UNIVERSITI TEKNOLOGI MARA

CS240 BACHELOR OF INFORMATION TECHNOLOGY (HONS.)

CSC584 ENTERPRISE PROGRAMMING

GROUP: NBCS2404B

PROJECT NAME:

Emergency Shelter Booking & Supply Management System (SELAMAT)

PREPARED FOR

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1. PROJECT OVERVIEW

1.1 Project Description

The Emergency Shelter Booking & Supply Management System, also known as SELAMAT, is a web-based platform designed to streamline the management of emergency shelters and their essential supplies. This system facilitates the efficient allocation, reservation, and tracking of shelter spaces and resources during natural disasters or emergency situations. It ensures real-time coordination among disaster relief agencies, shelter managers, and affected communities.

1.2 Key Features

- Online shelter booking and reservation system
- Supply inventory and tracking
- Admin dashboard for shelter and resource management
- Real-time updates and alerts
- User role management (admin, volunteer, evacuee)
- Reports and analytics for post-disaster assessment

1.3 Purpose

To provide an efficient, centralized digital system for emergency response teams and the public to manage shelter availability and critical supplies during disasters, reducing confusion and enhancing safety and preparedness.

1.4 Technologies Used

- **Frontend**: HTML5, CSS3, JavaScript
- **Backend**: **Java Servlet** - Handles user requests and controls the flow of the application.
- **Database**: MySQL
- **JavaServer Pages (JSP)**: Creates dynamic web pages for user interaction
- **Tools**: NetBin

2. PROBLEM STATEMENT

2.1 Lack of Centralized System

There is no unified platform to manage shelter information and supplies, leading to fragmented and inconsistent data across agencies.

2.2 Manual Tracking of Shelter Occupancy

Shelters rely on paper-based or spreadsheet systems, which are slow and error-prone, especially during high-pressure situations.

2.3 Difficulty in Tracking Supply Inventory

The absence of a digital inventory system leads to confusion about the availability and location of essential supplies like food, water, and medicine.

2.4 Overcrowding in Certain Shelters

Without real-time occupancy updates, some shelters become overcrowded while others remain empty, putting evacuees at risk.

3. OBJECTIVES

3.1 Objectives

- Develop a centralized platform for booking emergency shelters
- Enable real-time supply and inventory management
- Provide accessibility to shelter information for the public
- Ensure accurate and efficient reporting and updates
- Improve decision-making for emergency response teams

3.2 Features

- Shelter reservation interface
- Supply request and tracking system
- Notification and alert system
- Shelter capacity monitoring

3.3 Target Audience

- Government emergency response units
- Non-Governmental Organizations (NGOs)
- Volunteers and first responders
- Shelter administrators

3.4 Expected Outcomes

- Faster and more organized disaster response
- Reduced overcrowding in shelters
- Better inventory and resource management
- Enhanced public access to emergency services

3.5 Future Improvements

- Mobile app version for Android and iOS
- Integration with SMS notification system
- Multi-language support
- AI-based prediction of shelter demand
- Drone-based supply delivery tracking

