

Design and Development of an Online Marriage Registration System in Bangladesh

by

MD. Tarek Rahaman

ID: CSE2202026122

Eva Rahman Fatema

ID: CSE2202026113

Metu Rani Das

ID: CSE2202026107

Supervised by

Tasnia Haque Kheyra

Submitted in partial fulfillment of the requirements for the degree of
Bachelor of Science in Computer Science and Engineering



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SONARGAON UNIVERSITY (SU)**

May 2026

Design and Development of an Online Marriage Registration System in Bangladesh

by

MD. Tarek Rahaman

ID: CSE2202026122

Eva Rahman Fatema

ID: CSE2202026113

Metu Rani Das

ID: CSE2202026107

Supervised by

Tasnia Haque Kheya

Submitted in partial fulfillment of the requirements for the degree of Bachelor of Science in
Computer Science and Engineering



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SONARGAON UNIVERSITY (SU)**

May 2026

APPROVAL

The project titled “**Design and Development of an Online Marriage Registration System in Bangladesh**” submitted by MD. Tarek Rahaman (CSE2202026122), Eva Rahman Fatema (CSE2202026113), Metu Rani Das (CSE2202026107) to the Department of Computer Science and Engineering, Sonargaon University (SU), has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering and approved as to its style and contents.

Board of Examiners

Tasnia Haque Kheya

Lecturer

Department of Computer Science and Engineering

Sonargaon University (SU)

Supervisor

(Examiner Name and Signature)

Department of Computer Science and Engineering

Sonargaon University (SU)

Examiner 1

(Examiner Name and Signature)

Department of Computer Science and Engineering

Sonargaon University (SU)

Examiner 2

(Examiner Name and Signature)

Department of Computer Science and Engineering

Sonargaon University (SU)

Examiner 3

DECLARATION

We, hereby, declare that the work presented in this report is the outcome of the investigation performed by us under the supervision of **Tasnia Haque Kheya, Lecturer**, Department of Computer Science and Engineering, Sonargaon University, Dhaka, Bangladesh. We reaffirm that no part of this project has been or is being submitted elsewhere for the award of any degree or diploma.

Countersigned

Signature

(Tasnia Haque Kheya)
Supervisor

MD.Tarek Rahaman
ID: CSE2202026122

Eva Rahman Fatema
ID: CSE2202026113

Metu Rani Das
ID: CSE2202026107

ABSTRACT

The traditional marriage registration process in Bangladesh is largely manual, time-consuming, and prone to errors, which often leads to inefficiencies and inconvenience for citizens. This project presents the design and development of an **Online Marriage Registration System** aimed at digitizing and simplifying the entire registration process. The proposed system allows users to submit registration applications, upload necessary documents, and track application status through a web-based platform. The system is developed using modern web technologies to ensure accessibility, usability, and data security. It provides separate interfaces for users and administrators, enabling efficient data management and verification. By automating the workflow, the system reduces paperwork, minimizes human errors, and improves service delivery speed. Furthermore, the system includes features such as secure data storage, input validation, and digital certificate generation, which enhance the reliability and effectiveness of the platform. It also ensures better communication between users and administrators through a structured and transparent process. The expected outcome of this project is to enhance transparency, reduce processing time, and provide a user-friendly solution for marriage registration. This system also supports the vision of Digital Bangladesh by integrating technology into public service management and improving overall service accessibility for citizens.

ACKNOWLEDGMENT

At the very beginning, we would like to express my deepest gratitude to the Almighty Allah for giving us the ability and the strength to finish the task successfully within the schedule time.

We are auspicious that we had the kind association as well as supervision of **Tasnia Haque Khaya**, Lecturer, Department of Computer Science and Engineering, Sonargaon University whose hearted and valuable support with best concern and direction acted as necessary recourse to carry out our project.

We are also thankful to all our teachers during our whole education, for exposing us to the beauty of learning.

Finally, our deepest gratitude and love to my parents for their support, encouragement, and endless love.

LIST OF ABBREVIATIONS

CPU	Central Processing Unit
CSS	Cascading Style Sheet
DBMS	Database Management System
DDS	Design Document Specification
HTML	Hyper Text Markup Language
HTTP	Hyper Text Transfer Protocol
JS	JavaScript
PERT	Program Evaluation and Review Technique
RAM	Random Access Memory
ROM	Read Only Memory
SRS	Software Requirement Specification
UAT	User Acceptance Testing

TABLE OF CONTENTS

Title	Page No.
DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
LIST OF ABBREVIATION	vi
CHAPTER 1	1 – 4
INTRODUCTION	
1.1 Introduction	1-2
1.2 Objectives	2
1.3 The Scope of the work	2-3
1.4 Beneficiaries and Benifits	3
1.5 Expected Outcome	3 - 4
1.6 Report Layout	4
CHAPTER 2	5 - 8
BACKGROUND	
2.1 Introduction	5
2.2 Project Planning	5-6
2.3 Project Scheduling.....	6
2.4 Stakeholders	7
2.5 Scope of the Problem	7-8
2.6 Challenges	8
CHAPTER 3	9 – 16
REQUIREMENT SPECIFICATION.....	
3.1 Business Process Modeling	9
3.2 Requirement Collection and Analysis	10
3.3 Functional Requirement	10-11
3.4 Use Case Modeling	11-14
3.5 Sequnce Diagram	14 – 15

3.6	Logical Data Model	15 – 16
3.7	Design Requirement	16
CHAPTER 4		17 – 18
DESIGN AND DEVELOPMENT		
4.1	Design and Implementation	17
4.2	Development Task	17 – 18
4.3	Class Diagram	18
CHAPTER 5		19 – 21
DESIGN SPECIFICATION		
5.1	Front-end Design	19
5.2	Back-end Design	19
5.3	Interaction Design and UX	19
5.4	Implementation Requirements.....	20 – 21
5.5	Web Platform	21
5.6	MongoDB	21
CHAPTER 6		22 – 40
IMPLEMENTATION AND TESTING		
6.1	Implementation of Database	22 – 23
6.1.1	Kazi's Information	22
6.1.2	User Information	23
6.1.3	Marriage Information	23
6.2	Implementation of Front-end Design	24 – 38
6.2.1	Home Page	24 – 25
6.2.2	Admin Login	26
6.2.3	Admin Dashboard	27
6.2.4	User Registrarion	28
6.2.5	User Dashboard	29
6.2.6	Marriage Application	30
6.2.7	Pending Application	31
6.2.8	Download Application	32

6.2.9	Pending Divorce Application	33
6.2.10	Divorce Application	34
6.2.11	Download Divorce Application	35
6.2.12	Kazi Registration	36
6.2.13	Kazi Login	37
6.2.14	Kazi Dashboard	38
6.3	Implementation of Interaction	38
6.4	Testing Implementation	39 – 40
6.4.1	Test Case Table	39 – 40
6.5	Test Result and Reports	40
CHAPTER 7		41 – 43
CONCLUSION AND FUTURE WORKS		
7.1	Conclusion	41
7.2	Limitations	41 – 42
7.3	Future Works	42 – 43
REFERENCES		44

LIST OF TABLES

<u>Table No.</u>	<u>Title</u>	<u>Page No.</u>
Table 2.3	Project Schedule	6
Table 3.3	Functional Requirement	10 – 11
Table 6.4.1	Test Case	39 – 40

LIST OF FIGURES

<u>Figure No.</u>	<u>Title</u>	<u>Page No.</u>
Fig.3.1	Business process model	9
Fig.3.4	Use case model	12
Fig.3.5	Admin Perspective Sequence Diagram	14
Fig.3.5.1	Marriage Register Perspective Sequence Diagram	15
Fig.3.6	Logical data model	16
Fig.4.3	Class Diagram	18
Fig.6.1.1	Kazi's information	22
Fig.6.1.2	User Information	23
Fig.6.1.3	Marriage Information	23
Fig.6.2.1	Home page	24 - 25
Fig.6.2.2	Admin Login Form	26
Fig.6.2.3	Admin Dashboard	27
Fig.6.2.4	User Registration	28
Fig.6.2.5	User Dashboard	29
Fig.6.2.6	Marriage Application Form	30
Fig.6.2.7	Pending Application	31
Fig.6.2.8	Download Application Form	32
Fig.6.2.9	Pending Divorce Application	33
Fig.6.2.10	Divorce Application Form	34
Fig.6.2.11	Download Divorce Application Form	35
Fig.6.2.12	Kazi Registration Form	36
Fig.6.2.13	Kazi Login Form	37
Fig.6.2.14	Kazi Dashboard	38

CHAPTER 1

INTRODUCTION

1.1 Introduction

In recent years, Bangladesh has been rapidly advancing toward a fully digital society under the vision of “Digital Bangladesh.” This transformation has influenced many sectors, including government services, education, healthcare, and legal systems. One important area that still requires modernization is the process of marriage registration, which is traditionally handled through manual paperwork and in-person procedures.

Marriage registration is a crucial legal process that ensures the rights and responsibilities of both partners. It provides official recognition of a marital relationship and plays a significant role in matters such as inheritance, legal protection, and social security. However, the conventional system in Bangladesh often involves time-consuming steps, lack of transparency, and limited accessibility, especially for people living in rural areas. Applicants are required to visit government offices multiple times, submit physical documents, and wait for long verification processes, which can lead to delays and inconvenience.

In addition to these administrative challenges, Bangladesh also faces a serious social issue related to **child marriage**, which remains prevalent in some regions. The causes of child marriage include poverty, lack of education, social pressure, gender inequality, and traditional cultural practices. In many rural families, early marriage is seen as a way to reduce financial burden or ensure social security for girls. Limited awareness of legal marriage age and weak enforcement of laws also contribute to this problem. Child marriage often leads to negative consequences such as early school dropout, health risks for young mothers, and restricted personal development.

To address both administrative inefficiencies and social awareness issues, the **Online Marriage Registration Web System** has been developed as a modern and efficient digital solution. This system aims to digitize the entire marriage registration process and make it more accessible, transparent, and user-friendly. By using this platform, users can easily register, submit applications, upload necessary documents, and track the status of their registration from anywhere and at any time.

The system also improves communication between applicants and administrators. Government officials or super admins can efficiently verify applications, manage user data, and issue digital marriage certificates through a centralized dashboard. This reduces manual workload, minimizes errors, and ensures faster service delivery.

Developed using the **MERN stack (MongoDB, Express.js, React.js, and Node.js)**, the system provides a secure, scalable, and high-performance environment. It ensures data security, real-time processing, and smooth user interaction. In addition, features such as authentication, role-based access control, and document management enhance the reliability of the system.

Overall, this project contributes to the digital transformation of public services in Bangladesh by simplifying the marriage registration process. It promotes efficiency, transparency, accessibility, and also indirectly supports awareness of legal marriage practices, ultimately improving the experience for both citizens and government authorities[6].

1.2 Objectives

The primary objective of this study is to analyze the role and effectiveness of an online marriage registration system in ensuring legal, social, and administrative benefits for individuals. This study also aims to highlight the importance of marriage certification in modern society and its impact on digital service delivery.

Legal Proof of Marriage: To examine how a marriage certificate serves as an official legal document that validates the marital relationship and can be used in courts and administrative procedures.

Social and Cultural Recognition: To understand the role of marriage certification in gaining social acceptance and cultural acknowledgment of a marital union.

Rights and Benefits: To identify how a registered marriage ensures access to various legal rights and benefits, including inheritance, property rights, insurance claims, and spousal privileges.

Changing Legal Status: To analyze how marriage registration officially changes the legal status of individuals from single to married, impacting various legal and administrative records.

Divorce Proceedings: To explore the importance of a marriage certificate in legal separation or divorce cases, where it acts as essential proof of marriage.

Social Services and Assistance: To evaluate how marriage registration helps individuals access government services, financial assistance, and social welfare programs.

Digital Transformation Objective: To assess how online platforms improve the efficiency, accessibility, and transparency of the marriage registration process.

These objectives highlight the significance of obtaining an online marriage registration in various aspects of life, including legal, social, financial, and personal matters[1].

1.3 The Scope of the Work

The scope of this project focuses on the design, development, and implementation of an **Online Marriage Registration Web System** that aims to digitize and simplify the traditional marriage registration process in Bangladesh. The system covers all major functionalities required to complete the registration process in an efficient and user-friendly manner.

The work includes developing a web-based platform where users can create accounts, log in using valid credentials, and submit marriage registration applications online. Applicants can upload required documents, provide necessary personal information, and track the progress of their application in real time. The system ensures proper data validation to maintain accuracy and reliability.

From the administrative side, the project includes features for admin and super admin users to manage applications, verify submitted information, and approve or reject requests. The system also enables the generation of digital marriage certificates in PDF format, including official details and signatures[2].

1.4 Beneficiaries and Benefits

➤ Beneficiaries:

The main beneficiaries are couples (bride and groom), government authorities, legal professionals, and society. Students and researchers can also benefit from this system as a case study.

➤ Benefits:

This system provides legal proof of marriage, ensures social recognition, and helps individuals access rights and services. It saves time, reduces paperwork, improves transparency, and allows users to complete the process easily from anywhere. It also supports legal procedures such as divorce, name change, and access to social benefits.

1.5 Expected Outcome

The expected outcome of this study is to develop a clear understanding of how an online marriage registration system operates and how it improves the traditional manual process. The system is designed to make marriage registration faster, more accessible, and user-friendly for all types of users.

