UNIVERSITI TEKNOLOGI MARA

CS240 BACHELOR OF INFORMATION TECHNOLOGY (HONS.)

CSC584 ENTERPRISE PROGRAMMING

GROUP: NBCS2404B

GROUP PROJECT

PROJECT TITLE: AIDCONNECT – E-COMMERCE DISASTER RELIEF PRODUCT DISTRIBUTION & COORDINATION SYSTEM

NAME	STUDENT ID
MUHAMMAD KHAIRUL IKHWAN BIN MAZLAN	**2023431428**
AMIRUL IRFAN BIN AL HASHIMI	**2023205384**
MUHAMMAD AFIQ RASYDAN BIN MOHD KHAIRI	**2023221096**

PREPARED FOR

MR. MUHAMAD RIDHWAN BIN MOHAMAD RAZALI

Table of Contents

1.0   PROJECT OVERVIEW

In recent years, the frequency and intensity of natural disasters such as floods, earthquakes, landslides, and fires have significantly increased. During such crises, timely distribution of relief supplies is crucial to minimizing suffering and loss. AidConnect is a web-based system designed to act as a centralized platform to coordinate and manage the distribution of disaster relief supplies. The platform enables the public to donate items, allows organizations to track donations, and provides a communication bridge between donors and relief agencies. By digitizing the donation process, AidConnect aims to eliminate common issues in traditional manual coordination, such as duplicated items, slow delivery, and lack of transparency.

1.1 Project Description

AidConnect is a Java-based e-commerce platform that facilitates the donation, sale, and dispatch of essential supplies during disaster situations. The system enables user registration, product listing, donation tracking, and administrative control. It features a user-friendly interface that allows both individual donors and organization representatives to contribute to relief efforts by listing and monitoring the status of donations. At the same time, the admin side of the system can approve, update, or delete donations and manage supply dispatch operations. All components of the system are built using Java EE technologies and follow the MVC (Model-View-Controller) design pattern for maintainability and scalability.

1.2 Key Features

- Login and Session Management: Allows users to securely log in and log out, maintaining their sessions throughout their use of the application.
- User Registration with Validation: Enables new users to sign up with proper validation to ensure accurate and complete information is entered.
- CRUD Operations: Supports creating, reading, updating, and deleting donation and dispatch records through an easy-to-use interface.
- Dynamic Dashboard: Provides an overview of donation status, product distribution, and user activities with simple visual summaries.

1.3 Purpose

The purpose of AidConnect is to improve the efficiency and transparency of disaster relief operations by automating the coordination of donations and product dispatch. It reduces manual paperwork and communication delays, enabling quicker response times. Ultimately, AidConnect supports communities in need by providing a reliable platform for managing critical supplies during emergencies.

1.4 Technologies Used

- Java Servlet: Handles user requests and controls the flow of the application.
- JavaServer Pages (JSP): Creates dynamic web pages for user interaction.
- JavaBeans: Represents the data and business logic within the application.
- JDBC (Java Database Connectivity): Connects the application to the database for storing and retrieving data.
- MySQL Database: Stores all user information, donation records, and dispatch details.
- Apache Tomcat: Runs the Java web application on the server.
- HTML/CSS: Builds and styles the web pages for a clear and user-friendly interface.

2.0 PROBLEM STATEMENT

- Disaster relief efforts often suffer from inefficient coordination of donations and product distribution.

- Many organizations rely on manual record-keeping and communication, which causes delays and errors.

- Lack of a centralized system results in poor tracking of donations and inventory management.

- Critical supplies may not reach affected areas on time, reducing the effectiveness of relief efforts.

- Transparency and accountability are limited, leading to possible mismanagement of resources.

- There is a need for an easy-to-use platform that improves communication and streamlines donation and dispatch processes during disasters.

3.0 OBJECTIVES

The main goal of AidConnect is to build a reliable and user-friendly web application that supports disaster relief efforts by simplifying donation management and product distribution. The system aims to improve communication, transparency, and efficiency during emergency situations.

3.1 Objectives

- Enable secure user registration and login with session management.

- Allow users to perform CRUD operations on donation and dispatch records.

- Provide a dashboard for real-time monitoring of donations and relief product distribution.

- Enhance coordination between donors, volunteers, and administrators.

- Ensure data accuracy and security through proper database management.

- Follow MVC architecture for scalability and maintainability.

3.2 Features

- User authentication (login/logout and registration).

- Donation and dispatch record management (add, edit, delete, view).

- Interactive dashboard displaying key information and statistics.

- Responsive and intuitive user interface.