4. DESIGN / STORYBOARD / USER INTERFACE

4.1 Sign Up / Login Page: Secure access for users and admins

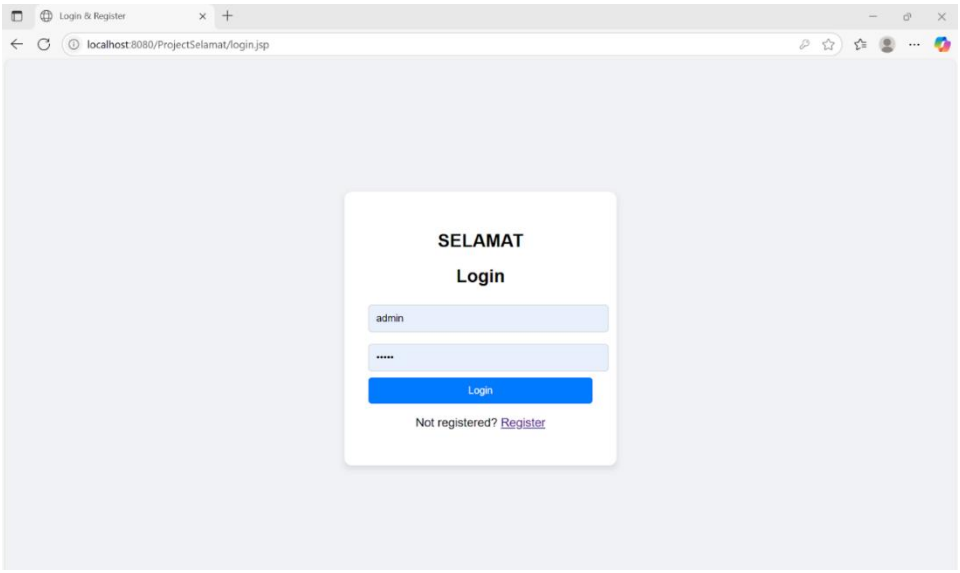

Figure 4.1: Login page

4.2 Registration Page

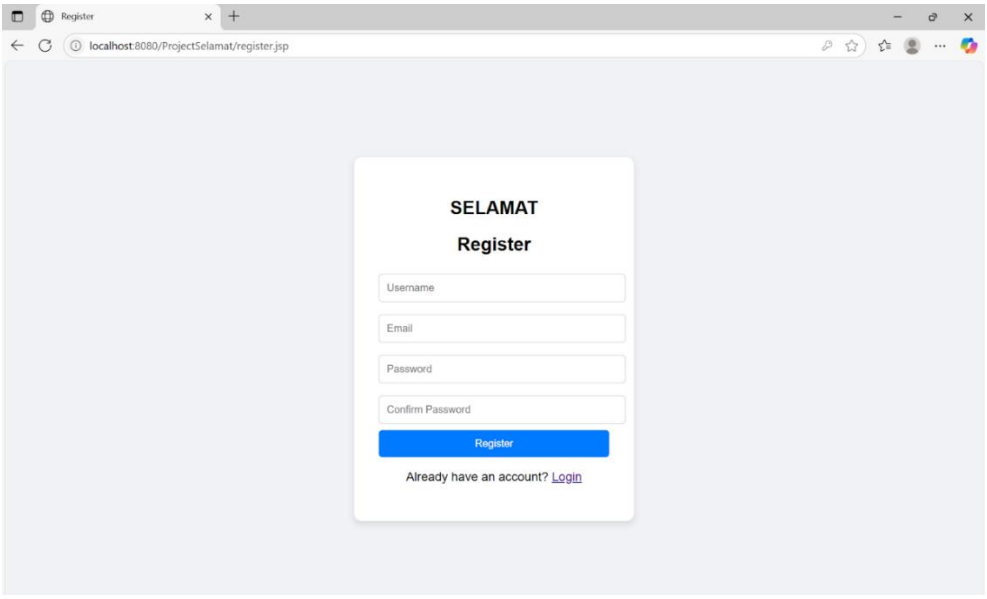

Figure 4.2: Register page

4.3 Dashboard

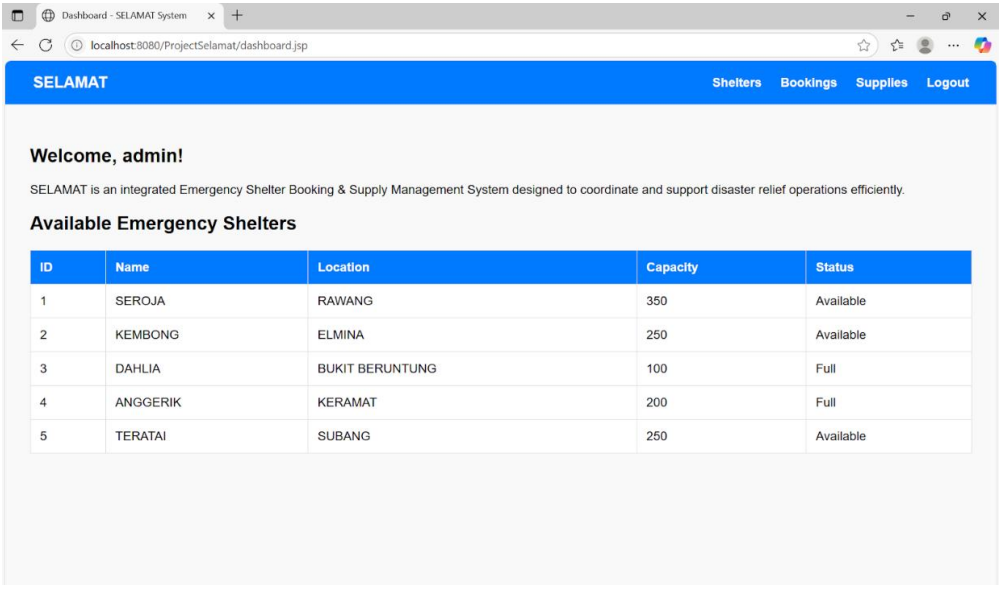

Figure 4.3: Admin Dashboard

4.4 Booking

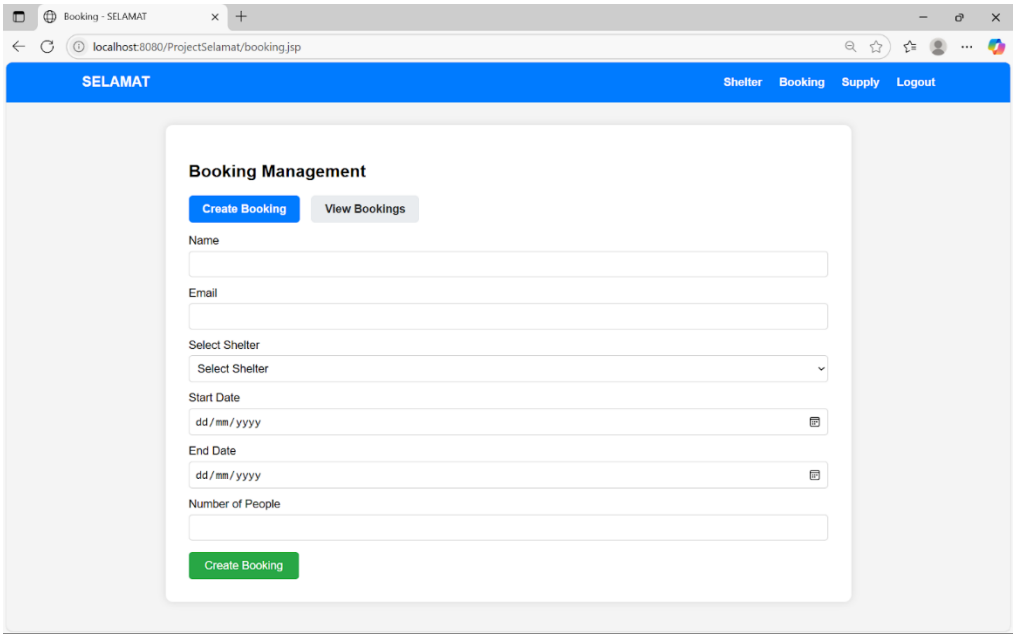

Figure 4.4: Booking page

4.5 View Booking

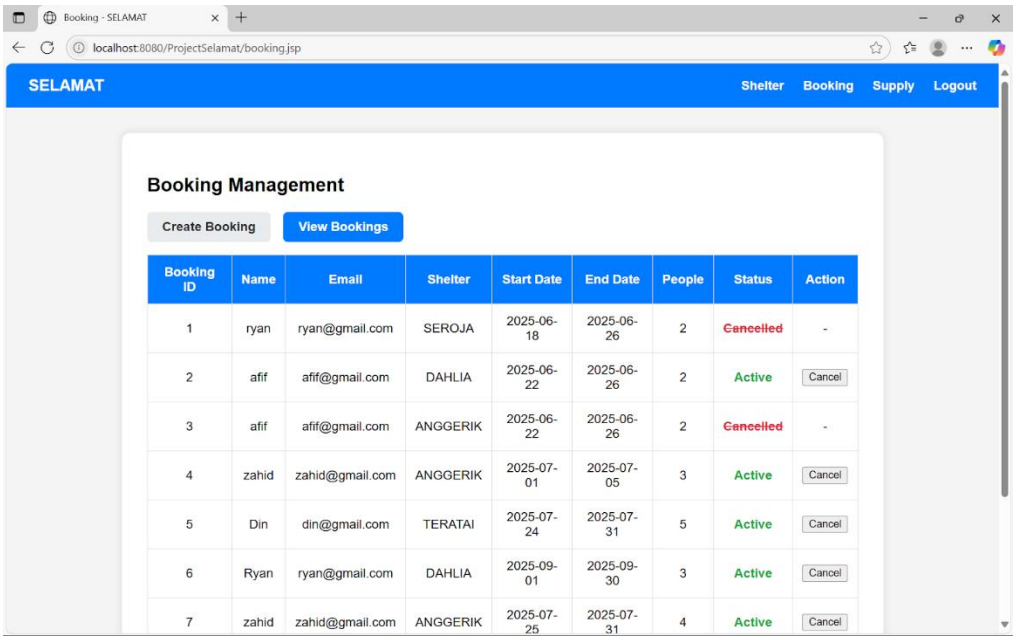

Figure 4.5: View booking page

4.6 Dashboard Supply Inventory

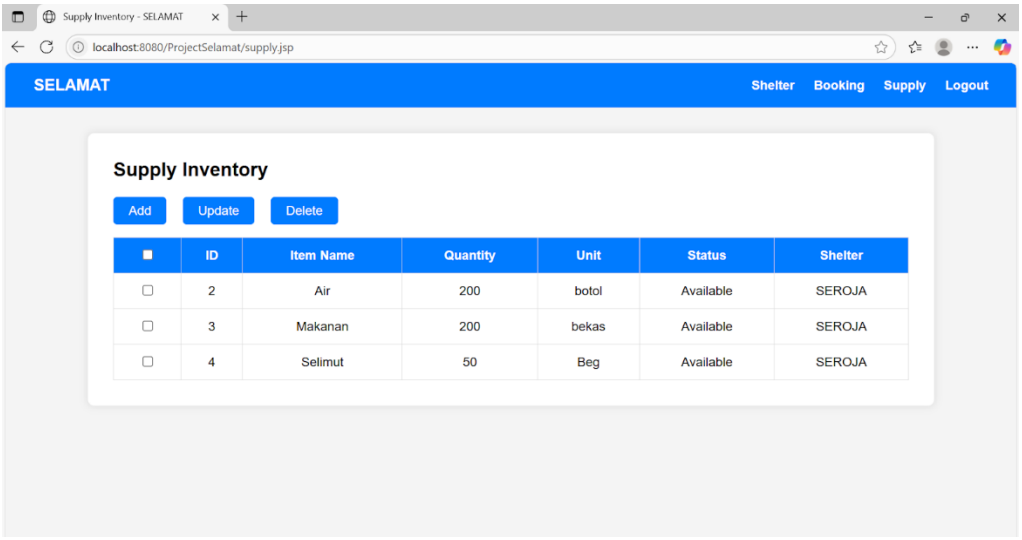

Figure 4.6: Dashboard Supply Inventory

5. DATABASE DESIGN

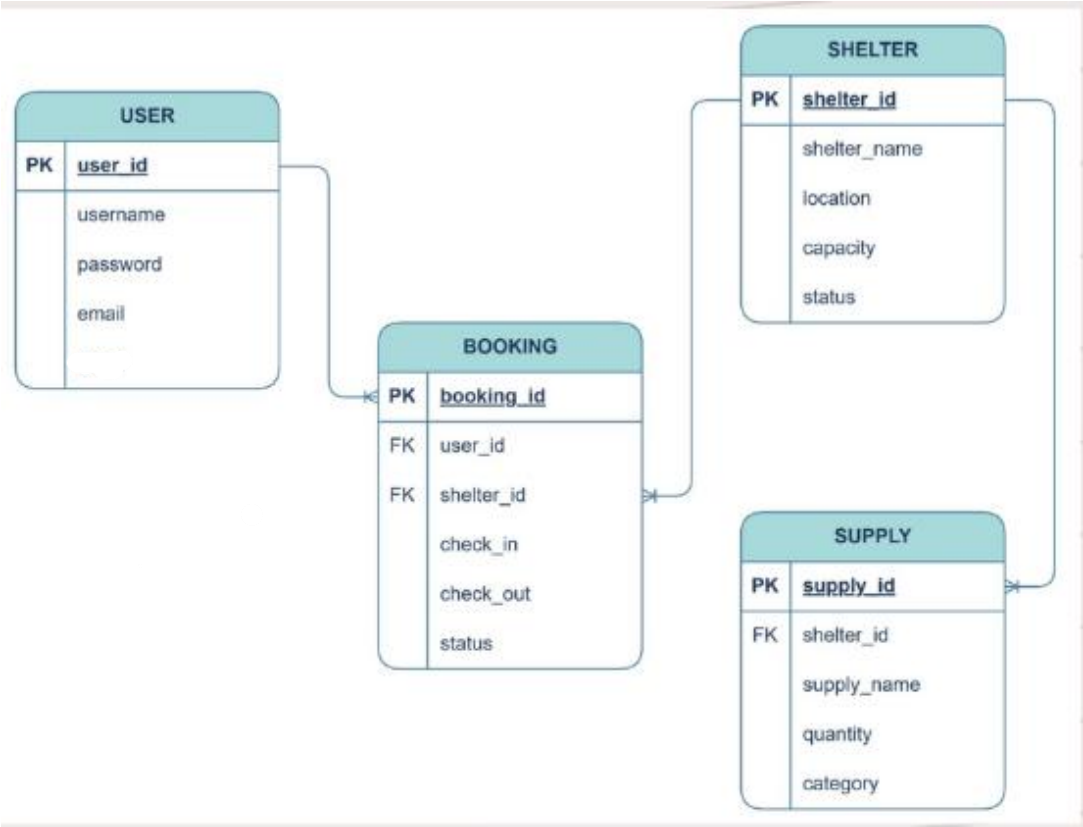