It will ensure proper digital record-keeping by storing all application data securely in an organized database, which reduces the need for physical paperwork and minimizes the risk of data loss or errors. The system also enhances transparency by allowing users to track their application status in real time and by providing a clear verification process for administrators.

Furthermore, this study highlights the overall benefits of implementing such a system, including improved efficiency, reduced processing time, and better service delivery. At the same time, it also identifies certain limitations, such as dependency on internet access and the need for strong security measures.

Finally, the study emphasizes potential future improvements, such as advanced security features, better user interface design, and integration with government databases, to make the system more secure, reliable, and effective for both legal and social use.

1.6 Report Layout

This report is divided into seven chapters-

- **Chapter 1:** We have discussed about introduction, objectives and the expected outcome of our project.
- **Chapter 2:** Contains scope of the problem and the challenges we have to face to implement this web application.
- **Chapter 3:** We have discussed about requirement specification such as business process modelling, requirement analysis and modelling, logical data model and design requirement.
- **Chapter 4:** Contains the Front-end design, back-end design interaction design and UX and Implementation requirements are described in this section.
- **Chapter 5:** We have discussed about the implementation of database, implementation of frontend design implementation of interaction, testing implementation and test results and reports.
- **Chapter 6:** This chapter presents the implementation of the system, including database setup, front-end development, user interaction, and system testing with test cases and results.
- **Chapter 7:** This chapter summarizes the overall findings of the study, discusses limitations, and provides recommendations for future improvements.

CHAPTER 2

BACKGROUND

2.1 Introduction

This chapter describes the background of the Online Marriage Registration Web System, focusing on the need, planning, stakeholders, and challenges involved in its development. The main purpose of this project is to replace the traditional manual marriage registration process with a modern, efficient, and digital web-based system.

The development of this project is based on proper planning and scheduling, where system requirements were analyzed, user needs were identified, and a suitable architecture was designed. The main stakeholders of this system include applicants (users), administrative officers, and super administrators, each responsible for different parts of the registration process.

During development, several challenges were considered, such as ensuring data security, maintaining system reliability, handling user requests efficiently, and creating a simple and user-friendly interface. Despite these challenges, the system aims to improve the overall registration experience by reducing manual workload and increasing processing speed.

Overall, the Online Marriage Registration Web System is developed to modernize the traditional registration process, making it more efficient, transparent, and accessible for all users.

2.2 Project Planning

Project Scenario:

The system has been designed with three modules in mind. These modules are, admin portal module, Kazi portal module and married couple user module. These three modules will make up the structure of the system. Admin module will help the admin to maintain the unauthorized users. Admin can see the details of the user from the site and also the updated or deleted. Kazi portal module will help the married couple to provide marriage certificate. He can add couple information. Everybody can visit the website. But only married couples can apply for a marriage certificate[9].

➤ **Scenario 1:** User (Married Couple) Based

- i. First, the user has to register to sign in.
- ii. After successfully registering, the user can log in.
- iii. Finally, the user can apply for the certificate.

➤ **Scenario 2:** User (Kazi) Based

- i. First, the user has to register to sign in.
- ii. After successful registration, Kazi can log in.
- iii. Finally, Kazi can add the couples' information.

➤ **Scenario 3:** User (Admin) Based

- i. Admin login to the system.
- ii. He can see the all marriage register list.
- iii. He can delete or update information.
- iv. Then he can log out from the system.

2.3 Project Schedule

Table 2.3: Project Schedule-

We complete our project following by agile model.

Task No	Task Name	Duration
01	Planning	20 days
02	Requirement gathering & analysis	15 days
03	System Design	10 days
04	Development	30 days
05	Testing	7 days
06	Implementation	20 days
07	Relies	7 days
08	Total	109 days

Table 2.3: Project Schedule

2.4 Stakeholders

❖ The Admin:

- i. Check information
- ii. Check validation
- iii. View applicant list
- iv. Do Update and Delete

❖ The Kazi:

- i. Add couple information
- ii. Update information
- iii. View information

❖ The User:

- i. View Marriage related information
- ii. View Divorce related information
- iii. View Contact Details

2.5 Scope of the problem

As this system is a web-based application, there are several practical limitations that may affect its usability and effectiveness for all users.

Firstly, since the platform depends on internet access and digital devices, it may not be effective for users who do not have a smartphone, computer, or sufficient knowledge of how to use such technology. This creates a digital divide, especially for people in rural or less educated communities.

Secondly, the system requires the married couple to log in using a specific government registration number. Without this valid registration number, users will not be able to complete the sign-in process. This dependency may cause difficulties if users do not have access to or are unaware of their registration details.

Another important limitation is that married couples cannot apply for a marriage certificate unless the Kazi (marriage registrar) has first entered their marriage information into the system. This means the process is partially dependent on the actions of the registrar, which may delay the application if the data is not updated in time.

Overall, while the system improves efficiency and accessibility, these limitations highlight the need for user awareness, proper training, and reliable administrative support to ensure smooth operation for all users[8].

2.6 Challenges

During the development of the Online Marriage Registration Web System, we faced several important challenges that needed to be solved carefully to ensure the system works properly and efficiently.

- i. First of all, we had to face the challenge of generating a unique idea for implementing this web application, as it required a clear understanding of real-world government marriage registration systems and how to digitize them effectively.
- ii. Since it is a government-based web application, we had to collect and prepare a large amount of sample or fake data to create and test an API that behaves similarly to a real government server.
- iii. Data validation was also a critical part of this web application. We had to ensure that all user inputs and uploaded documents are correctly verified to avoid incorrect or incomplete information in the system.
- iv. The next challenge we faced was implementing a PDF generation feature, which allows users to download and print official marriage certificates in a properly formatted document.
- v. We also needed to use a suitable and secure database to store all user information, application data, and documents safely, ensuring data integrity and protection.
- vi. Another major challenge was creating a digital signature feature on the marriage certificate to make it look official and legally acceptable within the system.
- vii. Overall, these challenges helped improve the quality of the system and ensured that the final application is more reliable, secure, and user-friendly.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

Business Process modeling is a process of constructing a structural view of a system or process. It includes some process, starts and symbol, condition as like flow chart. In our system we construct business process model which shows how to send the married couple information to the government authority and authority verifies the information. And it also shows what will happen if the authority does not verify the information. If the information is correct, then the authority provides a certificate. Figure 3.1 shows business process modeling[7].

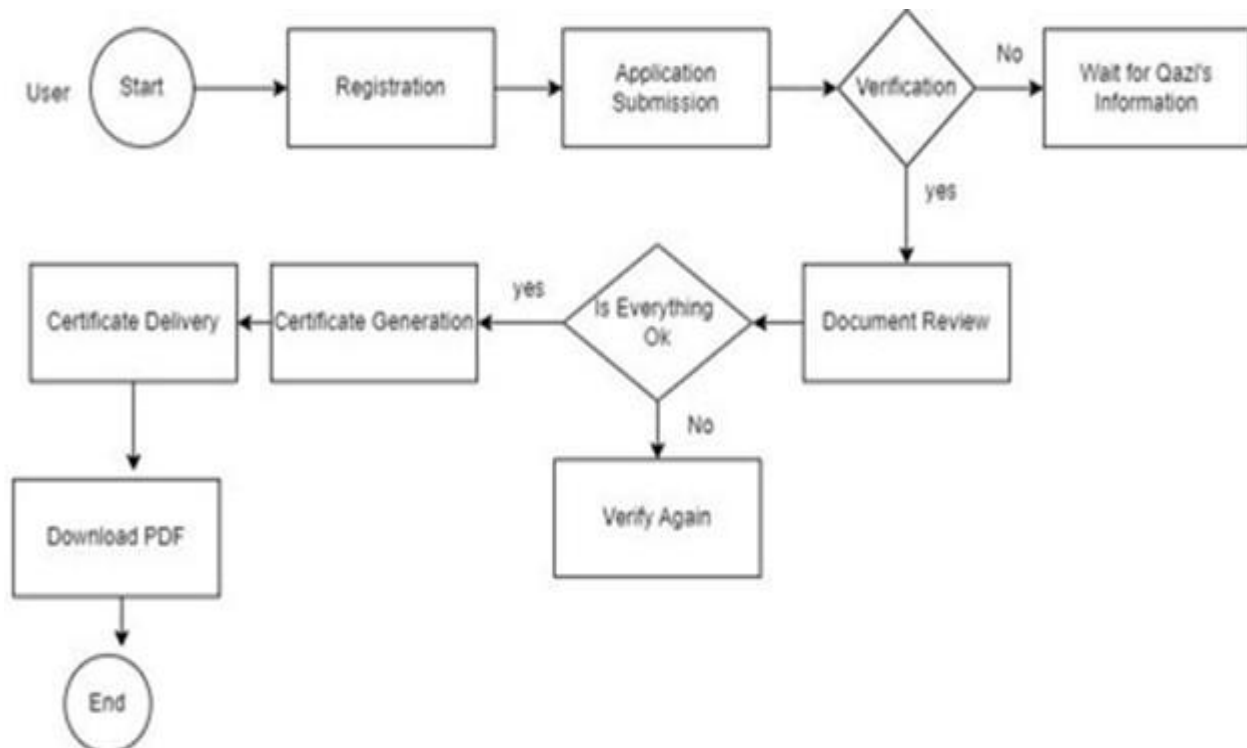


Figure 3.1: Business Process Model

3.2 Requirement Collection and Analysis

Requirement collection and analysis are very significant term to develop a system or any kind of web application. It meets the goal of the user, Kazi and the admin. As our application is concerned with the requirements of the married couple and the admin so, we went to them and tried to know what their requirement for this app are. Here the Government is the admin user. They all suggested developing a simple app which they can use expediently. To maintain the information of the married couples this app will provide them a great service[6].

❖ Key Findings:

- Users need a simple and fast system.
- Secure data storage is essential.
- Verification process must be reliable.
- System should be accessible from anywhere.

3.3 Functional Requirement (FR)

Table 3.3: Functional Requirement (FR)-

Admin log-in:

FR-01	Admin login
Description	In this system admin must login then access this system functionality
System User	Admin

Add Application:

FR-02	Add applicant
Description	In this system, the admin can add certificate applicants and delete applications. The admin can also view the list of all users.
System User	Admin

Certificate applicant Login:

FR-03	Certificate applicant login
-------	-----------------------------

Description	In this system applicants must login then access this system functionality
System User	Married couple

Certificate application:

FR-04	Certificate application
Description	In this system, certificate applicants can submit applications with all the required information, and it is mandatory to provide their NID number. Applicants can also view and update their applications if needed.
System User	Married couple

Check and Download Certificate:

FR-05	Check and Download Certificate
Description	In this system Marriage register can check married status
System User	Married couple

3.4 Use Case Modelling

A use case model is a graphical representation of the interactions among the elements of a system. A use case is a methodology used in system analysis to identify, clarify, and organize system requirements. It helps to describe how different users (actors) interact with the system to achieve specific goals. Figure 3.2 shows the use case modelling of the application.

In the **Online Marriage Registration Web System**, the use case model illustrates the interaction between key actors such as the User (Applicant), Kazi (Marriage Registrar), Admin, and Super Admin. Each actor performs specific tasks within the system based on their role.

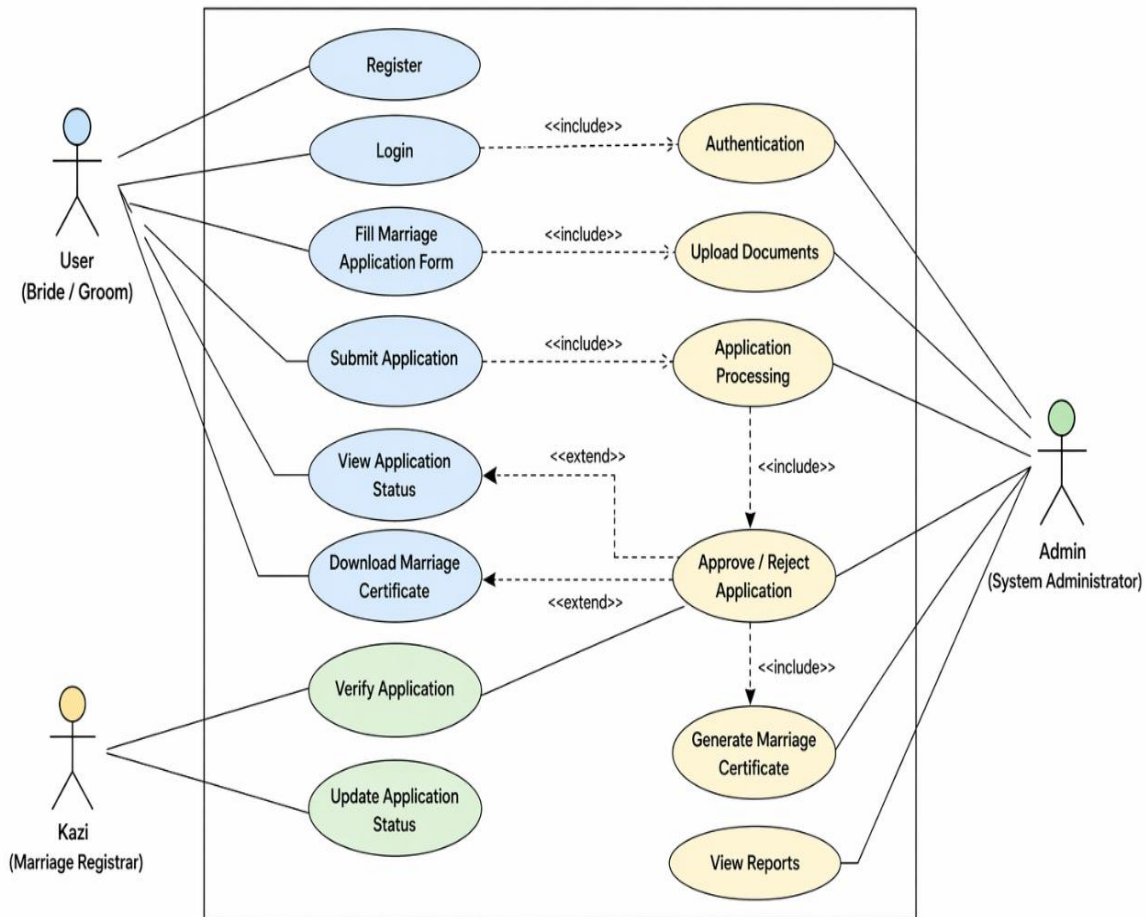


Figure 3.4: Use Case Model

Certainly, here's a simplified use case diagram for an online marriage certificate system with three main actors: Applicant, Kazi and Admin.