3.3 Target Audience

- Disaster relief organizations and administrators.

- Individual and corporate donors.

- Volunteers involved in product distribution.

- Community members seeking to contribute to disaster aid.

3.4 Expected Outcomes
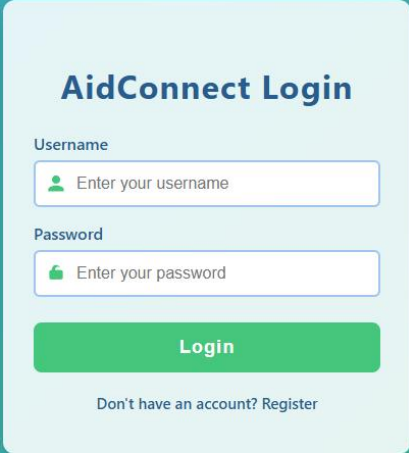
- Streamlined donation and distribution processes during disasters.

- Increased transparency and accountability in managing relief supplies.

- Faster response times due to improved coordination.

- Better record-keeping and real-time tracking of resources.

3.5 Future Improvements

- Integration with mobile applications for easier access.

- Automated notifications for donation status and dispatch updates.

- Advanced reporting and analytics features.

- Multi-language support to cater to diverse users.

4.0 DESIGN / STORYBOARD / USER INTERFACE

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

2. Registration Page

3. Donation Page:Submit and track donations.

4. **Dispatch Page**: Manage supply distribution

5. **Dashboard Page**: Overview of donations, dispatches, and user activity.

6. View Donations Page
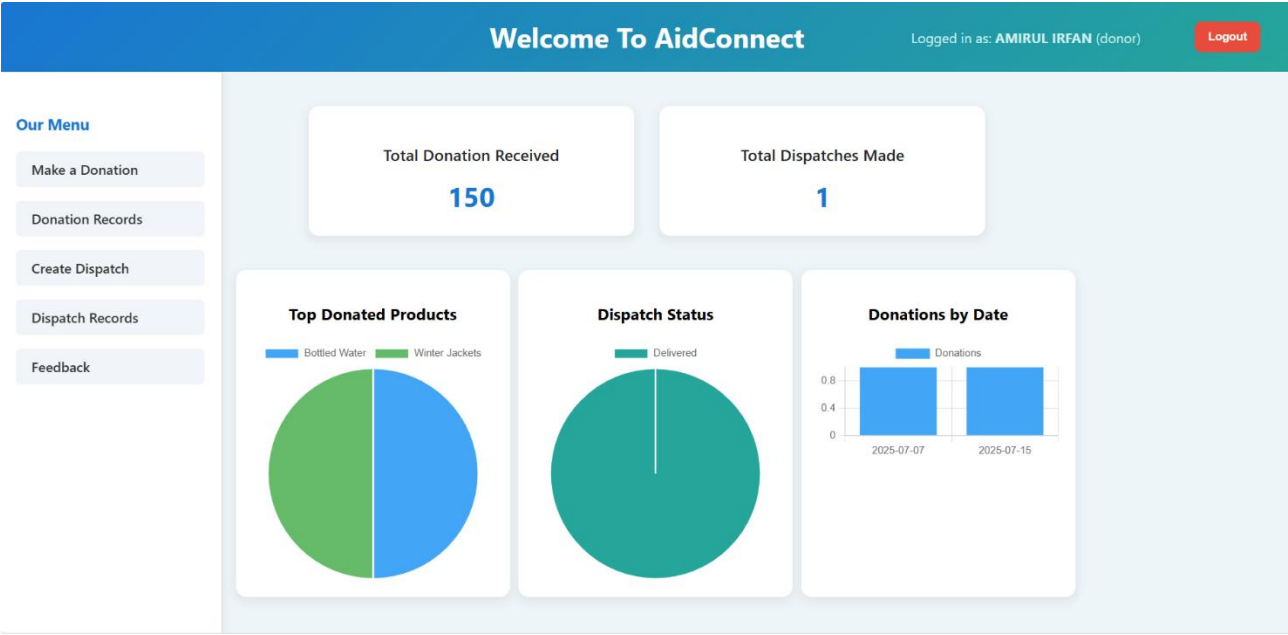
7. View Dispatch Page

Dispatch Records

Dispatch ID	Destination	Item	Quantity	Dispatch Date	Status	Actions
DP001	Kuala Krai	Blankets	50	2025-05-16	Dispatched	Edit Delete

8. Feedback Form

Back to Dashboard

Feedback Form

Hello **AMIRUL IRFAN**, we value your feedback!