Figure 5: Entity Relationship Diagram (ERD)

The database design for the Emergency Shelter Booking & Supply Management System (SELAMAT) has been structured to efficiently handle the core functionalities of user management, shelter reservations, and supply

tracking. This design includes four main entities: USER, SHELTER, BOOKING, and SUPPLY, each playing a critical role in supporting the system's operations during emergency scenarios.

The relationships among these tables are based on one-to-many associations. A single user can make multiple bookings, and a single shelter can accommodate many users and hold various types of supplies. These relationships ensure that the data model is scalable and can handle multiple transactions simultaneously.

5.1 Essential ERD Components of SELAMAT.

1. USER
   - Attributes
     - user_id (PK)
     - username
     - password
     - email

   - Relationship
     - A USER can make multiple BOOKING (1-to-many).

2. SHELTER
   - Attributes
     - shelter_id (PK)
     - shelter_name
     - location
     - capacity
     - status

3. BOOKING
   - Attributes
     - booking_id (PK)
     - check_in
     - check_out
     - status
     - user_id (FK)
     - shelter_id (FK)
     -
4. SUPPLY
   - Attributes
     - supply_id (PK)

- supply_name
- quantity
- category
- shelter_id (FK)

- Relationship
  - A SHELTER can have multiple BOOKINGs (1-to-many).
  - A SHELTER can store multiple SUPPLY items (1-to-many).