➤ **Actors:**

- ❖ **Applicant:** The person applying for a marriage certificate.
- ❖ **Kazi:** Providing Marital information.
- ❖ **Admin:** The system administrator responsible for managing and maintaining the online marriage certificate system.

➤ **Use Cases:**

❖ **Apply for Marriage Certificate Actor**

- ❖ **Applicant Description:** The applicant initiates the process applying of for a marriage certificate.

➤ **Submit Application**

❖ **Actor:** Applicant

- ❖ **Description:** The applicant provides all necessary information and documents to the system.

➤ **Officiate Marriage:**

❖ **Actor:** Kazi

- ❖ **Description:** The Qazi providing necessary details to the system.

➤ **Verify Application:**

❖ **Actor:** Admin

- ❖ **Description:** The admin reviews the submitted application for completeness and accuracy.

➤ **Approve Application:**

❖ **Actor:** Admin

- ❖ **Description:** If the application meets all requirements, the admin approves it.

➤ **Generate Certificate:**

❖ **Actor:** Admin

- ❖ **Description:** After approval, the admin generates the marriage certificate.

➤ **Download Certificate:**

✓ **Actor:**

- ❖ **Applicant Description:** The applicant downloads the marriage certificate from the system.

➤ **Administrate System:**

❖ **Actor:** Admin

❖ **Description:** The admin is responsible for managing and maintaining the online marriage certificate system, including user accounts, system settings, and updates.

3.5 Sequence Diagram

A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario[2].

Admin Perspective Sequence Diagram:

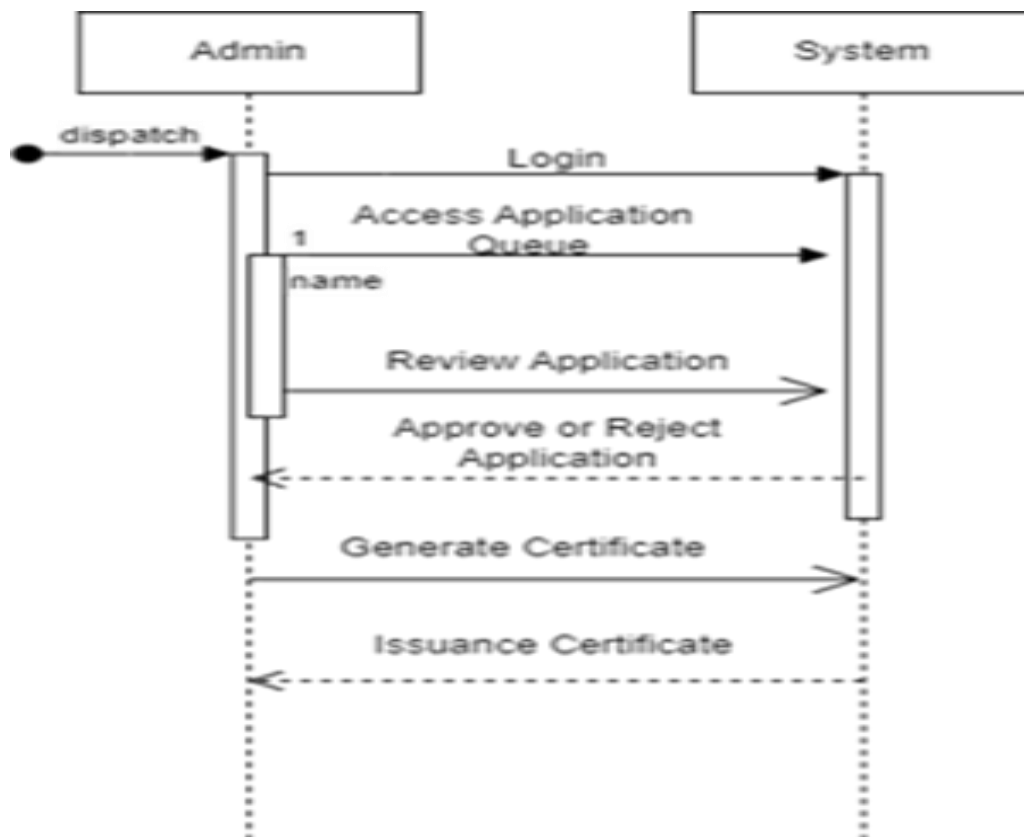


Figure 3.5: Admin Perspective Sequence Diagram

Marriage Register Perspective Sequence Diagram:

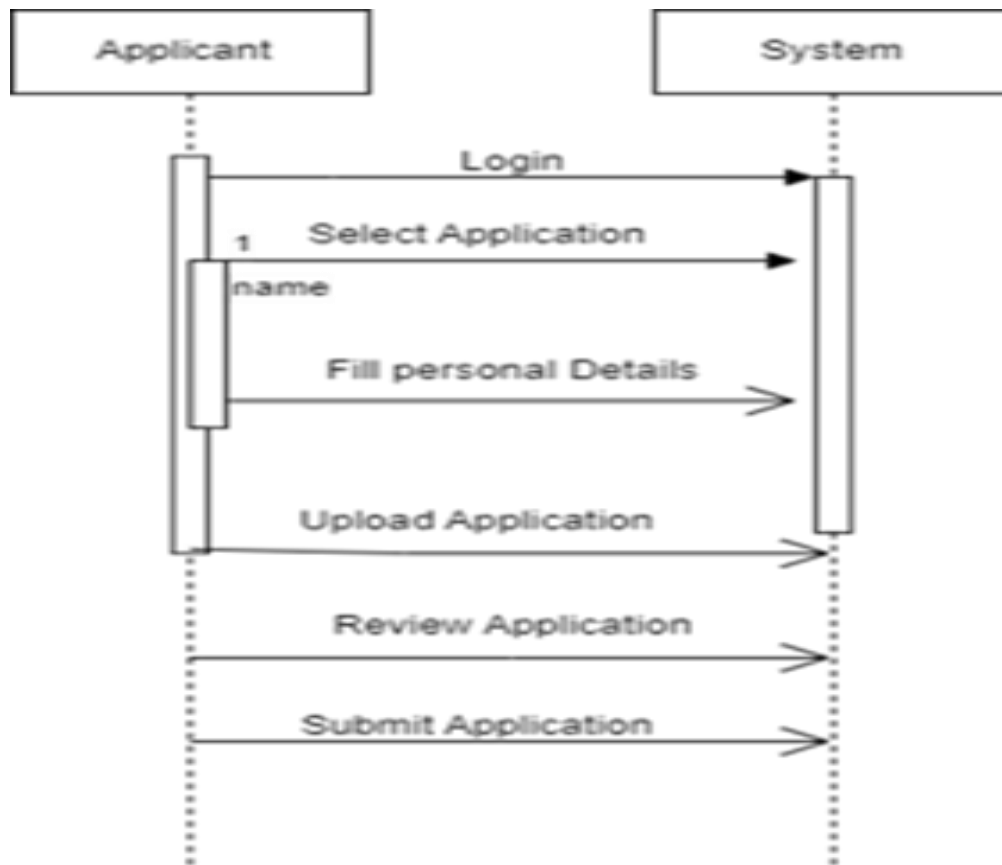


Figure 3.5.1: Marriage Register Perspective Sequence Diagram

3.6 Logical Data Model

Logical data model has relational table named Admin. Quazi, Married Couple. It serves as an abstract representation of how data is organized and related within the system. The total relational model has shown on Our project's the following Figure 3.6.

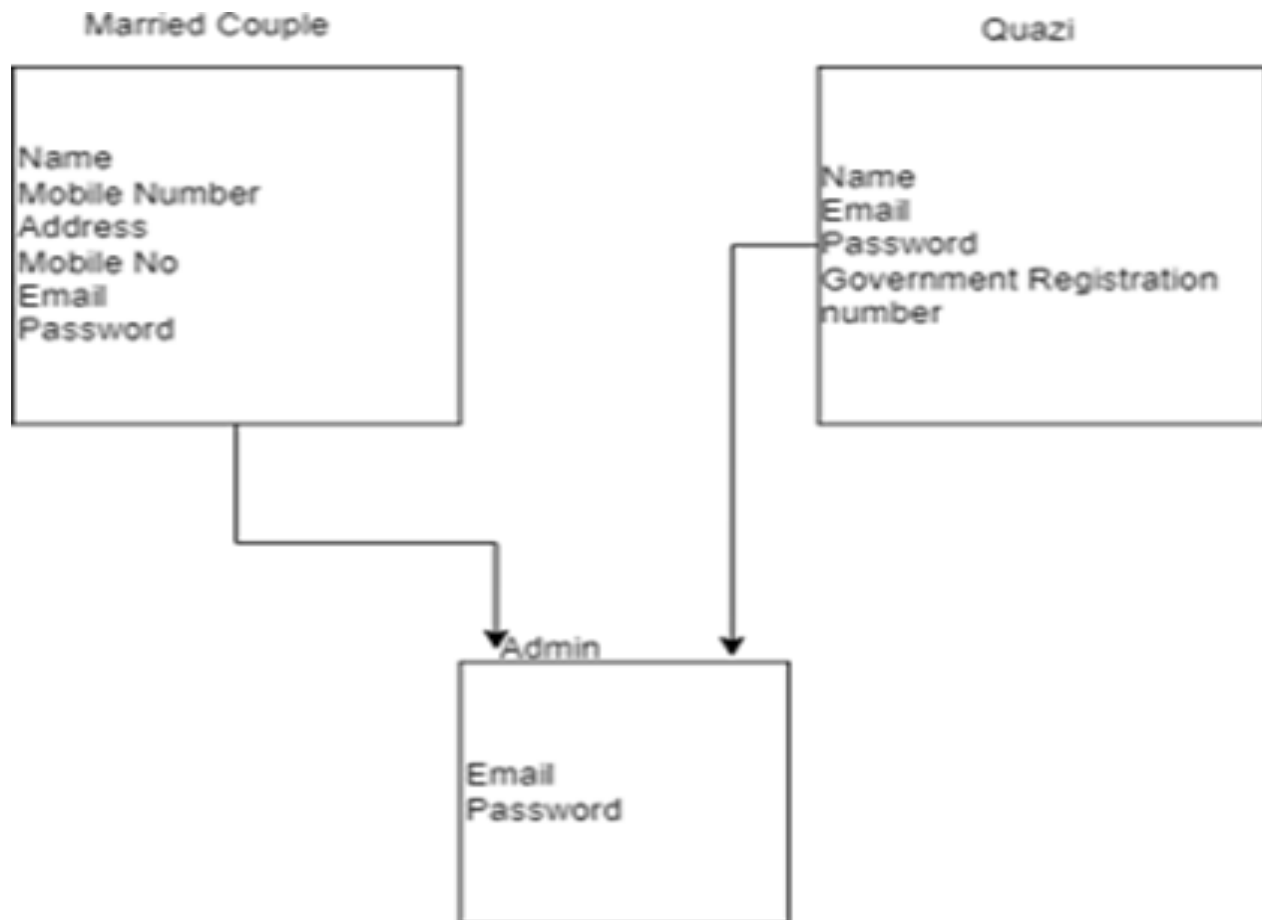


Figure 3.6: Logical Data Model

3.7 Design Requirement

A well design web app is pleasure to use. Our web app provides service to the married couple and the government to maintain security in an area. Here, government authority does their job as the admin of the database and the married couples is the field user. Though the users of our app are married couples so, we try to make the interface of the app convenient to the user. Well design of web app is very essential but we should concentrate to the output design of the app first. User typically uses this app to maintain their personal information which is required by the government. So, simplifying this app by making user interface simple is our primary responsibility.

CHAPTER 4

DESIGN AND DEVELOPMENT

4.1 Design and Implementation Constraints

Technology:

The system is developed using the **MERN stack**, which includes MongoDB, Express.js, React.js, and Node.js. This stack enables full-stack JavaScript development for both client-side and server-side operations[11].

System Language:

The primary programming language used in the system is **JavaScript**. It is used for both frontend and backend development to ensure consistency and efficiency.

Library / Framework:

The frontend of the system is built using **React JS**, a popular JavaScript library for building interactive and dynamic user interfaces. It allows component-based architecture and improves user experience.

Runtime Environment:

The backend is powered by **Node JS**, which provides a fast and scalable runtime environment for executing JavaScript code on the server side.

Database

The system uses **MongoDB**, a NoSQL database that stores data in a flexible, JSON-like format. It is suitable for handling large volumes of user data and supports scalability.

