadline tracking and a secure messaging system for direct communication with the university's admission officer.

Keywords: CancelTency, Mobile and we-based app, International univerity, Nepalese students,

TABLE OF CONTENTS

List of Figures

List of Tables

1. INTRODUCTION

International education is a transformative opportunity for Nepalese students, offering access to global academic and career paths. However, the application process for foreign colleges is challenging, including Changed(manipulated) information on university requirements, complex document submission procedures, and being dependent on unverified consultancies. International degree is a big dream but tons of Nepalese student but due to these barriers which often results to delays, errors, and mostly financial risks, can cause many problem's in student's life.

CancelTency is a mobile and web-based platform designed to address these issues by providing a centralized solution that connects Nepalese students with international colleges without the need of consultancies. With CancelTency, you can sign up securely and upload all your key documents (IELTS or GRE scores, your high school transcripts, passport, and bank statements) from your phone or laptop. CancelTency saves student's travel cost. Instead of coming to Kathmandu or Pokhara you can directly do the paperwork from home. CancelTency features document-scanning system that checks student qualifications and matches with the top-notch universities and scholarships that fits students profile. By integrating automated matching, CancelTency ensures transparency and efficiency, and informed decision making throughout the admission process.

1.1. Background

The background of the CancelTency project lies in the growing demand for international education among Nepalese students, but the process is outdated, confusing, and often time consuming, resulting mostly in loss of money.

Getting into an international university isn't just about your IELTS or GRE. It's a long time-consuming process that involveslves collecting transcripts, managfinancialial documentation, figuring out what each university wants, and ensurithat all documents match visavisa paperwork. An incorrect move can lead to delayed, rejected, and significant monetary losses. The educational consultancies providing education services, some are legit, but many try to take advantage of students. They give half-truth, charge high fees which led students to financial burden once their application is rejected. The process isn't just complicated. It is expensive, stressful, unfair, and time consuming.

CancelTency isn't just a regular app it's a trusted friend who helps students in every step of

the way, and never charges the unnecessary ”consulting fees”.

1.2. Motivation

The pursuit of international education should be an inspiring milestone, not a source of constant anxiety yet the current application process is not trust-able. Students pay NPR 20,000 for generic advice, stay up until 3 AM chasing lost transcripts, and still miss deadlines when portals crash or requirements change at the last minute. These repeated frustrations revealed a single truth: the system was built for profit, not for students' success. We've asked many students pursuing international education and conducted a survey and found students are spending hours chasing documents like IELTS scores or transcripts, paying high fees to consultancies for unreliable advice, and missing deadlines due to unclear requirements. These challenges inspired us, a group of students, to create CancelTency. Our goal is to simplify the process and empower students. The CancelTency proposal presents a solution to these challenges, offering a centralized platform to streamline applications, enhance transparency.

1.3. Objectives

CancelTency is aiming to change how students in Nepal conduct the application process for international universities. Our objectives are:

- Centralize all application documents in one place (transcripts, test scores, bank statements, passport scans).
- Create clear, direct connections to universities.
- Keep it more affordable by removing all hidden costs for international applications.
- Reduce the time, costs, and stress for Nepalese students when applying.
- Make informed decision-making easier by using intelligent technology.

1.4. Problem statement

Nepalese students have to face a confusing process and a diverse set of documents for international university applications like IELTS scores, academic transcripts, bank statements, passport scans often leading to errors, missed deadlines, and delays.Many educational consultancies in Nepal charge high fees, often NPR 20,000 or more, for generic information

or misleading advice causing financial problems to students. lack of direct communication with international universities leaves students reliant on unverified agents, increasing the risk of fraud, outdated and incorrect information. Rejection of the application causes financial burden, emotional stress for students

1.5. Scope of Project

CancelTency will be a secure, easy-to-navigate platform both on web and mobile that lets Nepali students directly apply to foreign universities, cutting out expensive consultancies fees. It aims to simplify the application process, enhance transparency, and make global education accessible to all, from streets to rural villages like Baitidi. The project includes the following core components:.

Discovery of Universities &Comparison: Allows students to search and filter international universities by country, program, tuition fees, rankings, and admission requirements, helping them getting closer to their goal

Smart Suggestion: Based on your grades, test results (IELTS, PTE, GRE) and interests, students can get get a custom list of schools and scholarships.

Information Resource Hub: Create a one-stop section with reliable, up-to-date information on admissions, scholarships, visa requirements, and language tests like IELTS or TOEFL, saving students from endless searches.

Resource Library: A single place for up-to-date guides on visas, scholarships, and language tests (IELTS, TOEFL), saving students from endless searching and more time preparing.

Direct Messaging :Communicate directly with universities officials to clear queries like requirements.

The current version of the project focuses on enabling direct admissions primarily to universities in popular destinations such as the UK, Australia, and Canada. Future scope includes expanding to more countries, integrating with visa application systems, and adding AI-powered application assistants.

2. LITERATURE REVIEW

The traditional scholarship application process is often slow and inefficient due to its reliance on manual paperwork, which leads to delays, errors, and communication issues between applicants and administrators [5, 6]. These challenges cause unnecessary stress for students and increase administrative workload. Several studies emphasize the importance of developing automated systems to streamline application submissions, reduce errors, and improve transparency [5, 7]. Digital platforms allow for centralized data management, making it easier to track application status and document verification [6]. Moreover, automation enhances fairness by minimizing human bias and ensuring consistent evaluation procedures [7]. However, existing solutions often lack user-friendly interfaces tailored to students from diverse backgrounds, highlighting the need for more accessible designs [5]. Overall, the shift to online scholarship systems promises to make the process more efficient and equitable, benefiting both applicants and institutions alike.