6. FLOW OF APPLICATION

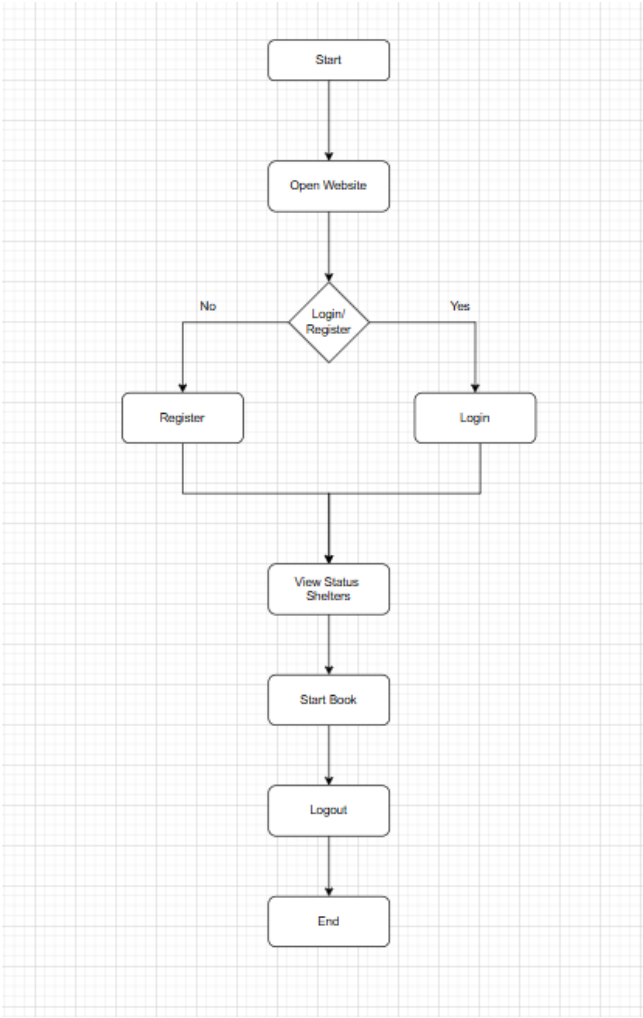

Figure 6.0: Flow chart of system

The process begins with the user initiating the system by selecting Start, which leads them to open the SELAMAT website. Once the site is accessed, the user is directed to either login or register, depending on

whether they already have an account. This decision is handled through a conditional check (a decision diamond in the flowchart).

If the user does not have an account, they are prompted to register by providing basic information such as their name, email, and password. If the user already has an account, they proceed to the login step, where they enter their credentials to gain access to the system.

After successful authentication (login or registration), the user can view the status of available shelters. This section displays critical data, such as shelter name, location, capacity, and availability status. This helps the user make informed decisions based on shelter proximity and space availability.

Once the user identifies a suitable shelter, they proceed to start the booking process. During this step, the user selects the shelter, specifies their check-in and check-out dates, and submits the request to reserve a spot.

After the booking is successfully made, the user has the option to log out of the system to end their session securely. Finally, the flow reaches its conclusion with the End step, indicating that the process has been completed.

7. USER MANUAL

1. User Registration / Login

a. New users must sign up to create an account before accessing the website.
b. Existing users can login using their credentials.