4.2. Development Tools

Code Editor: Visual Studio Code (VS Code) was used for writing and managing the source code due to its lightweight nature and extensive extension support.

Version Control: Git was used for tracking changes in the codebase, and GitHub was used for repository hosting and collaboration.

Frontend Development Tools: React Developer Tools (browser extension) was used for debugging and inspecting React components.

Backend Tools: Node Package Manager (NPM) was used to install and manage dependencies required for the backend development.

API Testing Tool: Postman was used to test and debug API endpoints during development.

Database Tool: MongoDB Compass was used for managing and visualizing the MongoDB database.

Deployment Platform: Vercel was used to deploy and host the web application for online access.

4.3 Class Diagram

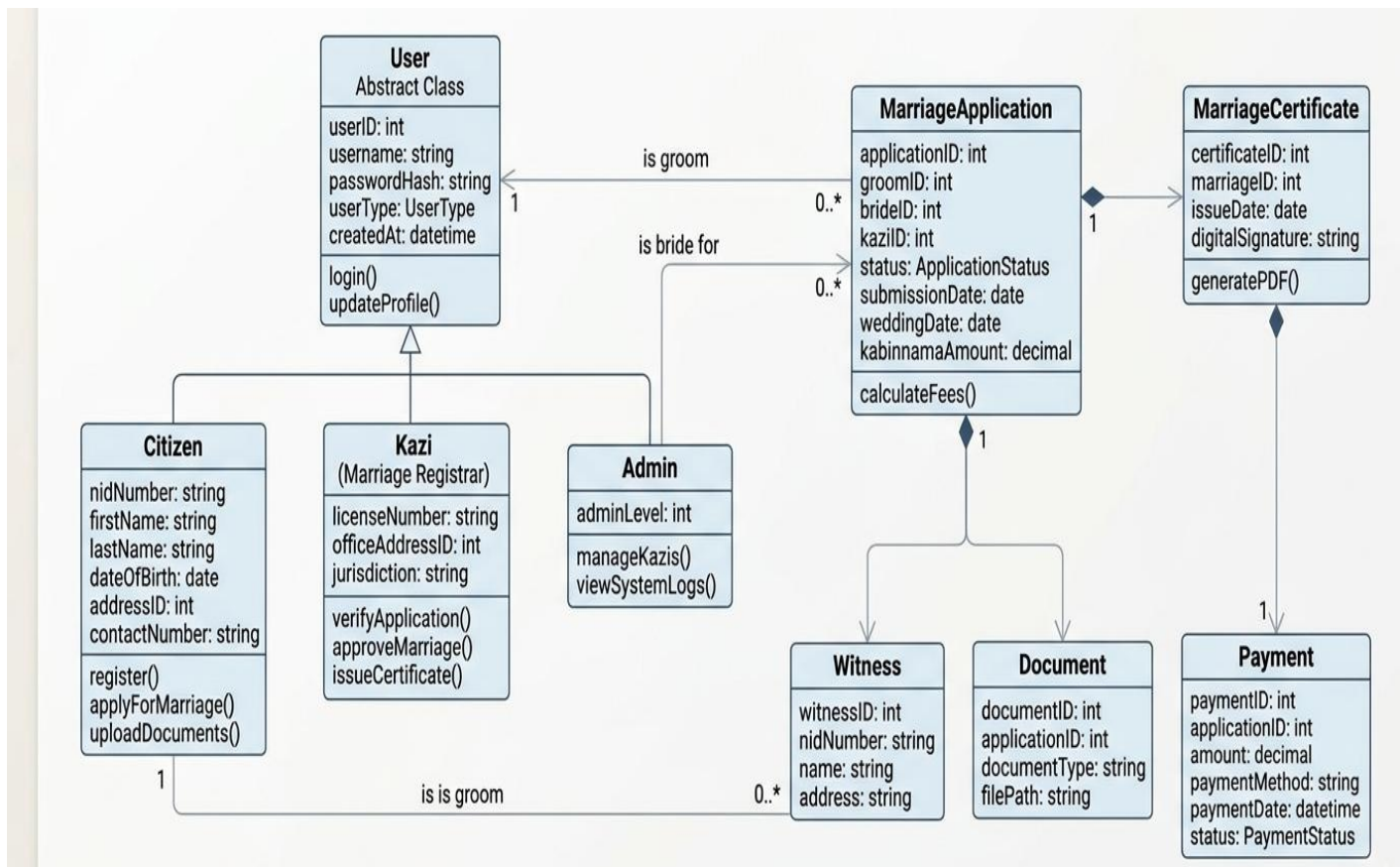


Figure 4.3: Class Diagram

CHAPTER 5

DESIGN SPECIFICATION

5.1 Front-end Design

Front page of web application must draw the attention of the user. To make our application attractive to the user we use React JS. We Design our project with easily understandable React JS so that, the user can easily access the app the user. In the front page we simply use a registration option and sign in option. To sign in this app the user must complete the registration first.

5.2 Back-end Design

The **Back-End of the online marriage registration system** is developed using **Node.js, Express.js, and MongoDB** following a REST API architecture. It manages user authentication, marriage application processing, and admin control securely. The system stores user data, marriage details, and application status in MongoDB collections. It uses JWT for authentication and bcrypt for password encryption to ensure security. The backend provides APIs for user registration, login, application submission, status updates, and admin management. Overall, it ensures fast, secure, and organized handling of all marriage registration data[10].

5.3 Interaction Design and UX

The online marriage registration system focuses on creating a simple, smooth, and user-friendly experience for users during the online marriage registration process.

The interface is designed so users can easily navigate through pages such as registration, login, and application submission without confusion. Clear buttons, readable forms, and step-by-step workflows guide users to complete tasks quickly. Feedback messages (like success, error, or pending status) help users understand what is happening in real time. The system follows a mobile-first responsive design so it works properly on all devices. Minimal steps, clean layouts, and intuitive navigation reduce user effort and improve accessibility. Overall, the UX design ensures a fast, easy, and stress-free experience for completing marriage registration online.

5.4 Implementation Requirement

The implementation of the **Online Marriage Registration System** requires both software and development tools to build a complete, secure, and responsive web application.

1. Software Requirements

❖ Front-End:

- ❖ React JS
- ❖ HTML5, CSS3
- ❖ JavaScript (ES6+)
- ❖ Tailwind CSS / Bootstrap

❖ Back-End:

- ❖ Node.js
- ❖ Express.js

❖ Database:

- ❖ MongoDB (Local or MongoDB Atlas)

2. Development Tools

- ❖ VS Code (Code Editor)
- ❖ Git & GitHub (Version Control)
- ❖ Postman (API Testing)
- ❖ Chrome DevTools (Debugging)

3. Security Requirements

- ❖ JWT (JSON Web Token) for authentication
- ❖ crypt for password hashing
- ❖ Role-based access (User/Admin)
- ❖ Input validation & error handling

4. System Requirements

- ❖ RESTful API communication between frontend and backend
- ❖ Responsive design for mobile, tablet, and desktop

- ❖ Cloud deployment (e.g., Vercel for frontend, Render/Heroku for backend)
- ❖ Secure database connection using environment variables (.env)

5. Additional Requirements

- ❖ User registration and login system
- ❖ Marriage application form with document upload
- ❖ Admin dashboard for managing applications
- ❖ Notification system for status updates

5.5 Web Platform:

The online marriage registration system is a **web-based platform** designed to manage online marriage registration through an interactive and responsive interface. It allows users to access the system from any device using a web browser without installing any software.

The platform is built using the **MERN stack (MongoDB, Express.js, React JS, Node.js)**, where the frontend handles user interaction, the backend processes data securely, and MongoDB stores all registration information. It provides features such as user registration, login, marriage application submission, and admin dashboard for managing requests.

5.6 MongoDB

MongoDB is used as the **primary database** in the online marriage registration system to store all application data in a flexible, document-based format. It manages user information, marriage registration details, documents, and application status efficiently. The database is structured using collections such as **Users**, **Marriage Applications**, and **Notifications**. Each record is stored in JSON-like documents, making data handling simple and scalable. MongoDB provides high performance, easy integration with Node.js, and secure data storage using cloud services like MongoDB Atlas. It ensures fast data retrieval and supports the smooth operation of the system.

CHAPTER 6

IMPLEMENTATION AND TESTING

6.1 Implementation of Database

In the online marriage registration system web application, users must provide a valid **NID Number** and password to sign in to the system in future sessions. If the user enters incorrect credentials, access to the system is denied to ensure security. The authentication process is handled using MongoDB, where user data is stored and verified during login. The system checks whether the provided **NID Number** exists and whether the password matches the stored encrypted password. If either the NID Number or password is invalid, the user cannot log in.

The user of our app is admin, Kazi and married couple. The information is stored in the unique id. When a user sign in the database MongoDB gives a unique id.