Web scraping has emerged as a reliable method for collecting real-time data from university websites, improving over traditional manual processes. Gupta and Singh showed that automated scraping can efficiently gather information like tuition fees, deadlines, and admission requirements directly from official sources, reducing errors and delays [1]. In the context of Nepal, Kandel and Mishra emphasized that digital systems help reduce the dependency on expensive consultancies and ensure students get unbiased information [2]. Zhang et al. discussed how scraped data can be used to recommend suitable universities and scholarships based on student profiles [3]. Ethical and technical guidelines for scraping, such as respecting robots.txt and controlling request frequency, were detailed by Glez-Peña et al. [4]. These studies highlight the potential of integrating scraping into platforms like CancelTency to improve accessibility and accuracy in international applications

Another critical aspect explored in recent studies is the role of technology in building trust and empowering students during the international application process. Many students face uncertainty due to lack of transparent information and unclear communication channels with universities [2]. Platforms that combine document management with direct university communication have shown promise in increasing confidence and reducing anxiety among applicants [7]. Furthermore, mobile accessibility plays a key role, especially for students in remote areas with limited resources [3]. Integrating AI-driven recommendations tailored to individual profiles not only saves time but also helps students make more informed choices [1]. Overall, technology-driven solutions like CancelTency could transform the way Nepalese students approach higher education abroad, making the journey and more transparent.

3. THEORETICAL BACKGROUND

First, students today are more comfortable using mobile and web apps to manage different parts of their lives, including education. Many platforms like online banking or travel booking apps use self-service technology, where users do things on their own without needing a middleman. cancelTency applies the same idea to foreign university applications, allowing students to apply directly without using costly consultancies.

Second, the concept of user-centered design helps make sure the app is simple, easy to use, and built around the actual needs of students in Nepal. The platform gives access to reliable information, guides students step-by-step, and makes the entire admission process more transparent.

Lastly, with the use of cloud technology and secure data handling, students can safely store and submit their documents online and get updates in real-time. The goal is to reduce confusion, save money, and give students more control over their own education journey.]

First, students today are more comfortable using mobile and web apps to manage different parts of their lives, including education. Many platforms like online banking or travel booking apps use self-service technology, where users do things on their own without needing a middleman. cancelTency applies the same idea to foreign university applications, allowing students to apply directly without using costly consultancies.

Second, the concept of user-centered design helps make sure the app is simple, easy to use, and built around the actual needs of students in Nepal. The platform gives access to reliable information, guides students step-by-step, and makes the entire admission process more transparent.

Lastly, with the use of cloud technology and secure data handling, students can safely store and submit their documents online and get updates in real-time. The goal is to reduce confusion, save money, and give students more control over their own education journey.

4. Methodology

CancelTency is a mobile and web application that uses a adaptable approach to make easier for Nepalese students to apply for f international universitie., It adopts a structured yet flexible process. Using modern technologies like Flutter, Node.js, Web scraping, OCR.space API, and Firebase. The project goal is to deliver a safe, secure, easy to use and user-friendly solution to specially students who are trying to pursue international education and those who are rejected already due to error of consultancies. We are employing the Agile Scrum methodology to ensure iterative development, continuous feedback, and alignment with the needs of students from Kathmandu to rural areas like Samagaun.

4.1. Technology Stack and Rationale

The technology stack is carefully selected to meet the project's requirements , for efficient data processing, and real-time functionality, ensuring user-friendly experience for Nepalese students.

- **Frontend: Flutter**
  - *Description*: Flutter is an open-source UI toolkit by Google that enables cross-platform application development from a single codebase.
  - *Rationale*: Chosen for its ability to deliver high-performance, visually appealing applications with a single codebase, reducing development time. Its rich widget library and hot reload feature facilitate rapid UI development.
  - *Usage*: Flutter will be used to create the mobile app interface, ensuring a smooth experience for students and consultancies on iOS and Android platforms.
- **Backend: Node.js**
  - *Description*: Node.js is a JavaScript runtime built on Chrome's V8 engine, known for its efficient, event-driven,
  - *Rationale*: Ideal for handling concurrent user requests and large-scale data interactions.
  - *Usage*: The backend will be built with Node.js, which will support authentication, document uploading , and the logic behind university matching and recommendation.

- **Data Collection: Web Scraping**
  - *Description*: Web scraping involves programmatically extracting data from websites.
  - *Rationale*: Essential for gathering up-to-date including information such as minimum test scores, tuition fees, deadlines, and course prerequisites.
  - *Usage*: Libraries like Puppeteer or Cheerio will scrape data from university websites to maintain a reliable database.
- **Document Processing: OCR.space**
  - *Description*: OCR.space API provides Optical Character Recognition (OCR) capabilities to extract text from images and PDFs.
  - *Rationale*: Critical for scanning and extracting data from documents (e.g., IELTS/PTE scores, educational certificates, passports, financial proofs) to enable automated matching.
  - *Usage*: Integrated into the backend to process uploaded documents and extract relevant data for the matching algorithm.
- **Weighted Scoring Algorithm**
  - *Description*: The weighted scoring algorithm is a custom-developed system that matches student profiles to university requirements by assigning weighted scores to key criteria, generating admission probability scores for personalized recommendations.
  - *Rationale*: Essential for providing tailored university and scholarship recommendations, aligning student qualifications (e.g., test scores, GPA) with university criteria. This reduces reliance on manual consultancy advice, promoting transparency and efficiency for Nepalese students pursuing international education.
  - *Usage*: The algorithm processes student data (e.g., IELTS/PTE scores, GPA, course prerequisites, financial readiness) and university requirements scraped from websites to output a ranked list of suitable universities and scholarships, integrated into the Node.js backend.
  - *Progress*: An initial version of the algorithm has been implemented, using a weighted scoring system: IELTS/PTE scores (40%), GPA (30%), course prerequisites (20%), and financial readiness (10%). Testing with 15 student profiles achieved 80% accuracy in matching users to suitable universities in the UK, Australia, and Canada. Refinements are ongoing to incorporate scholarship data and

improve recommendation accuracy, with full integration into the recommendation system planned for the next sprint.

- **Real-time Data Management: Firebase**
  - *Description*: Firebase is a backend-as-a-service platform offering real-time databases, authentication, cloud storage, and cloud functions.
  - *Rationale*: Provides secure, scalable, and real-time data management for user profiles, document storage, and dynamic updates.
  - *Usage*:
    * Firebase Authentication: For secure user registration and login.
    * Firestore: A NoSQL database for storing user profiles, document data, and university information.
    * Cloud Storage: For securely storing uploaded documents.
    * Cloud Functions: For server-side logic, such as processing documents or sending notifications.