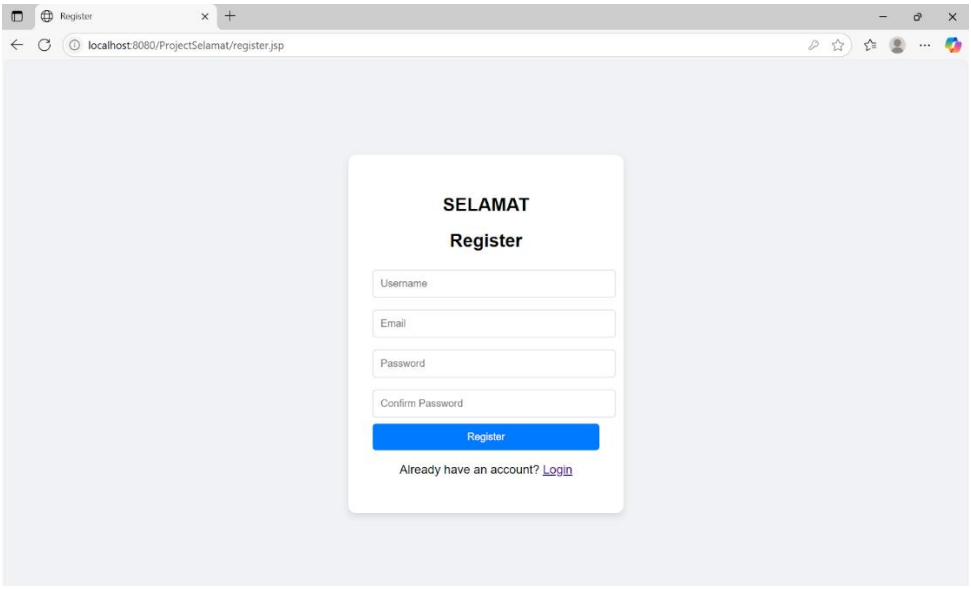

Figure 7.0: Register Page

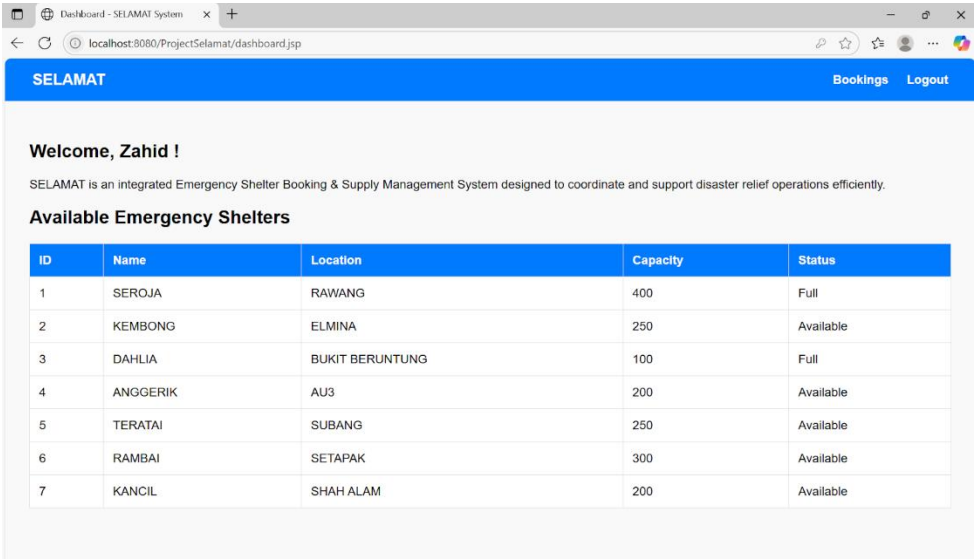

Figure 7.1: User Dashboard

2. Booking the Shelters

a. User can book and view booking status Shelters

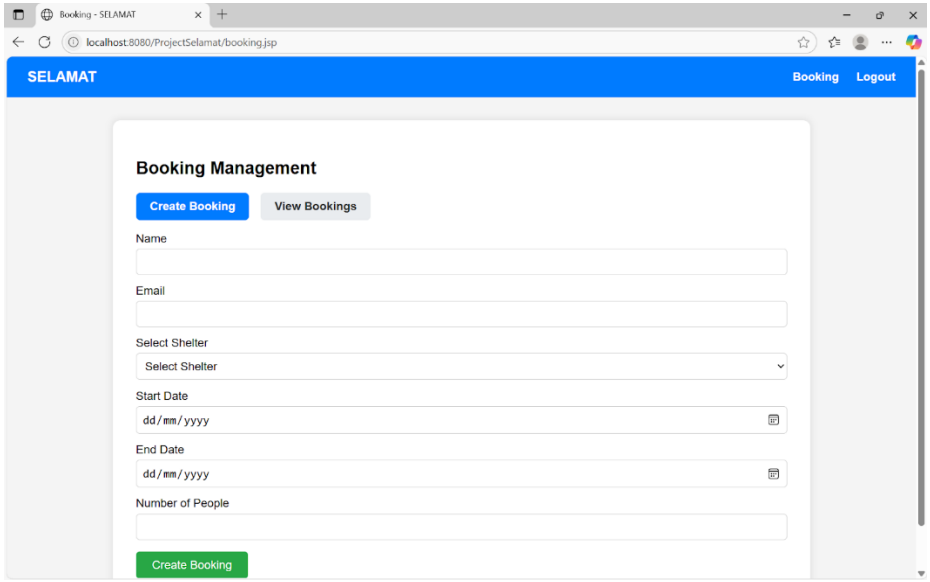

Figure 7.2: Create Booking

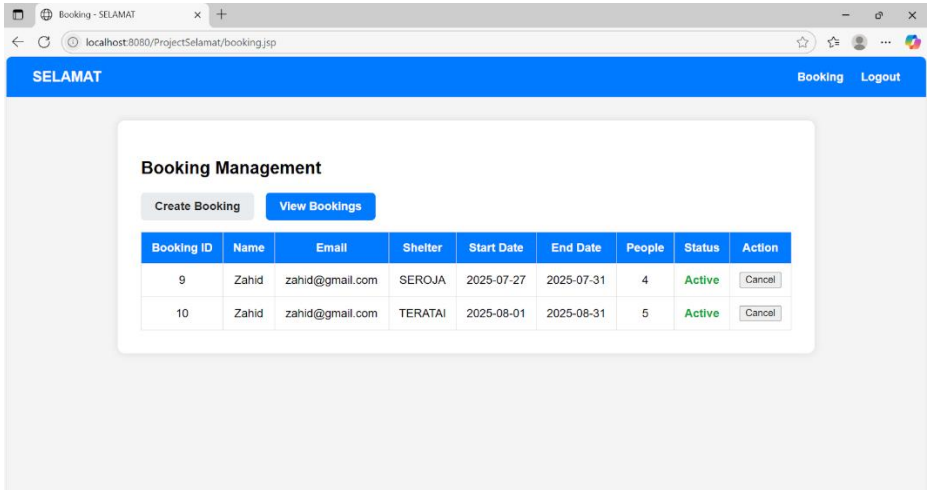

Figure 7.3: View Bookings Status

3. Admin Dashboard

a. The Admin Dashboard as an administrator can manage users and platform operation. The features as per below:

- Manage Users – add, edit or remove users from the system
- View Reports – monitoring and generate the report analysis
- Setting – configure system preferences and administrative settings.