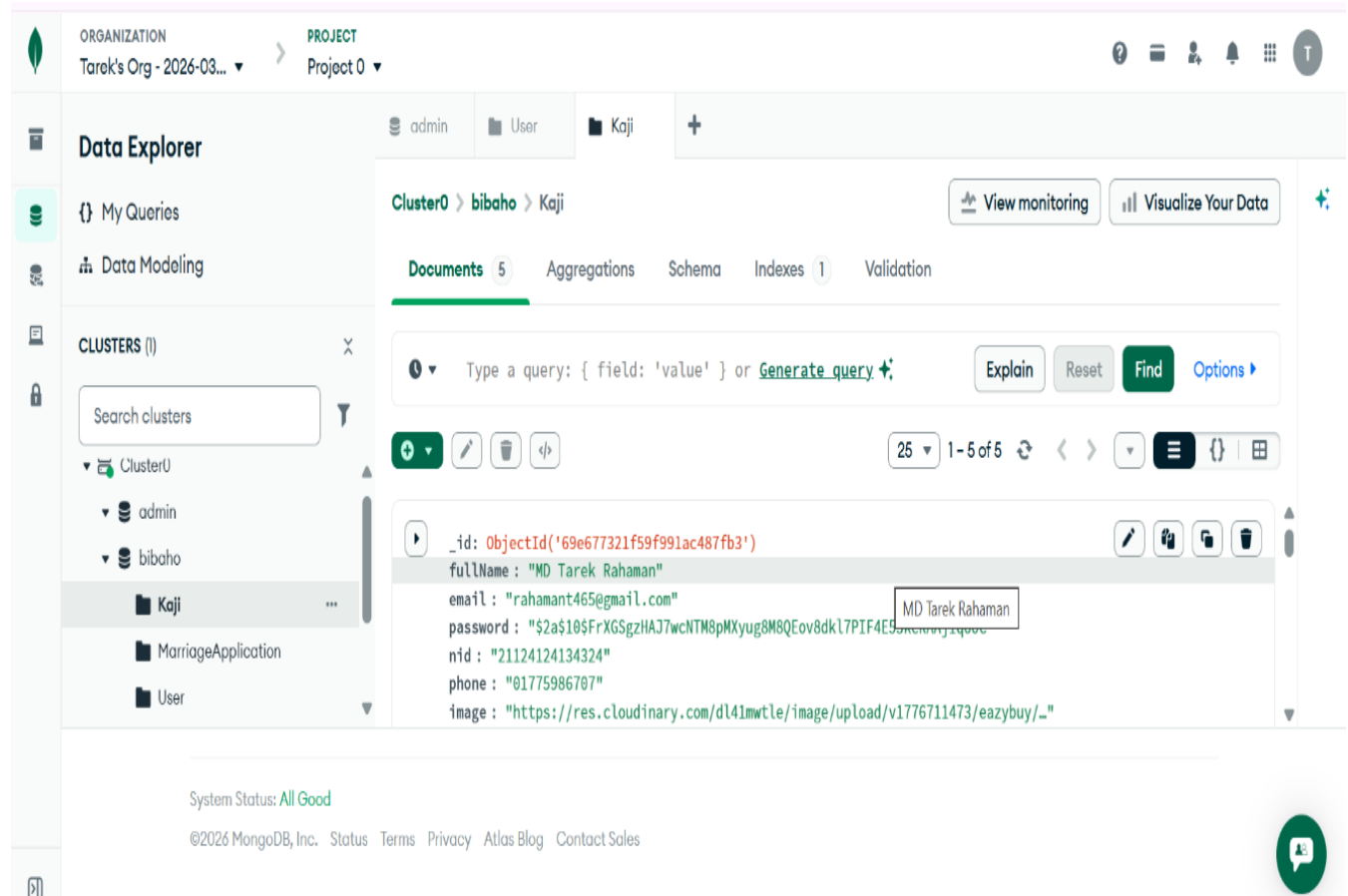


Figure 6.1.1: Kazi's Information

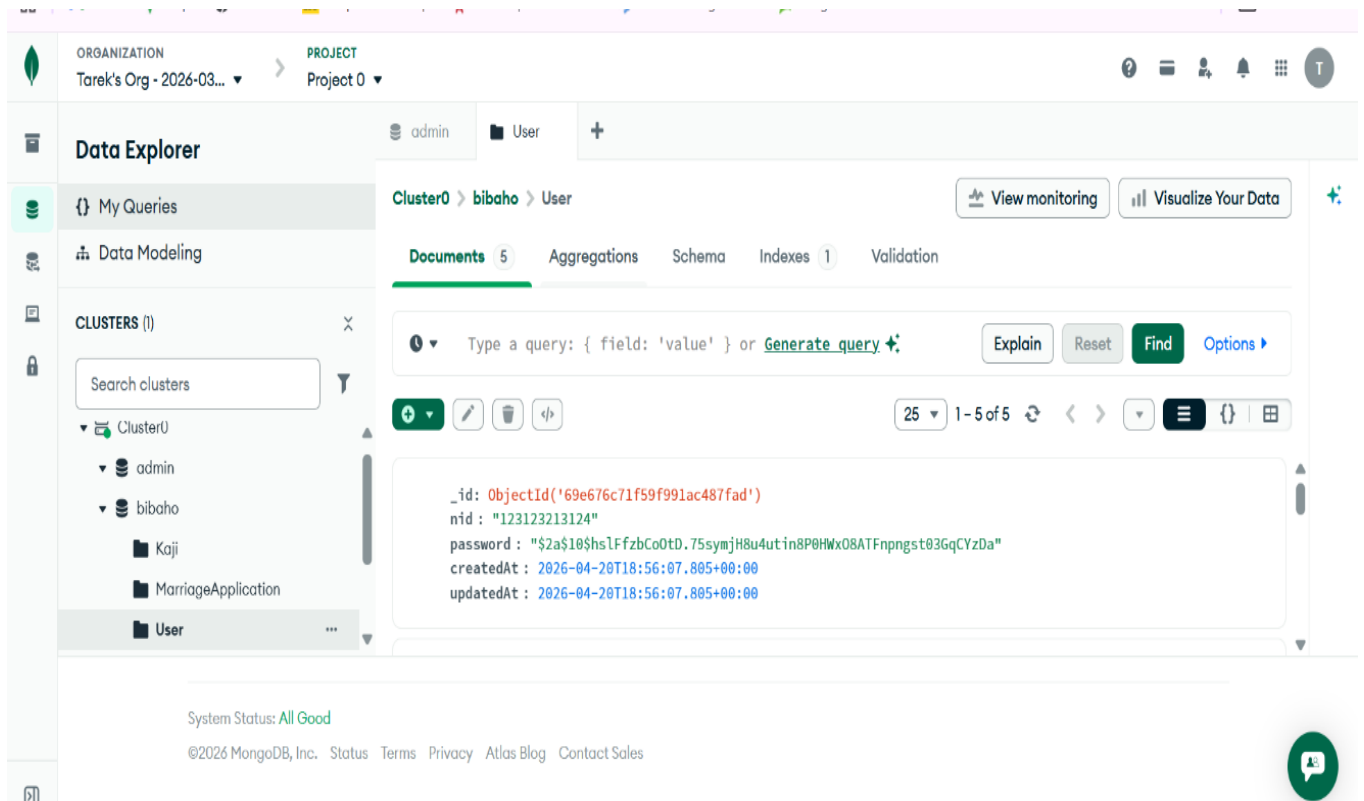


Figure 6.1.2: User Information

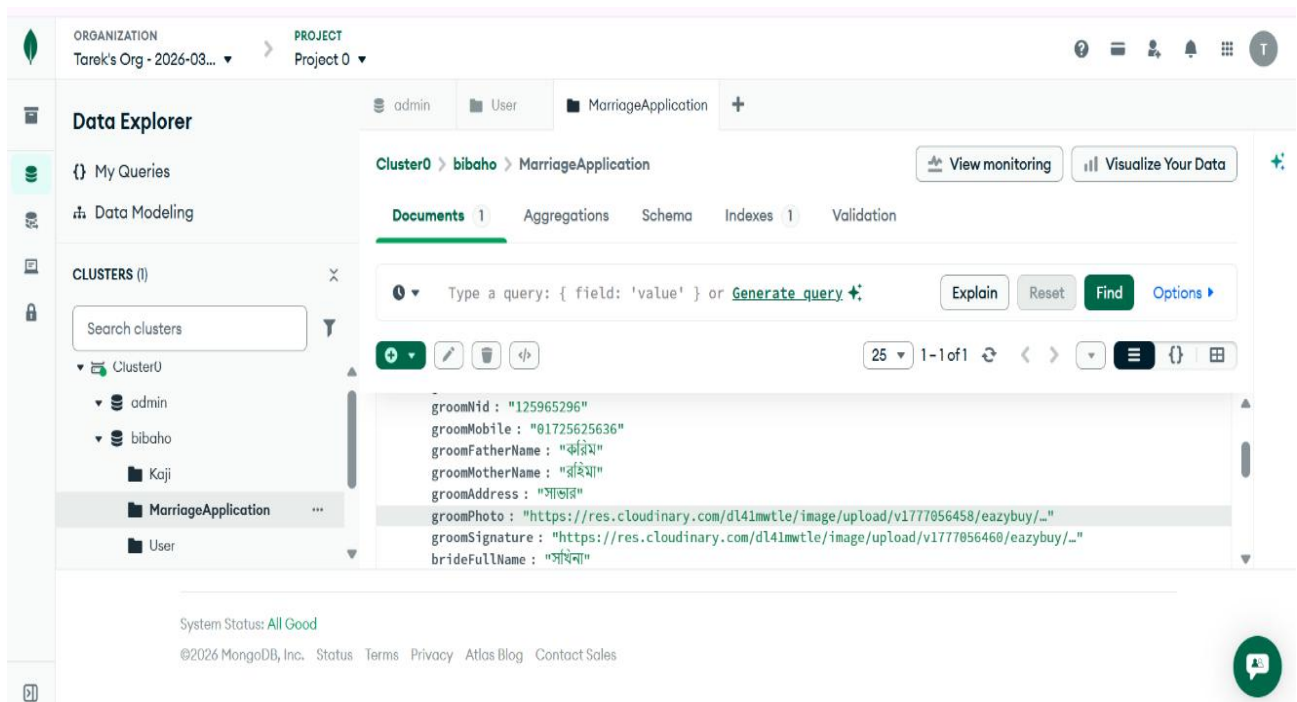
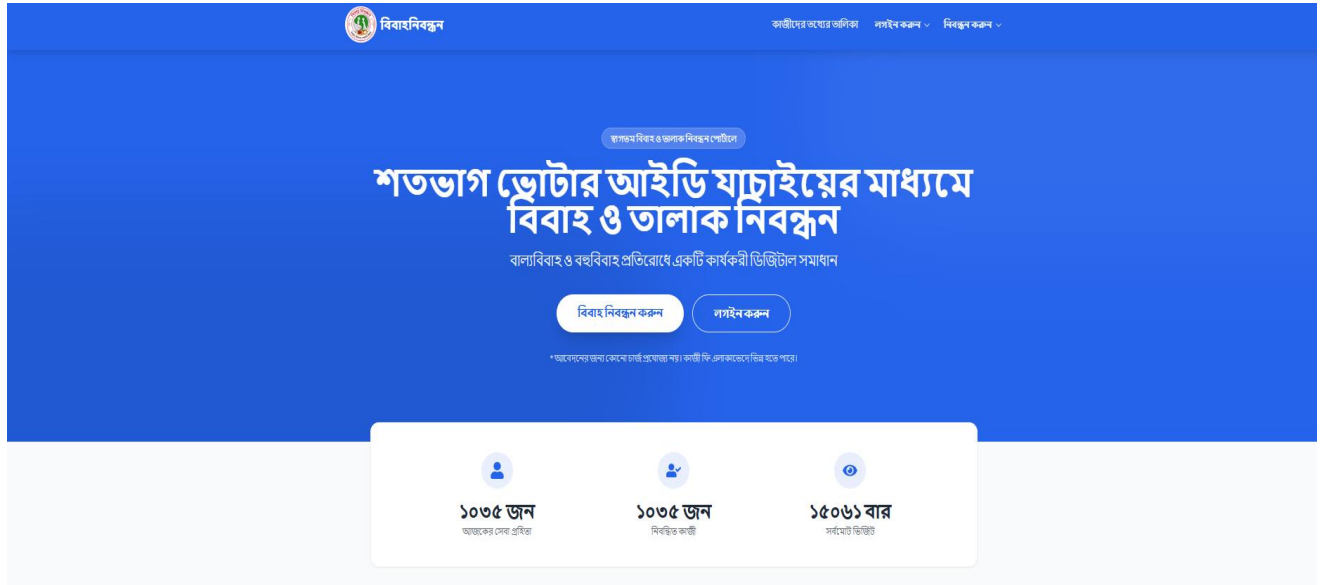


Figure 6.1.3: Marriage Information

6.2 Implementation of Front-end Design

Only the front-end design of the online marriage registration system web application is visible to users, so it is designed to be visually appealing and easy to use. The interface is kept simple, user-friendly, and convenient to ensure a smooth experience. The main users of this system are the **Kazi (marriage registrar)**, **bride and groom (couples)**, and the **admin**. On the home page of the application, we provide clear options for **registration** and **login**, allowing users to quickly access the system.



বাল্যবিবাহ নিয়ে কিছু কথা

বাংলাদেশের ৫১% শতাংশ কিশোরীর বিয়ে হয় ১৮ বছর বয়স পূর্ণ হওয়ার আগেই। বাল্যবিবাহের কারণে মাতৃমৃত্যু কিংবা শিশুমৃত্যুর ঝুঁকি অনেক বেশি হয়ে থাকে। অনেক ক্ষেত্রে নাবালিকা মেয়ে, মা হওয়ায় কীভাবে শিশুকে পরিচর্যা করবে, সে সম্পর্কে সম্যক জ্ঞান থাকে না। এর ফলে মা ও শিশুর মৃত্যু ঘটতে পারে। বাল্যবিবাহের কারণে নারীর প্রতি সহিংসতা, মাতৃমৃত্যু ও ঝুঁকি, অপরিশ্রুত গর্ভধারণ, প্রসবকালীন শিশুর মৃত্যু ঝুঁকি, প্রজনন স্বাস্থ্য সমস্যা, নারীশিক্ষার হার হ্রাস, স্কুল থেকে বারের পড়ার হার বৃদ্ধি, নারীদের অর্থনৈতিকভাবে স্বাবলম্বী হওয়ার ক্ষমতা ও সুযোগ কমে যাওয়াসহ নানা রকম নেতিবাচক প্রভাব পড়ার আশঙ্কা থাকে, বাল্য বিবাহের ফলে বিবাহ বিচ্ছেদের আশংকা তৈরী হওয়া ছাড়াও নানা পারিবারিক অশান্তি দেখা দেয়, বাল্যবিবাহ শুধু ব্যক্তিগত ক্ষতি করে না, বরং পারিবারিক, সামাজিক এবং সর্বোপরি রাষ্ট্রের ক্ষতিসাধনেও সমান অংশীদারী করে যেমন, শিক্ষার আলো এবং স্বাস্থ্যগত কারণে অল্প বয়সের মেয়েটি তার নিজের সম্পর্কে সচেতন না হওয়া, বাল্য বিবাহের শিক্ষার, ছেলে ও মেয়ের শিক্ষা, স্বাস্থ্য, বিনোদনের মত মৌলিক মানবাধিকার লংঘিত হয়, যা তাকে তার সারাজীবনের জন্য ক্ষতিগ্রস্ত করে, একারণে বাল্যবিয়ের অভিশাপ থেকে রক্ষা পেতে, জাতীয় পরিচয় পত্র (ভোটার আইডি/ জন্ম নিবন্ধন সনদ ব্যতীত কোন অবস্থাতেই নিকাহ রেজিস্টার নয়।

বাল্য বিয়ে আর নয়

আমি চাই বাল্য বিবাহের কারণে মেয়েদের স্বাস্থ্য ঝুঁকি, শিক্ষা না পাওয়া, যৌতুকের বলি হওয়া এবং পরাধীনতার শৃঙ্খলে আর বন্ধ না হোক। জীবনকে উপভোগ করুক নির্মল আনন্দে। নারীর ক্ষমতায়নে প্রধানতম বাধা হিসেবেও বাল্যবিবাহকে চিহ্নিত করা যায়। বাল্য বিবাহের শিকার ছেলে বা মেয়ে সে যাই হক না কেন সে তার উচ্চ শিক্ষা এমনকি কোন কোন ক্ষেত্রে শিশু শিক্ষা থেকেও বঞ্চিত হয়। ফলে শিক্ষার আলো থেকে বঞ্চিত শিশু, কিশোরী এবং কোন কোন ক্ষেত্রে কিশোরীরাও উন্নত জীবন ব্যবস্থা, আধুনিক প্রযুক্তিগত তথ্য প্রবাহ থেকে বঞ্চিত। তাই বাল্য বিবাহ প্রতিরোধে আমাদের সবাইকে এগিয়ে আসতে হবে। বিয়ে অথবা তালাক একটি ধর্মীয় কাজ প্রতিটি ধর্মগ্রন্থেই বিয়ের ব্যাপারে বলা হয়েছে, এই বিয়ে নিয়ে অনেকেই অসং ভাবে অসং উপায়ে নানা ধরনের অপকর্ম করে যাচ্ছে বিশেষ করে বাল্য বিবাহ, পরিচয় গোপন করে অন্য জায়গায় বিয়ে, বয়স গোপন রেখে বিয়ে, এই ধরনের সামাজিক অপকর্ম দিন দিন বেড়েই যাচ্ছে, তাই এই ধরনের সামাজিক অপকর্ম থেকে রক্ষা পেতে, নারী ও শিশুর মৃত্যুর হার কমাতে, নারীদের সামাজিক সম্মান বৃদ্ধির লক্ষে, কন্যা শিশুদের অধিকার প্রতিষ্ঠা লক্ষে, বিয়ে ও তালাক সম্পূর্ণ ডিজিটালাইজড করার লক্ষ্যে আমাদের এই প্রকল্প বিবাহ নিবন্ধন