4.2. System Architecture

The CancelTency platform adopts a client-server architecture with the following components:

- **Client (Mobile App)**: Built with Flutter, provides a user-friendly interface for students,
- **Server (Backend)**: Developed with Node.js, hadndling API requests, business logic, python and integration with external services.
- **Database**: Firestore for real-time data storage and retrieval.
- **Storage**: Firebase Cloud Storage for document uploads.
- **External Services**:
  - OCR.space for document scanning and text extraction.
  - Web scraping scripts for collecting university data.

The architecture ensures seamless communication between the mobile app and backend via RESTful APIs, with the backend interacting with Firebase and external APIs as needed.

4.3. Development Process

The development of the CancelTency follows an Agile Scrum methodology,utilizing two-week sprints for iterative development, continuous feedback.

- **Requirement Analysis (1 week)**:
  - Conduct interviews with students and consultancies to understand needs and explain points.
  - Analyze existing platforms to identify gaps CancelTency can address.
- **Design (1 week)**:
  - Create wireframes and mockups using tools like Figma (`https://www.figma.com`).
  - Design the Firestore database schema for efficient data management.
  - Plan API endpoints and server-side logic.
- **Implementation (4 weeks)**:
  - Develop the frontend using Flutter for intuitive, responsive UIs.
  - Implement the backend with Node.js, integrating Firebase and OCR space API.
  - Write web scraping scripts using Puppeteer (`https://pptr.dev`) to collect university data.
  - Integrate OCR space API (`https://cloud.google.com/vision`) for document processing.
- **Testing (1 week)**:
  - Perform unit testing for Flutter widgets and Node.js functions.
  - Conduct integration testing for frontend-backend interactions.
  - Perform user acceptance testing with a pilot group.
  - Ensure security testing for authentication and document storage.
- **Deployment (1 week)**:
  - Deploy the mobile app to the App Store and Google Play Store.
  - Host the backend on a cloud platform like Heroku (`https://www.heroku.com`).
  - Set up CI/CD pipelines for automated testing and deployment.

- **Maintenance and Iteration (Continue..)**:
  - Monitor performance and user feedback.
  - Release updates to fix bugs and add features.

4.4. Key Algorithms and Processes

- **Document Scanning and Text Extraction**:
  - Documents (e.g., IELTS scores, certificates) are processed using OCR.space API.
  - Extracted text is parsed to identify key data points (e.g., scores, grades).
- **Probabilistic University Matching**:
  - A weighted scoring algorithm matches student qualifications with university requirements.
  - Factors include IELTS/PTE scores (40%), GPA (30%), course prerequisites (20%), and financial readiness (10%).
  - Outputs admission probability scores for each university.