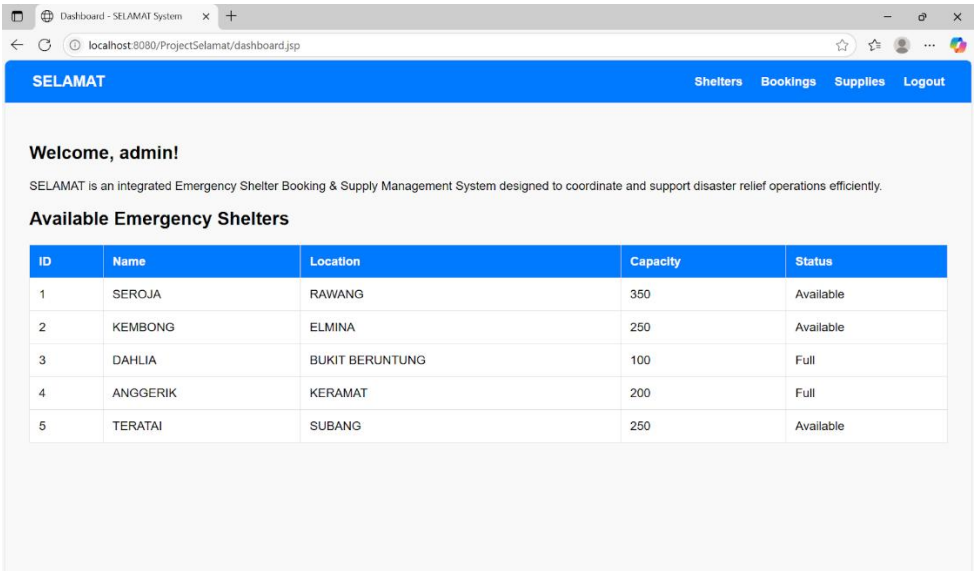

Figure 7.4: Admin Dashboard

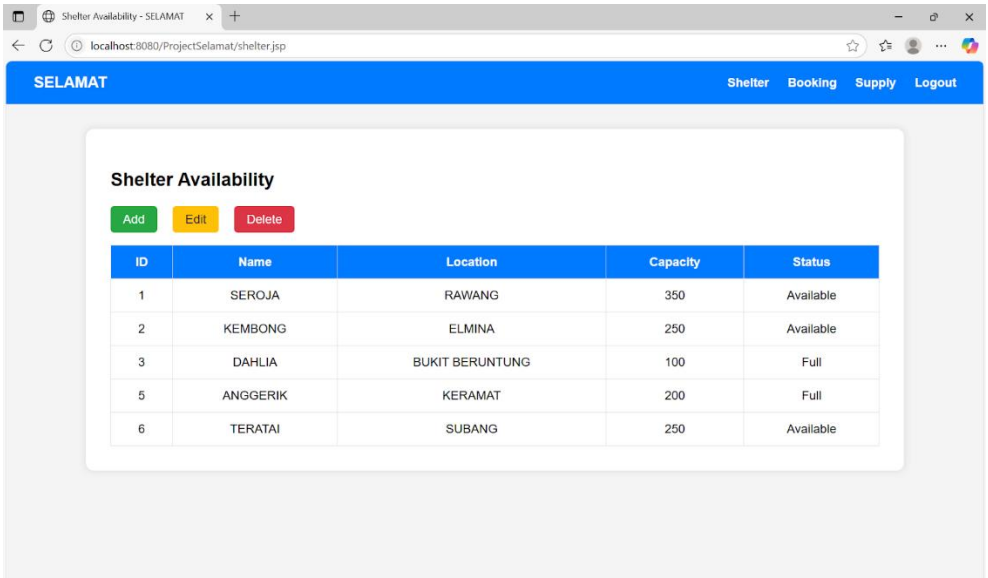

Figure 7.5: Shelters Dashboard

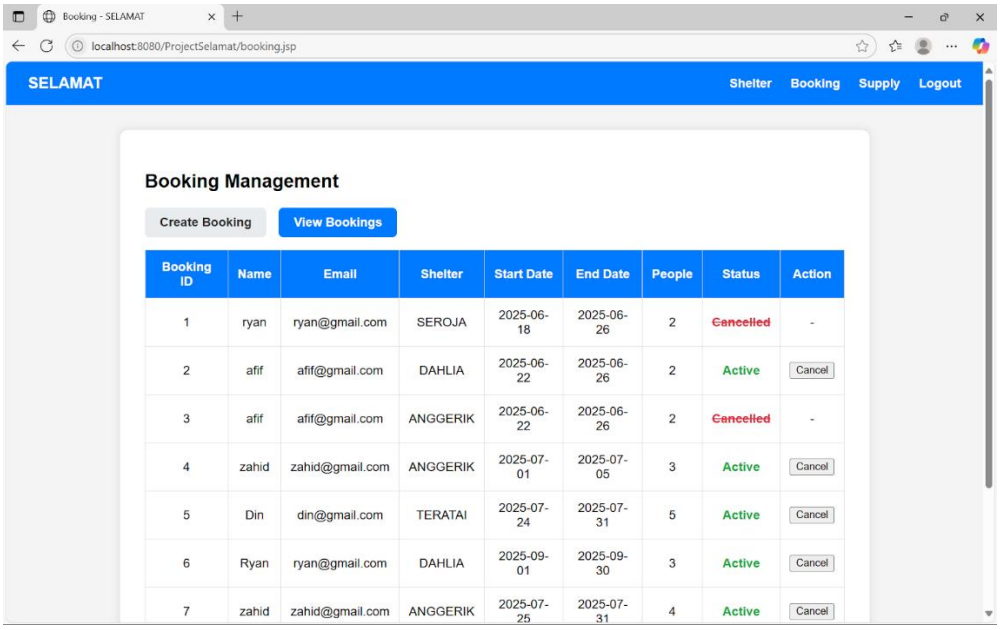

Figure 7.6: Booking Dashboard

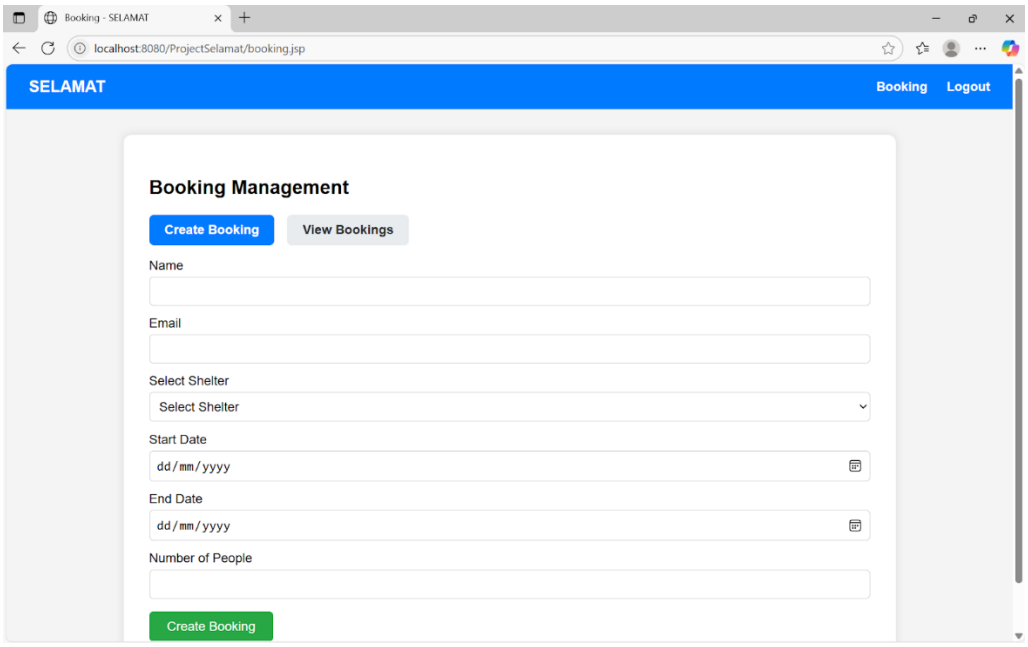

Figure 7.7: Supply Inventory

8. CONCLUSION

In conclusion, the **SELAMAT** Emergency Shelter Booking & Supply Management System bridges the gap between chaotic manual disaster response processes and a streamlined, tech-enabled solution. The system ensures dynamic functionality and efficient system by using MVC framework such as Servlet, JSP and JavaBean. By offering real-time updates, centralized information, and efficient supply tracking, SELAMAT enhances community resilience, accelerates emergency response, and ensures safer, better-managed evacuation efforts. This project lays the foundation for future integrations and continuous disaster preparedness improvement.

APPENDIX

Github link: https://github.com/mrygoround/selamat-system