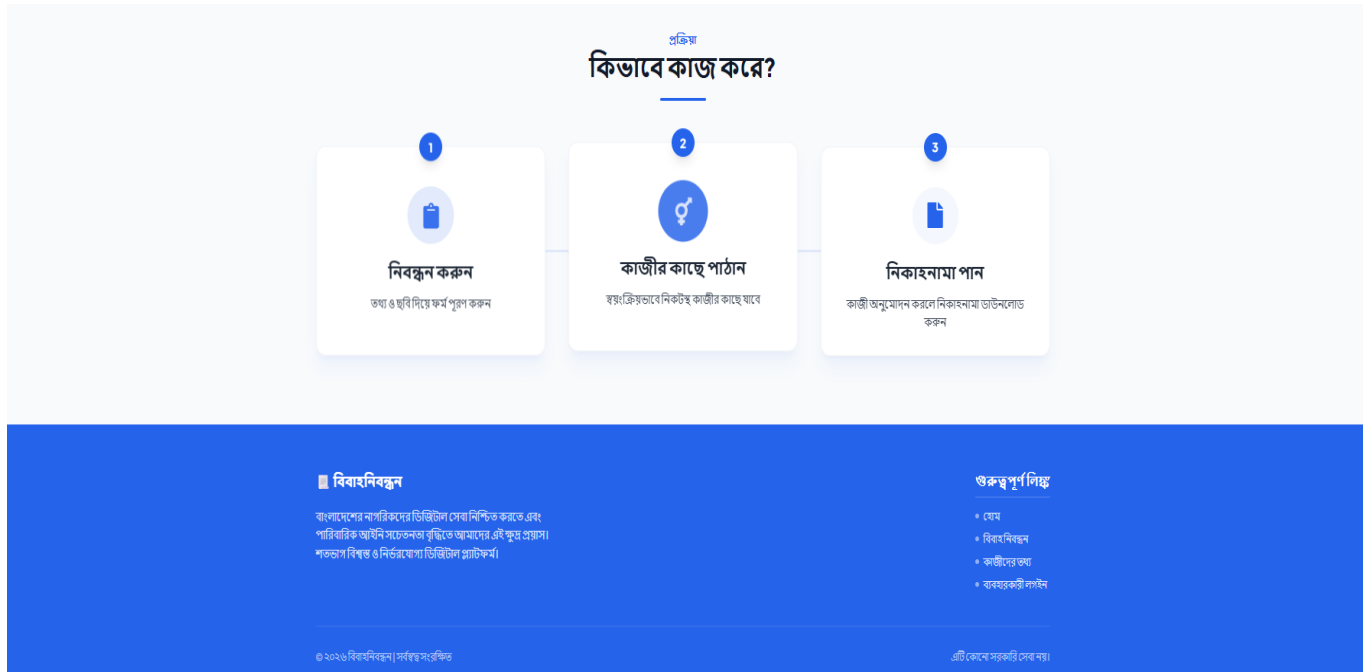


Figure 6.2.1: Home Page

In the online marriage registration system, the **Super Admin** accesses the platform through a secure login page by providing valid **Name** and **Password** credentials. The authentication process ensures that only authorized users can enter the admin panel. If the credentials are incorrect, access is denied, maintaining system security.

After successful login, the Super Admin is redirected to a **centralized dashboard** that provides a complete overview of the system. The dashboard displays important information such as total users, registered couples, submitted marriage applications, and their current status (pending, approved, or rejected).

From the dashboard, the Super Admin can manage all system operations, including user management (adding/removing Kazi and users), reviewing applications, updating application status, and monitoring system activities. The interface is designed to be clear and organized, allowing quick access to different sections and efficient control of the entire system.



বিবাহনিবন্ধন

কাজীদের তথ্যের তালিকা [লগইন করুন](#) [নিবন্ধন করুন](#)

Admin Login

* Username

* Password

[LOGIN AS ADMIN](#)

 **বিবাহনিবন্ধন**

বাংলাদেশের নাগরিকদের ডিজিটাল সেবা নিশ্চিত করতে এবং
পারিবারিক আইনি সচেতনতা বৃদ্ধিতে আমাদের এই ক্ষুদ্র প্রয়াস।
শতভাগ বিশ্বস্ত ও নির্ভরযোগ্য ডিজিটাল প্র্যাটফর্ম।

গুরুত্বপূর্ণ লিঙ্ক

- [হোম](#)
- [বিবাহ নিবন্ধন](#)
- [কাজীদের তথ্য](#)
- [ব্যবহারকারী লগইন](#)

© ২০২৬ বিবাহনিবন্ধন | সর্বস্বত্ব সংরক্ষিত

এটি কোনো সরকারি সেবা নয়।

Figure 6.2.2: Admin Login Form

অ্যাডমিন ড্যাশবোর্ড

BIBAHO SYSTEM CONTROL CENTER



সাইনআউট



মোট কাজী
6



কাজী রিভিউ
0



বিবাহ নিবন্ধন
2



তালিকাভুক্ত
2

কাজী তালিকা ও ব্যবস্থাপনা

নিবন্ধিত কাজীদের তথ্য যাচাই এবং স্ট্যাটাস পরিবর্তন করুন

নাম	লাইসেন্স নম্বর	ফোন	বিভাগ	স্ট্যাটাস	অ্যাকশন
MD Tarek Rahaman	1478523690	01775986707	Barishal	সক্রিয়	বিস্তারিত রিসেট
Sabbir	1452365062	01524563048552	Sylhet	সক্রিয়	বিস্তারিত রিসেট
Akash	15236412	01856243425	Chattogram	সক্রিয়	বিস্তারিত রিসেট
sofikur rahman	147852369	0197854622	Dhaka	সক্রিয়	বিস্তারিত রিসেট
Sumon Hossen	14523636	0192353635	Dhaka	সক্রিয়	বিস্তারিত রিসেট
MD Tarek Rahaman	6345232535	01775986707	Rajshahi	সক্রিয়	বিস্তারিত রিসেট

< 1 >

আবেদনসমূহ (SYSTEM APPLICATIONS)

[বিবাহ নিবন্ধন \(2\)](#)

[তালিকাভুক্ত \(2\)](#)

বর ও কনে	কাজী	তারিখ ও স্থান	স্ট্যাটাস	অ্যাকশন
জামাল ও নিজা বেগম	MD Tarek Rahaman 1478523690	৩০/৮/২০২৬ চরফ্যাশন	গৃহীত	বিবরণ দেখুন
শরিফ ও সখিনা	Sumon Hossen 14523636	৩০/৮/২০২৬ সাতার	অপেক্ষমান	বিবরণ দেখুন

Figure 6.2.3: Admin Dashboard

If any user wants to use our app at first, he or she need to register using register option. After clicking on the register option, the following page will appear to the user. In figure we can see how a user completes the registration to user our app.

The screenshot shows the 'অ্যাকাউন্ট তৈরি করুন' (Create Account) page. At the top, there is a blue header with the Bangladesh Marriage Registration logo and text 'বিবাহনিবন্ধন'. To the right of the header are links: 'কার্তীদের তথ্যের তালিকা', 'লগইন করুন', and 'নিবন্ধন করুন'. The main content area is white and contains a registration form. The form has a title 'অ্যাকাউন্ট তৈরি করুন' and a subtitle 'আপনার যাত্রা শুরু করতে একটি অ্যাকাউন্ট তৈরি করুন'. It includes two input fields: 'জাতীয় পরিচয়পত্র নম্বর (NID)' with a placeholder 'NID নম্বর', and 'পাসওয়ার্ড' with a placeholder 'কমপক্ষে ৬ অক্ষরের পাসওয়ার্ড' and an eye icon. Below the fields is a blue button labeled 'নিবন্ধন করুন'. At the bottom, there is a link 'ইতিমধ্যেই অ্যাকাউন্ট আছে? লগইন করুন'.

Figure 6.2.4: User Registration

The **User Dashboard** in the online marriage registration system provides a personalized interface where users can manage them. After logging in, users can view their profile information, submit marriage applications, and track the status of their applications (pending, approved, or rejected). The dashboard also displays notifications and allows users to update their details when needed. It is designed with a clean and simple layout to ensure easy navigation and a smooth user experience.