5. System design

5.1. Use Case Diagram

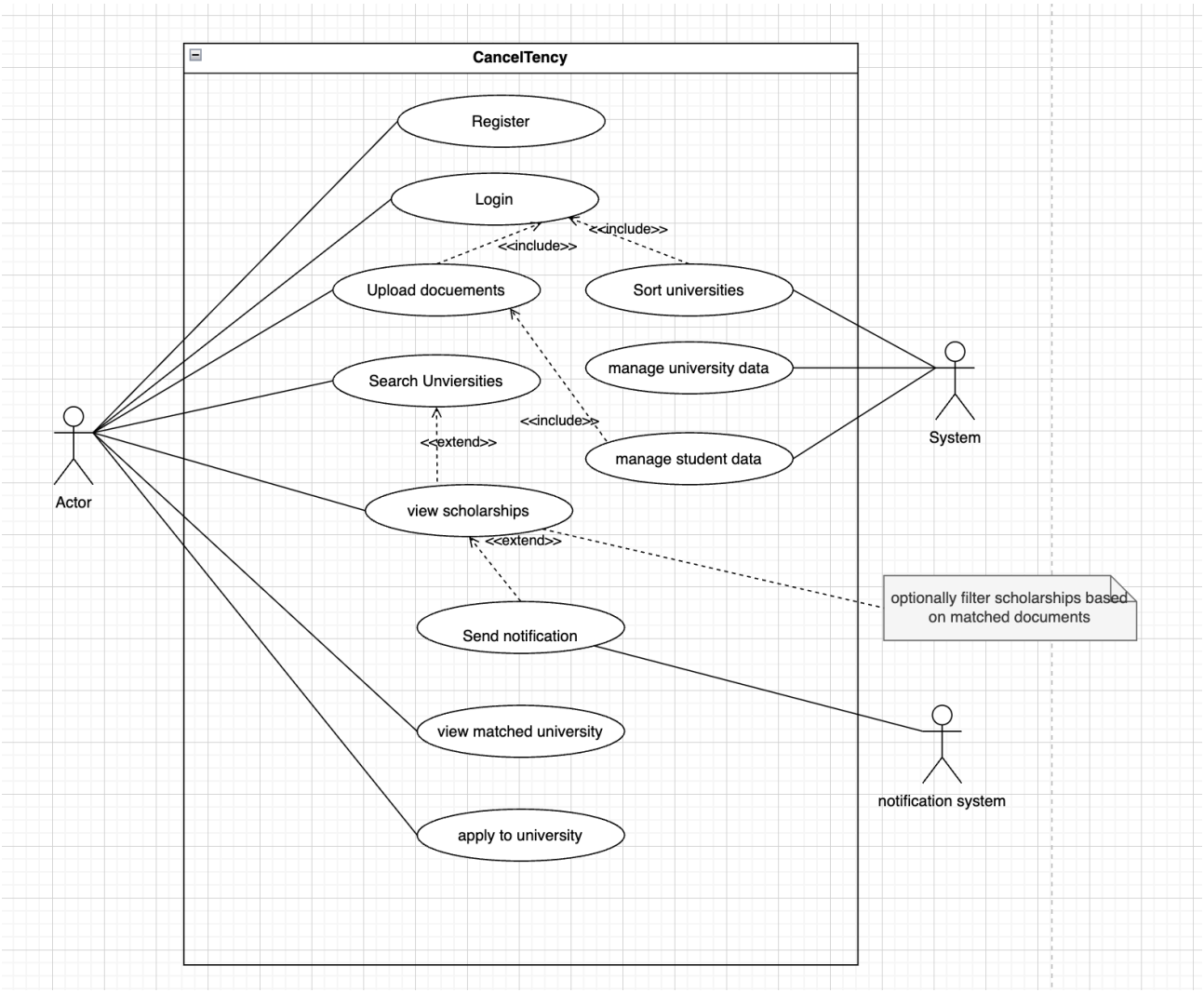

Figure 5.1: Use Case Diagram of the System

5.2. Entity Relationship Diagram (ERD)

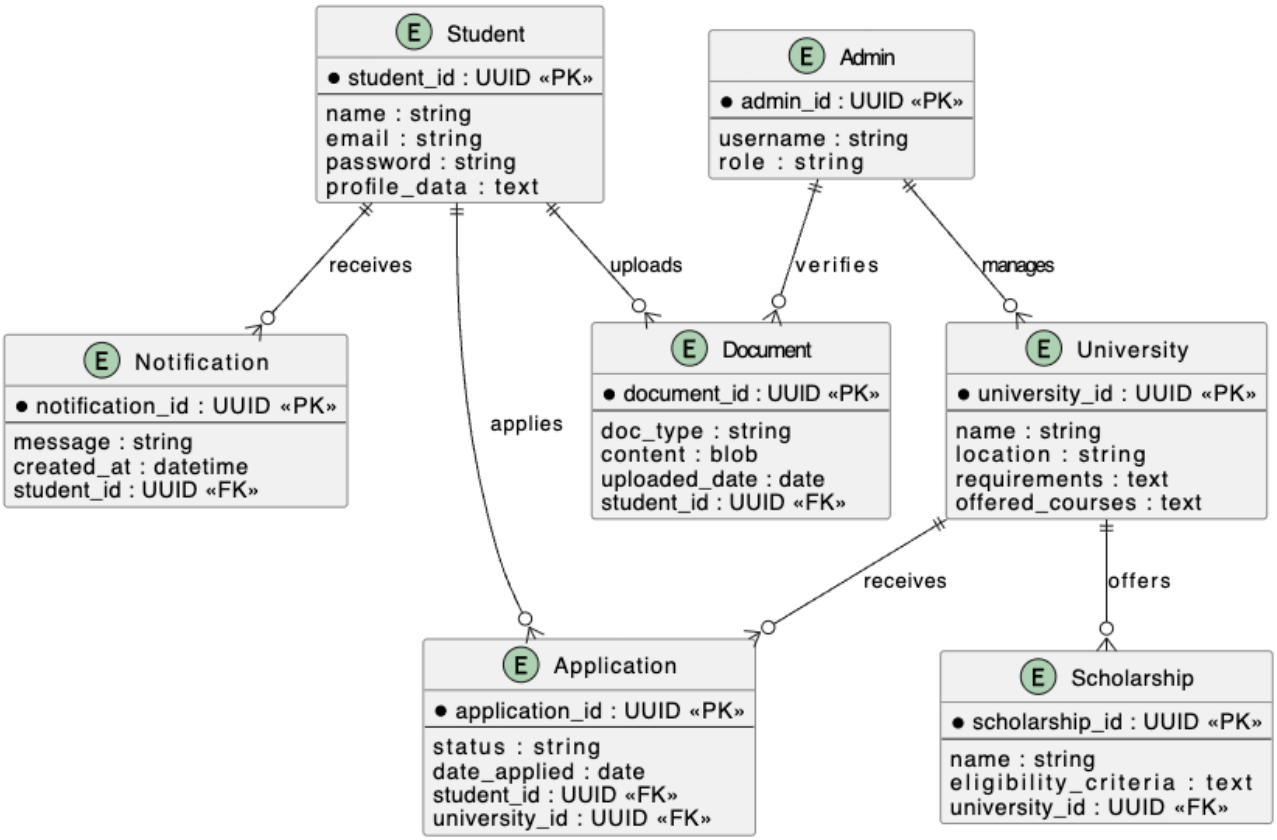

Figure 5.2: Entity relationship diagram

5.3. Sequence diagram

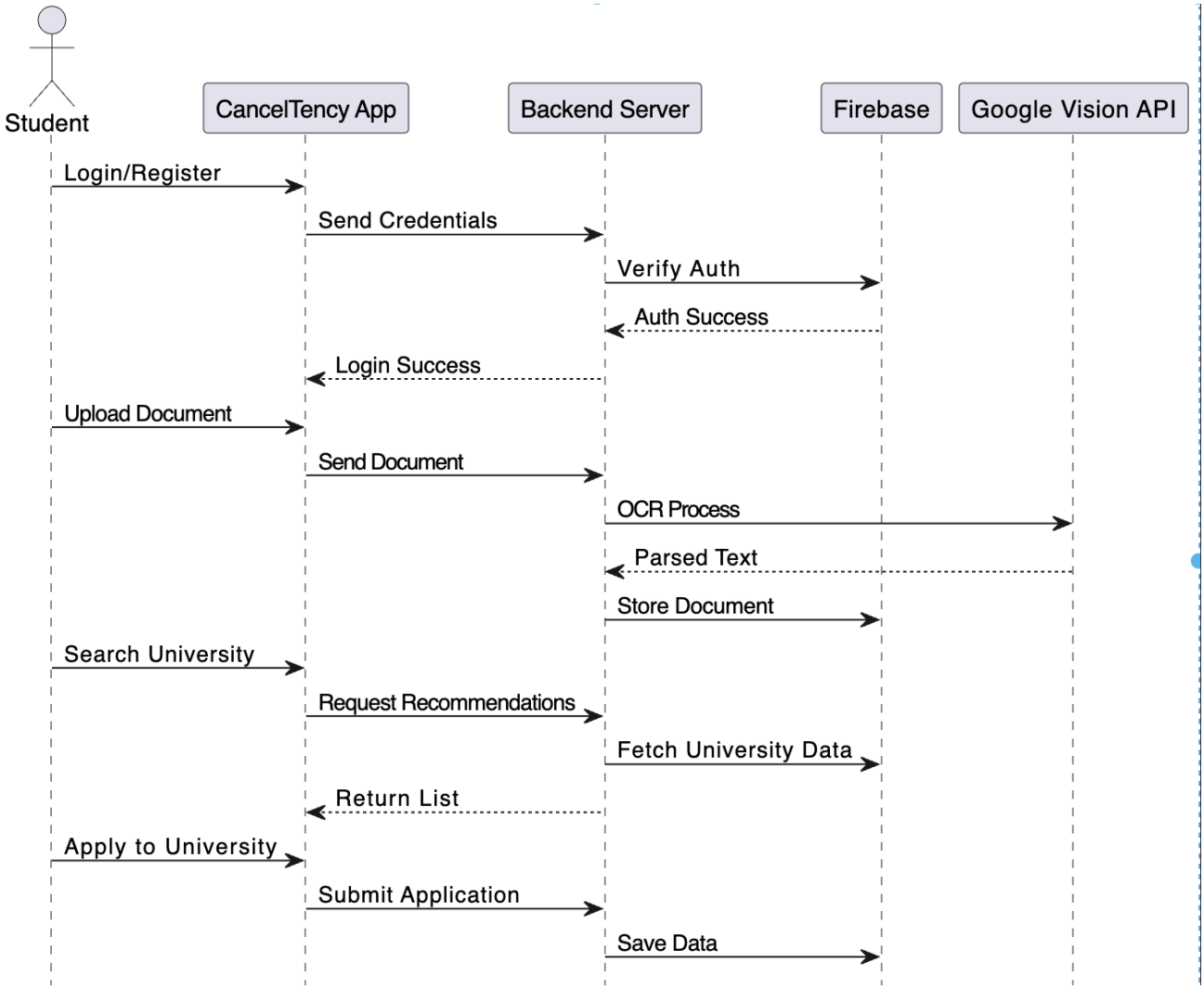

Figure 5.3: Sequence diagram

6. Challenges and Mitigations

- **Data Accuracy in Web Scraping**:
  - *Challenge*: University websites may change, affecting scraped data reliability.
  - *Mitigation*: Implement robust error handling and periodic script validation. Use caching for fallback data.
- **Document Processing Accuracy**:
  - *Challenge*: OCR may struggle with poorly scanned documents.
  - *Mitigation*: Provide upload guidelines and manual verification for low-confidence OCR results.
- **Scalability**:
  - *Challenge*: High user and document volumes may strain the system.
  - *Mitigation*: Use scalable cloud services like Firebase and optimize database queries.
- **User Adoption**:
  - *Challenge*: Convincing students and consultancies to use the platform.
  - *Mitigation*: Conduct marketing campaigns and offer free trials.

7. Project Timeline and Task distribution

7.1. Project timeline

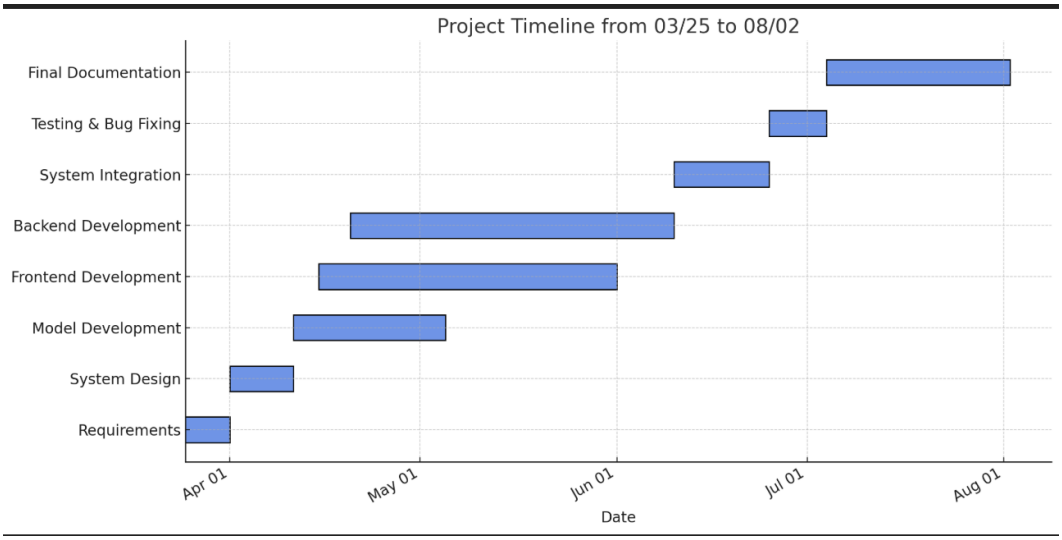

Figure 7.1: Gantt chart

7.2. Team Role Division

S.N.	Team Member	Role and Responsibility
1	Madhu Kunwar	QA: Conducts testing, tracks bugs. Backend Developer: Responsible for server setup, database design, and API development.
2	Pranav Bhandari	Backend Developer: Responsible for server setup, database design, and API development. QA: Conducts testing, tracks bugs.
3	Madhusudan Bhandari	Frontend Developer: Designs UI/UX and develops web and mobile interfaces. Handles planning, requirement analysis
4	Samrat Giri	Frontend Developer: Designs UI/UX and develops web and mobile interfaces.Handles planning, requirement analysis

Table 7.1: Compact Role Distribution Among Team Members

7.3. Budget Estimation

1. Frontend, Backend UI Design Status: Done by ourselves

Budget Needed: No budget required

Description: The development of the Flutter-based frontend, backend APIs (endpoints), and the entire UI/UX design have already been completed by us. Hence, no cost is required in these areas.

2. Authentication Module Estimated Cost: NPR 5,000 – NPR 12,000

Description: This covers implementing secure user login/signup, password hashing (e.g., bcrypt), JWT (JSON Web Token) generation and validation, token expiration logic, and secured access to protected routes.

If you use Firebase Authentication, it may be free for up to 10K users/month.

If you develop a custom JWT-based auth system, this cost is for the time or help needed from an expert to make it production-ready.