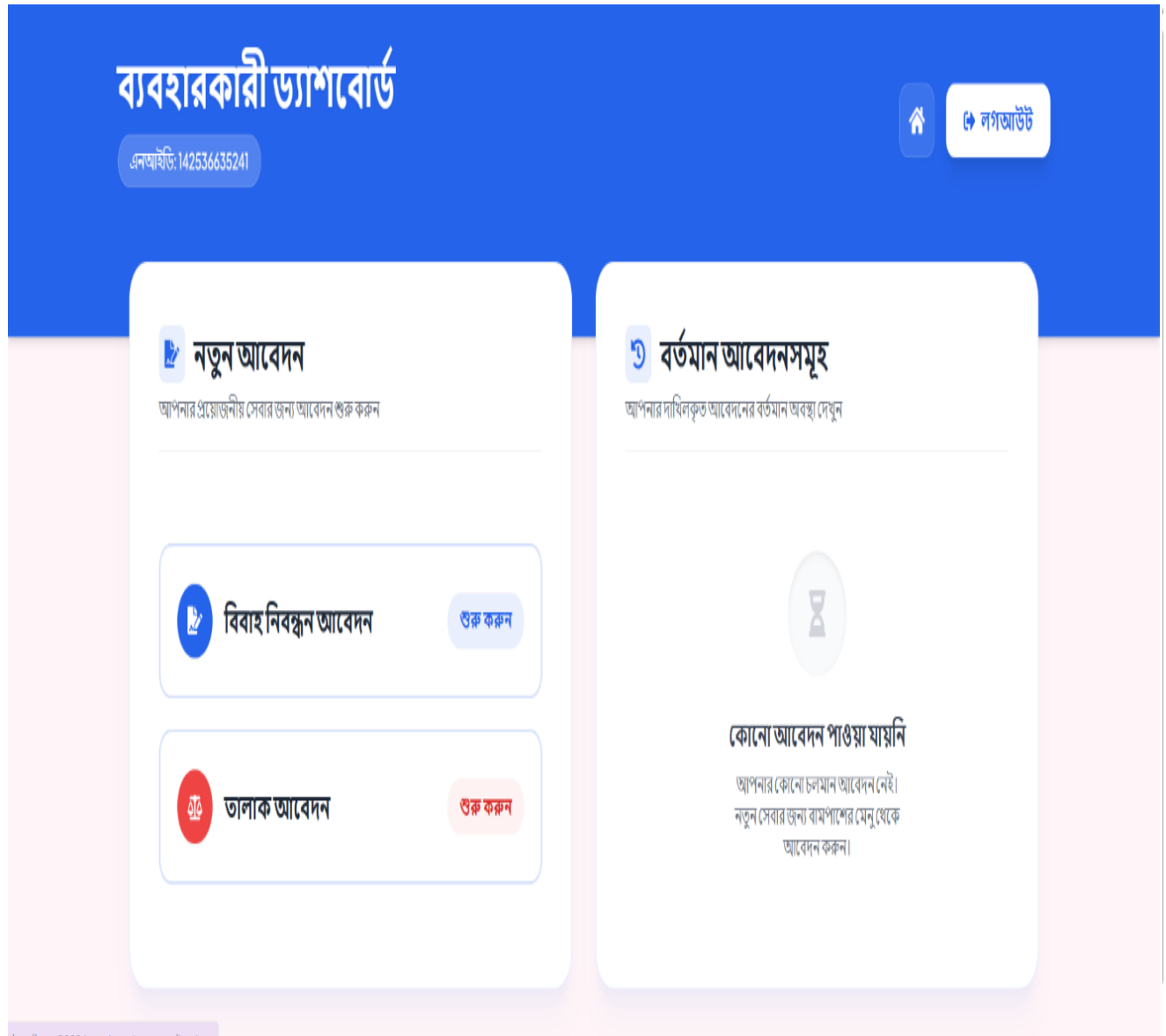


Figure 6.2.5: User Dashboard

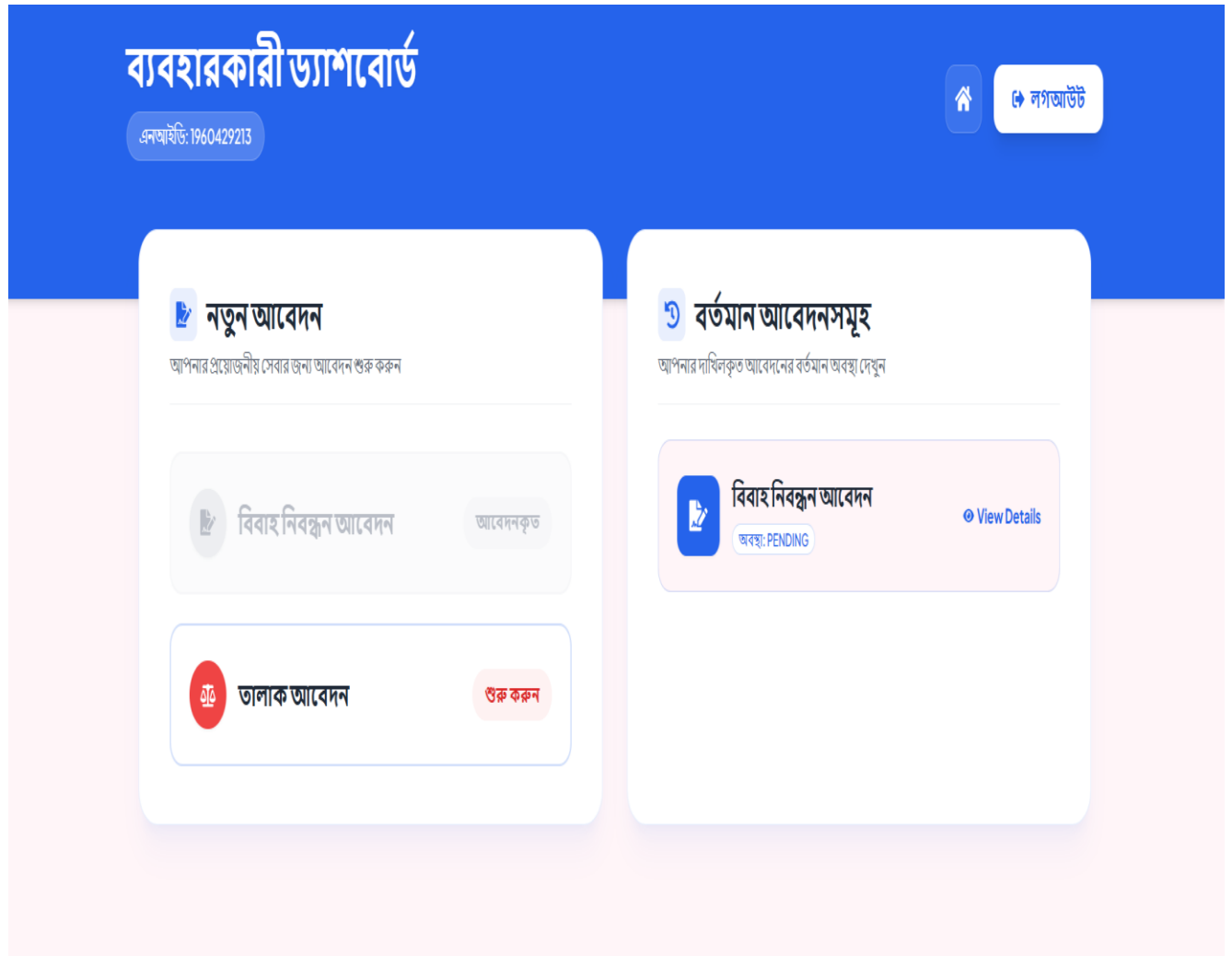


Figure 6.2.7: Pending Application

বিবাহনিবন্ধন
বিবাহ নিবন্ধনের আবেদন ফর্ম

আবেদন আইডি: 69ebbacc4146dfd5c7628ba5

দাখিলের তারিখ: ২৫/৪/২০২৬

বরের বিবরণ

নাম: শরিফ
এনআইডি: 125965296
পিতার নাম: করিম
মাতার নাম: রহিমা
মোবাইল: 01725625636
ঠিকানা: সাতার



কনের বিবরণ

নাম: সখিনা
এনআইডি: 14782256396
পিতার নাম: রহিম
মাতার নাম: মর্জিনা
মোবাইল: 01556329825
ঠিকানা: আশুলিয়া



বিবাহের তথ্য

বিবাহের তারিখ:	৩০/৪/২০২৬	দেনমোহর পরিমাণ:	102432 টাকা
বিবাহের স্থান:	সাতার		

সাক্ষী ও উকিলের বিবরণ

পদক্ষেপ/সম্পর্ক	নাম	এনআইডি নম্বর
উকিল (ডাই)	জামাল	-
বরের সাক্ষী ১	কামাল	14785236955
বরের সাক্ষী ২	জুব্বার	2146565632
কনের সাক্ষী ১	কামাল	1546556265
কনের সাক্ষী ২	আফজাল	154265555

বরের স্বাক্ষর

কনের স্বাক্ষর

Figure 6.2.8: Download Application Form

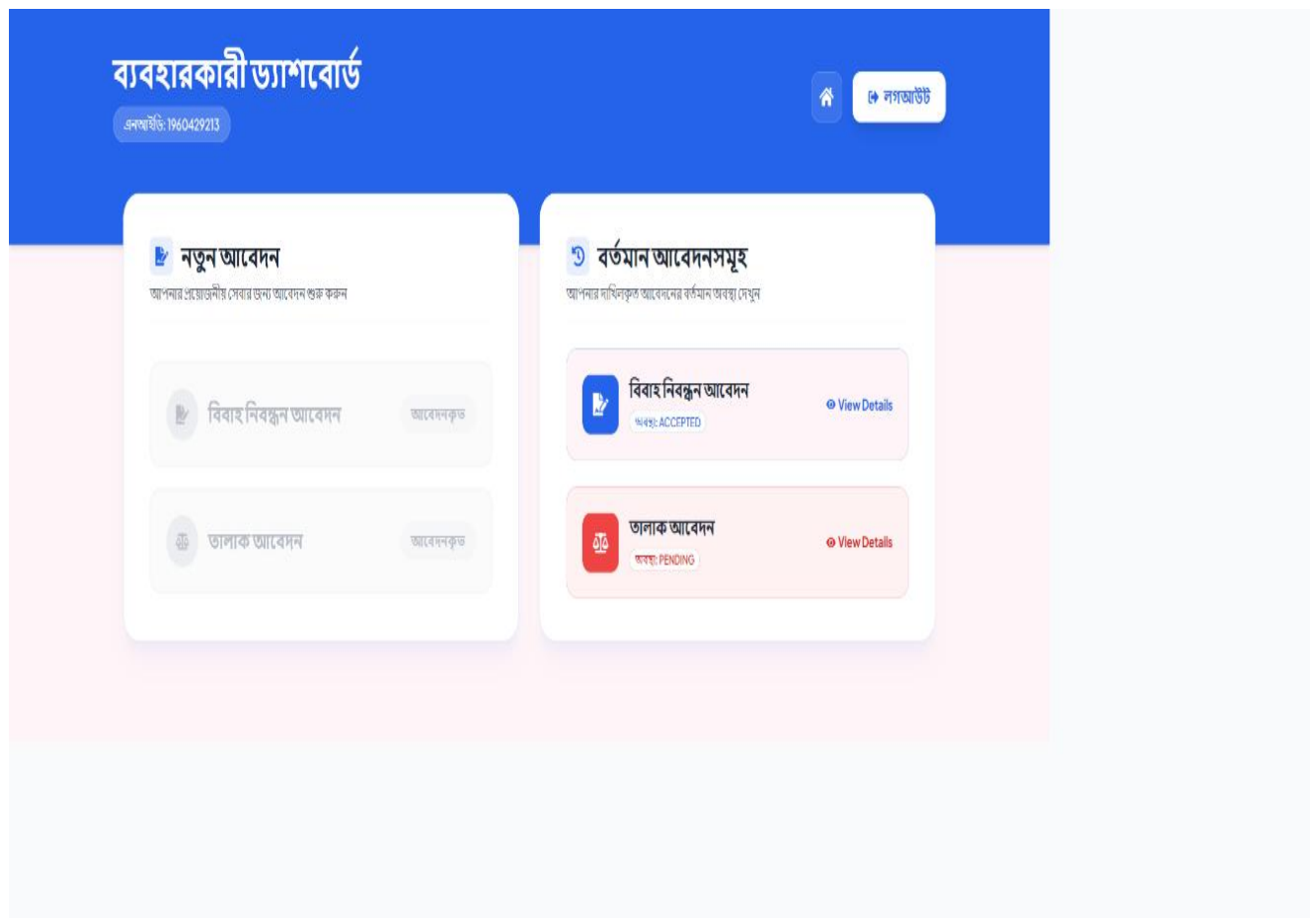


Figure 6.2.9: Pending Divorce Application

৐ বিবাহনিবন্ধন ও বিচ্ছেদ

তালকনামা আবেদন ফর্ম

আবেদন আইডি: 69ee5ec710b7e8ccfe9936d7

দাখিলের তারিখ: ২৭/৪/২০২৬

স্বামীর বিবরণ		স্ত্রীর বিবরণ	
নাম:	শাকিল	নাম:	রিমা বেগম
এনআইডি:	148729536	এনআইডি:	1452696585
পিতার নাম:	রহিম	পিতার নাম:	করিম
মাতার নাম:	রহিমা	মাতার নাম:	মমতাজু
ঠিকানা:	সাতার	ঠিকানা:	বরিশাল

বিচ্ছেদের তথ্য			
কার্যকর তারিখ:	৩০/৪/২০২৬	বিচ্ছেদের স্থান:	চরফ্যাশন
কারণ:	দাম্পত্য জীবনে তৃতীয় পক্ষ বা পরিবারের সদস্যদের অতিরিক্ত প্রভাব এর কারন।		

সাক্ষীদের বিবরণ		
সাক্ষীর ধরন	নাম	এনআইডি নম্বর
সাক্ষী ১	মনির	147527552
সাক্ষী ২	ইমন	465465484

আবেদনকারীর স্বাক্ষর

কাজীর স্বাক্ষর ও সিল

Figure 6.2.11: Download Divorce Application Form



বিবাহনিবন্ধন

কাজীদের তথ্যের তালিকা

লগইন করুন

নিবন্ধন করুন

কাজী নিবন্ধন

একজন নিবন্ধিত কাজী হিসেবে নিজেকে প্রতিষ্ঠিত করুন এবং আধুনিক বিবাহ নিবন্ধনের অংশ হোন

REGISTRATION FORM

ব্যক্তিগত তথ্য

পূর্ণ নাম

আপনার নাম লিখুন

ইমেইল ঠিকানা

example@mail.com

ফোন নম্বর

০১০০০০০০০০০

জাতীয় পরিচয়পত্র নম্বর (NID)

আপনার ১০ বা ১৭ ডিজিটের এনআইডি নম্বর

পাসপোর্ট সাইজ ছবি আপলোড করুন

ছবি আপলোড করুন

পেশাগত তথ্য

লাইসেন্স নম্বর

লাইসেন্স নম্বর লিখুন

প্রতিষ্ঠানের নাম

প্রতিষ্ঠানের নাম

ঠিকানা ও অবস্থান

বিভাগ

জেলা

উপজেলা

বিভাগ Choose

জেলা Choose

উপজেলা Choose

বিস্তারিত ঠিকানা

গ্রাম, রাস্তা নম্বর, এলাকা

নিরাপত্তা

পাসওয়ার্ড নির্ধারণ করুন

কমপক্ষে ৬ অক্ষরের শক্তিশালী পাসওয়ার্ড

নিবন্ধন সম্পন্ন করুন

* সকল তথ্য নির্ভুলভাবে প্রদান করা যাবেন। ভুল তথ্যের জন্য আবেদন বাতিল হতে পারে।

ইতিমধ্যেই একাউন্ট আছে? লগইন করুন

মূল পাতায় ফিরে যান

নিবন্ধন করার মাধ্যমে আপনি আমাদের শর্তাবলী মেনে নিচ্ছেন

বিবাহনিবন্ধন

বাংলাদেশের নাগরিকদের ডিজিটাল সেবা নিশ্চিত করতে এবং পারিবারিক আইনি সচেতনতা বৃদ্ধিতে আমাদের এই ক্ষম প্রয়াস। শতভাগ বিশ্বস্ত ও নির্ভরযোগ্য ডিজিটাল প্রাচীর।

গুরুত্বপূর্ণ লিঙ্ক

হোম

বিবাহ নিবন্ধন

কাজীদের তথ্য

ব্যবহারকারী লগইন

© ২০২৩ বিবাহনিবন্ধন | সর্বস্বত্ব সংরক্ষিত

এটি কোনো সরকারি সেবা নয়।

Figure 6.2.12: Kazi Registration Form



কাজী লগইন

আপনার একাউন্টে প্রবেশ করুন

এনআইডি নম্বর

পাসওয়ার্ড



কাজী হিসেবে লগইন করুন

একাউন্ট নেই? [এখানে নিবন্ধন করুন](#)

মূল পাতায় ফিরে যান

বিবাহনিবন্ধন

বাংলাদেশের নাগরিকদের ডিজিটাল সেবা নিশ্চিত করতে এবং
পারিবারিক আইনি সচেতনতা বৃদ্ধিতে আমাদের এই ক্ষুদ্র প্রয়াস।
শতভাগ বিশ্বস্ত ও নির্ভরযোগ্য ডিজিটাল প্ল্যাটফর্ম।

গুরুত্বপূর্ণ লিঙ্ক

- হোম
- বিবাহ নিবন্ধন
- কাজীদের তথ্য
- ব্যবহারকারী লগইন

Figure 6.2.13: Kazi Login Form

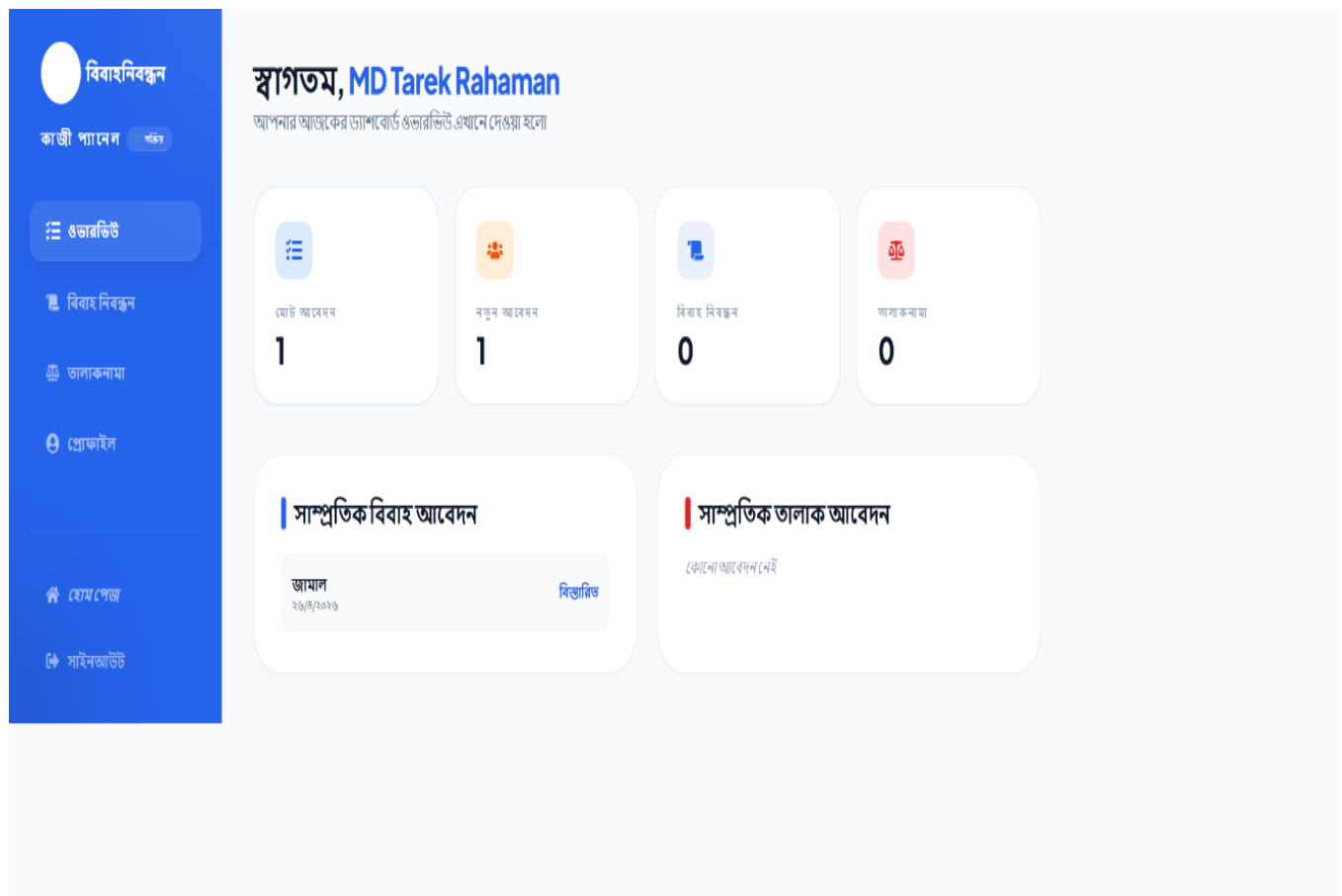


Figure 6.2.14.: Kazi Dashboard

6.3 Implementation of Interaction

The interaction design of the online marriage registration system is implemented to ensure smooth and effective communication between users and the system. User interactions are handled through a dynamic front-end built with **React JS**, where actions such as clicking buttons, submitting forms, and navigating pages trigger immediate responses.

Forms like registration, login, and marriage application include real-time validation to guide users and reduce errors. The system provides instant feedback through alerts, messages, and status updates (e.g., success, error, pending), helping users understand each step clearly.

Navigation is implemented using React Router, allowing seamless page transitions without reloading. Interactive components such as dashboards, notifications, and status tracking enhance user engagement. Overall, the interaction implementation ensures a responsive, user-friendly, and efficient experience throughout the application.

6.4 Testing Implementation

Our goal is to design a series of test cases that has a high likelihood of finding errors. To finding errors. To uncover the errors software techniques are used. There techniques provide systematic guidance for designing test:

1. Exercise the internal logic of software components and
2. Exercise the input and output domains of the program to uncover errors in program function, behavior and performance.

Table 6.4.1: Test case shows the following test case has been done for several time to detect errors.

Sl. No	Test Case ID	Test Case Name	Test Case Description	Step	Expected Result	Actual Result	Test Case Status Pass/Fail
1	Login Admin	Validate Login	To Verify That Login Name on Login Page	Enter the Login Name and Password and Click Sign in Button	Login Successful or an Error Message "Failed Sign in" Must be Shown	Login Successful	Pass
2	Login User	Validate login	To verify That login Name on Login page	Enter the Login name and password and click Sign in button	Login successful or an error message "Failed Sign in must be shown"	Login successful	Pass
3	Login Kazi	Validate login	To verify That login Name on Login page	Enter the Login name and password and click Sign in button	Login successful or an error message "Failed Sign in	Login successful	Pass

					must be shown”		
4	Password	Validate Password	To verify that password on login page	Enter password and login name and click sign in button	An error message “password invalid” must be displayed	Password is invalid	Fail
5	Sign Out	Sign out from the system	To log out from the account	Click on the sign out button	Sign out from the system	Sign out successful	Pass

6.5 Test Result and Reports

Test reports present the outcomes of testing in a clear, structured, and professional manner for the online marriage registration system. They compile all evaluated data, including testing objectives, environment setup, and operating conditions under which the system was tested. Each report explains how different modules—such as user registration, login, dashboard, and marriage application—performed during testing.

The reports help identify errors, inconsistencies, and performance issues, and also document how these issues were resolved. By carefully analyzing the test reports, developers and stakeholders can determine the reliability, efficiency, and readiness of the application for real-world use.

In Table 6.4.1, detailed test case information is provided, including the test case number, unique test case ID, description of the test, step-by-step procedure, expected results, actual results obtained during execution, and the final status (pass or fail).

CHAPTER 7

CONCLUSION AND FUTURE WORKS

7.1 Conclusion

In conclusion, the online marriage registration system serves as a modern digital platform that simplifies and improves the traditional process of marriage registration and certificate issuance. Instead of relying on manual procedures and physical visits to government offices, the system allows couples to complete the entire process online in a more convenient, fast, and secure way.

The platform provides essential features such as online registration, form submission, document upload, application status tracking, and secure authentication. It ensures that all user data is handled safely, while the step-by-step workflow guides users through the process with clarity and ease. The system also supports administrative control, where authorized personnel can verify submitted information, approve or reject applications, and manage records efficiently.

The user interface is designed to be simple, responsive, and user-friendly, making it accessible to a wide range of users including couples, marriage registrars (Kazi), and administrators. Proper validation and verification mechanisms are implemented to maintain data accuracy and prevent misuse.

7.2 Limitations

Validity and Acceptance: The acceptance of online marriage certificates can vary from one jurisdiction to another. Some regions and organizations may not recognize digital certificates, preferring physical copies with official seals and signatures. It's important to check with the relevant authorities to ensure the online certificate is accepted where it is needed[5].

Security Concerns: Online marriage certificates may be susceptible to fraud or hacking. If not properly secured, they could be altered or forged. Ensuring the security of digital records is crucial to maintaining their integrity.

Access and Technology: Not everyone has easy access to the internet or the necessary technology to access online marriage certificates. This can be a barrier for individuals who need to obtain or verify their marriage status, particularly in less-developed or remote areas.

Privacy: Online certificates may raise concerns about privacy. Personal information, such as names, dates of birth, and addresses, may be accessible online, potentially exposing individuals to identity theft or other risks.

Technical Issues: Online systems can experience technical glitches, downtime, or server outages. These issues can hinder individuals from accessing their marriage certificates when they need them.

Dependence on Digital Infrastructure: Online marriage certificates rely on digital infrastructure, including databases and servers. Any disruption or failure in this infrastructure can result in the unavailability of these documents.

Lack of Physical Copy: Some individuals may prefer or require physical copies of marriage certificates for various purposes, such as visa applications, name changes, or insurance claims. Online certificates may not fulfill these needs without additional steps to obtain a physical copy.

Authentication Challenges: Verifying the authenticity of online marriage certificates can be more challenging than physical ones. Digital signatures and encryption may help address this issue, but they are not foolproof.

Legal Differences: The legal requirements for marriage certificates can vary widely by jurisdiction. Online certificates may not always comply with the specific requirements of a particular region, leading to issues when trying to use them for legal or administrative purposes.

Long-Term Accessibility: There is a risk that online marriage certificates may become inaccessible or lost over time due to changes in technology, website closures, or other unforeseen events. Storing digital copies in multiple secure locations or using trusted third-party services may mitigate this risk. In summary, while online marriage certificates offer convenience and accessibility, they also come with limitations related to acceptance, security, privacy, technology, and legal requirements. It's essential to understand these limitations and consider the specific requirements of your situation when choosing between online and physical marriage certificates.

7.3 Future Works

Real Data Collection: We have to collect real data from government to create a database for all the people of Bangladesh. So that we can implement our web application for every users. Then every user can apply for their marriage certificate.

Blockchain Technology: Integrating blockchain technology can enhance the security and authenticity of online marriage certificates. Blockchain provides a tamper-resistant and transparent ledger, making it difficult to alter or forge records. Several governments are already exploring the use of blockchain for vital records like marriage certificates[3].

Smart Contracts: Smart contracts, which are self-executing contracts with the terms of the agreement between parties directly written into code, could automate various processes related to marriage certificates. This could include automatically updating records after a marriage ceremony, simplifying name change procedures, and managing spousal benefits.

Global Standardization: Efforts to create global standards for online marriage certificates could make them more universally recognized and accepted. Standardized formats and data structures could facilitate cross-border recognition and reduce administrative burdens[4].

Biometric Authentication: To enhance security, future online marriage certificates may incorporate biometric authentication methods, such as fingerprints or facial recognition, to ensure that individuals accessing the certificates are authorized.

Mobile Accessibility: Mobile applications and digital wallets could become more common for storing and accessing online marriage certificates, increasing convenience for individuals who need to present them for various purposes.

Enhanced Privacy Measures: Future systems may incorporate advanced encryption and data protection techniques to safeguard the personal information contained in marriage certificates, addressing privacy concerns.

Interoperability: Improved interoperability between government agencies, healthcare providers, financial institutions, and other organizations that rely on marriage certificates could streamline processes like name changes, beneficiary designations, and insurance claims.

Digital Signatures: The use of digital signatures and certificates issued by trusted authorities could become more widespread, making it easier to verify the authenticity of online marriage certificates.

Cloud Storage: Cloud-based storage solutions could offer long-term accessibility and data redundancy, ensuring that online marriage certificates remain accessible even if the original issuing authority experiences technical issues or discontinues its service.

AI and Automation: Artificial intelligence and automation could be used to streamline the issuance and verification of marriage certificates, reducing processing times and errors.

Multilingual Support: Online marriage certificate systems may offer multilingual support to cater to a diverse population, ensuring that individuals from different linguistic backgrounds can access and understand their certificates.

Cross-Agency Integration: Integration between agencies responsible for various aspects of marriage, such as marriage licenses, tax benefits, and immigration services, could create a more seamless experience for couples.

Digital Preservation: Robust digital preservation strategies could ensure the long-term accessibility and integrity of online marriage certificates, preventing loss of data due to technological changes or obsolescence.

User Education: Future efforts may focus on educating the public about the benefits and proper use of online marriage certificates, as well as the importance of safeguarding personal information.

It's important to note that the adoption of these future developments may vary by region and depend on legal and regulatory frameworks. As technology continues to advance, online marriage certificates have the potential to become more secure, convenient, and widely accepted in the years ahead.

REFERENCES

- [1] Khalilullah Muhammad, Md Noor Alam, "Online Marriage Registration", Md Hasanuzzaman, p.1-5, December 2018[online]. Available: studocu, <https://www.studocu.com>
- [2] Md. Mahfuzur Rahman, "E-Marriage Registration," dspace repository, p. 18-19, October 2019[online]. Available: dspace repository, <http://dspace.daffodilvarsity.edu.bd/>
- [3] Akand, Md Al-Sajiduzzaman, Sarwar Azmain Reza, and Amatul Bushra Akhi, "Blockchain-Based Islamic Marriage Certification" Intelligent control and automation , vol 13, p.39-53, April 2022.
- [4] Maswandi, Maswandi. "Procedure for issuing Polandandri Marriage Certificate at KUA." In Proceeding International Seminar of Islamic Studies, vol. 1, no. 1, pp. 108-113. 2019.
- [5] Wikipedia contributors, "Ministry of Foreign Affairs (Bangladesh)," Wikipedia, The Free Encyclopedia, 2023[E-book], Available: <https://mofa.gov.bd/>
- [6] Government of the People's Republic of Bangladesh, "CRVS (Marriage & Divorce) Portal," Available: <https://marriage.gov.bd>
- [7] Government of the People's Republic of Bangladesh, "Marriage Registration Information System," Available: <https://marriage.gov.bd>
- [8] Government of Bangladesh, "myGov Bangladesh," Available: <https://mygov.bd>
- [9] PHPGurukul, "Online Marriage Registration System using PHP and MySQL," Available: <https://phpgurukul.com/online-marriage-registration-system-using-php-and-mysql/>
- [10] Webs Adroit, "Marriage Registration Laravel Web Application Case Study," Available: <https://www.websadroit.com/case-study/marriage-registration-laravel-web-app>
- [11] Sbibaho, "Online Marriage Platform," Available: <https://sbibaho.com>