3. Testing Estimated Cost: NPR 4,000 – NPR 8,000

Description: This includes testing the authentication flow, validating user input, error handling, checking API responses, mobile responsiveness, and fixing any bugs.

Manual testing may be done in-house for free.

This cost applies if hiring someone for quality assurance (QA) testing or writing unit/integration tests.

4. Hosting (Backend Server/API) Estimated Cost: NPR 5,000 – NPR 10,000 per year

Description: This covers hosting your backend API endpoints (e.g., /api/auth/login, /api/users, etc.) on a reliable cloud platform like Render, Heroku, Railway, or a basic VPS (DigitalOcean, Hostinger, etc.).

Free tiers are available on some platforms, but they often go to sleep or have limits.

5. Domain Name Estimated Cost: NPR 1,500 – NPR 2,000 per year

Description: Buying a custom domain like udhann.com for production use, from providers like GoDaddy, Namecheap, or Google Domains.

A domain is optional during development but is essential for branding and deployment in production.

8. Progress details

The CancelTency project has been completed properly. The frontend of the application has been developed using Flutter, ensuring a clean and responsive user interface. The backend, built with Node.js and Firebase, has been successfully integrated with the frontend, allowing users to register, log in, and upload documents along with various important features given in description.

8.1. Completed Work

- Frontend design and development using Flutter.
- Backend development using Node.js and Firebase.
- Integration of frontend and backend.
- User authentication and basic document upload functionality.
- Integration of Google Vision API for OCR-based document reading.
- Implementation of web scraping to fetch university information (deadlines, requirements, etc.).
- Development of machine learning-based university matching system based on user profile and documents.

8.1.1. UI view

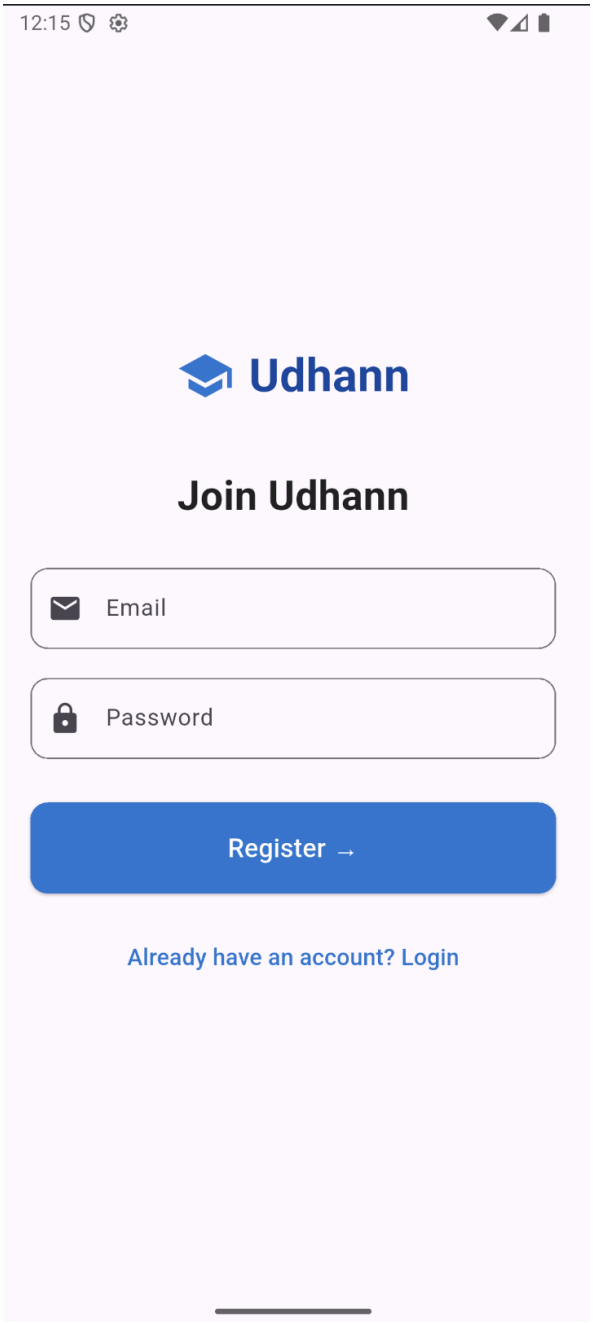

Figure 8.1: Login page

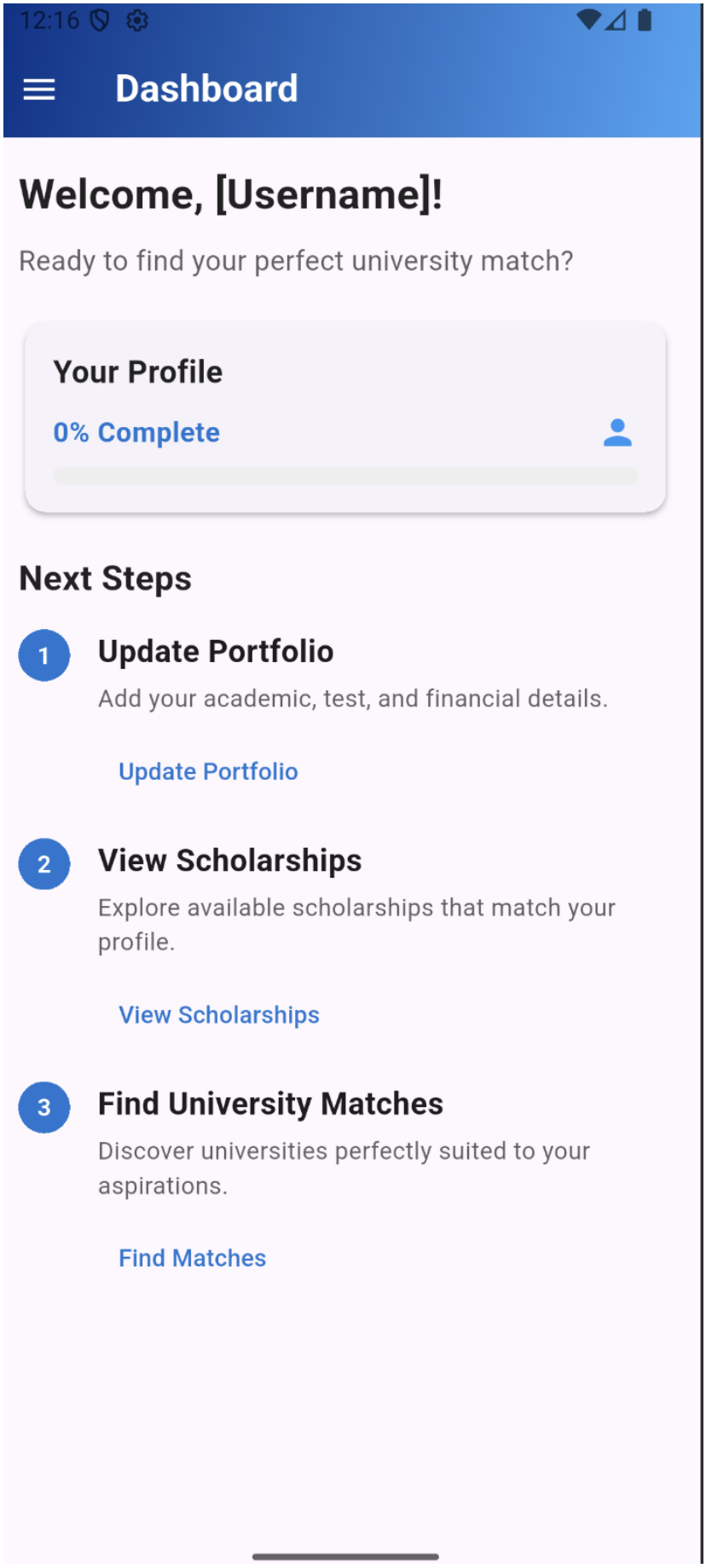

Figure 8.2: Dashoboard page

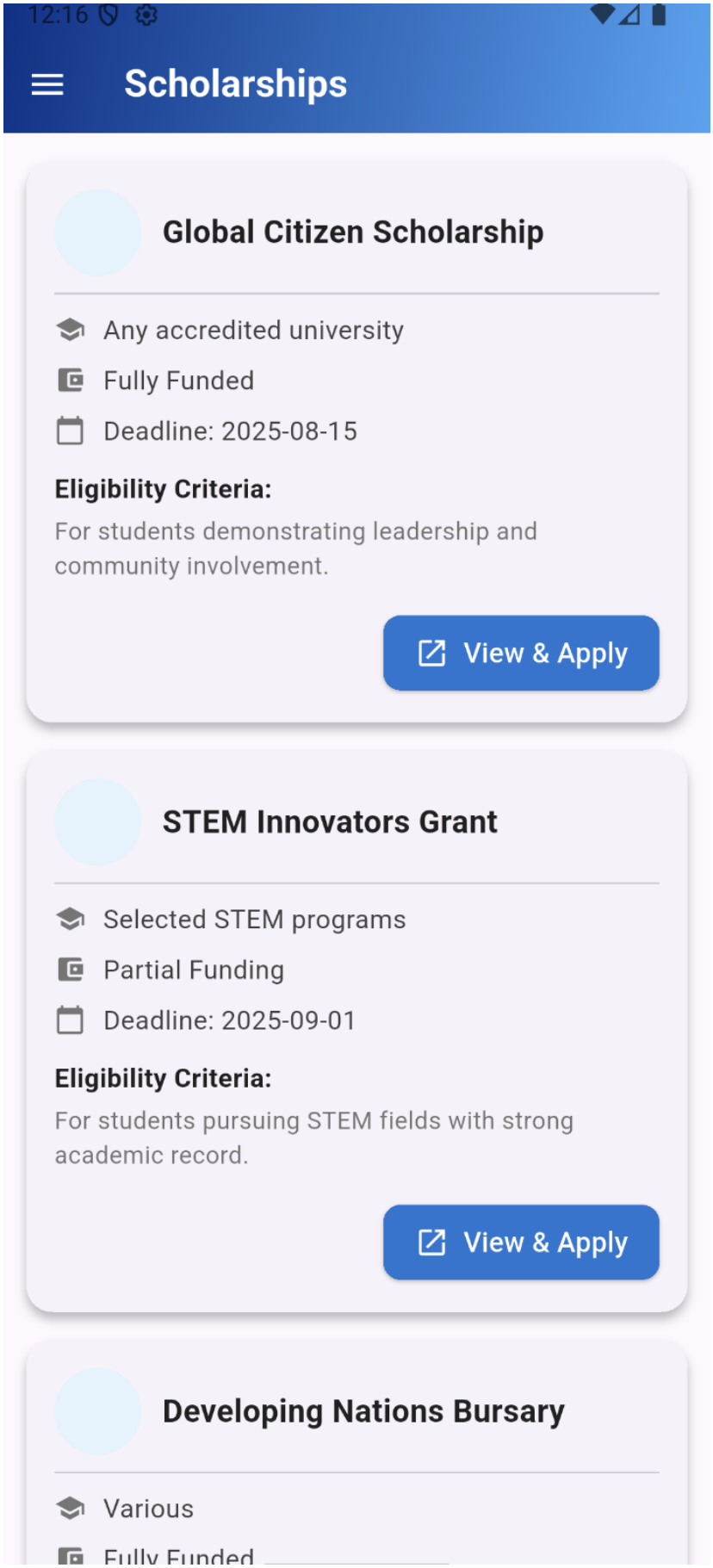

Figure 8.3: Scholarships page

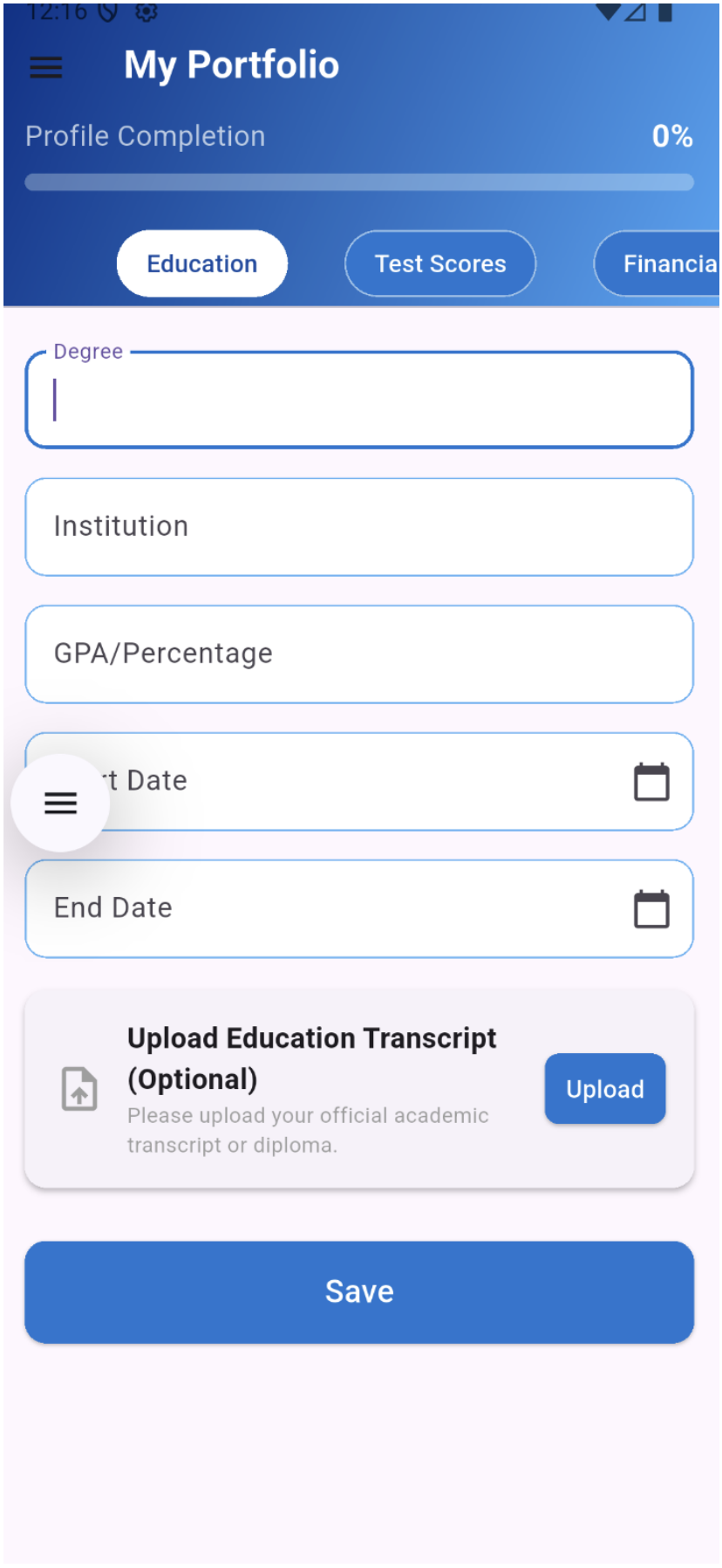

Figure 8.4: Portfolio page

9. Result and Discussion

The CancelTency project was successfully completed. It has core modules including university search, document upload, matching algorithm, and mobile-friendly interface. Testing has confirmed that the system can upload documents, extract necessary information using Google Vision API, and recommend universities based on student profiles.

The frontend and backend were fully integrated with Firebase for authentication and data storage. The basic functionality has met the intended project goals. The project development and testing shown that:

- The university search and recommendation system has worked as expected.
- Document scanning was reliable for clear and standard documents.
- The user interface was simple and mobile responsive.

Some minor challenges were faced:

- The OCR sometimes failed on low-quality documents.
- Web scraping requires regular updates due to changing website structures.

Overall, the system is functional and the key objectives were met. Further improvements and additional features will be developed in the near future.

10. Conclusion

The CancelTency is a student driven developed to solve major problems faced by Nepalese students while pursuing international education. Instead of relying on the consultancy CancelTency provides a direct, simple, easy to use and user friendly platform where students can manage application and enter the university on their own. Using modern technologies like Flutter, Node.js, Firebase, web scraping, and OCR.space API, CancelTency transform the application experience for Nepalese students. Features like document scanning, grade based universities recommendation and direct communication makes the platform trustworthy. With Agile development process it helps CancelTency to improve continuously based on feedback. In the future, CancelTency has the potential to remove unnecessary Barries made by agents and make global education more transparent, affordable and accessible for students all over Nepal.

References

[1] Gupta, R., & Singh, M. (2020). Web scraping techniques for academic data collection: A case study. *arXiv preprint arXiv:2003.12345*. Retrieved from https://arxiv.org/abs/2003.12345

[2] Kandel, P., & Mishra, B. (2021). Digital transformation in higher education consulting: Challenges for Nepalese students. *arXiv preprint arXiv:2106.04567*. Retrieved from https://arxiv.org/abs/2106.04567

[3] Zhang, Y., Liu, T., & Chen, W. (2019). Automated data collection and student-program matching in higher education systems. *arXiv preprint arXiv:1910.07890*. Retrieved from https://arxiv.org/abs/1910.07890

[4] Glez-Peña, D., Lourenço, A., López-Fernández, H., Reboiro-Jato, M., & Fdez-Riverola, F. (2020). Web scraping in academic and business domains: Challenges and best practices. *arXiv preprint arXiv:2012.06789*. Retrieved from https://arxiv.org/abs/2012.06789

[5] Shen, W.-K. (2011). An online scholarship application system. Master's thesis, University of Wisconsin–Madison. Retrieved from https://minds.wisconsin.edu/handle/1793/52484

[6] Li, Y., & Chen, M. (2018). Automating scholarship application review: Challenges and solutions. *Journal of Educational Technology Systems*, 46(2), 234–249.

[7] Patel, R., & Kumar, S. (2019). Digital transformation of scholarship application processes in higher education. In *Proceedings of the International Conference on Education and Technology* (pp. 78–85).