Your Feedback

Submit Feedback

5.0 DATABASE DESIGN

The AidConnect system consists of six main entities: **User**, **Donation**, **Product**, **Dispatch**, **Category**, and **Feedback**. Each User can make many Donations, and each Donation is linked to a specific Product. The Product belongs to a Category, such as food or medicine. When a donation is ready to be delivered, it is recorded in the Dispatch table, which connects back to the related Donation. Additionally, the system includes a Feedback module, allowing users to submit feedback or comments regarding their donation or delivery experience. This helps gather valuable insights to improve the effectiveness and transparency of disaster relief efforts. Overall, this structure helps manage donations, organize products, collect user feedback, and track where items are sent during a disaster.
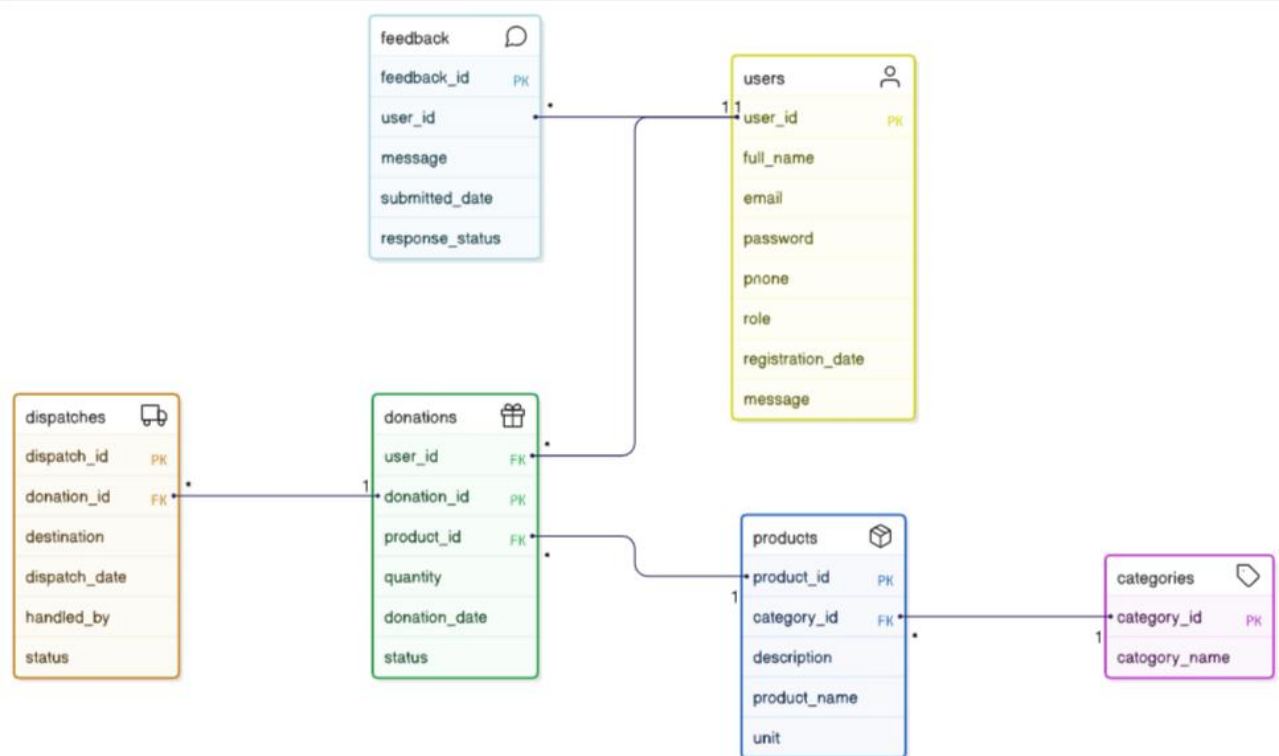
5.1 Essential ERD Components of AidConnect
1. User
- **Attributes:**
  - user_id (Primary Key)
  - full_name
  - email
  - password
  - phone
  - role *(e.g., Donor, Organization, Admin)*
  - registration_date
- **Relationships:**
  - One user can create multiple Donations
  - One user can submit multiple Feedbacks

2. Donation
- **Attributes:**
  - donation_id (Primary Key)
  - user_id (Foreign Key)
  - product_id (Foreign Key)
  - quantity
  - donation_date
- **Relationships:**
  - Each donation belongs to one user
  - Each donation is for one product
  - Each donation may have one dispatch record

3. Product
- **Attributes:**
  - product_id (Primary Key)
  - product_name
  - description
  - unit *(e.g., kg, box, bottle)*
  - category_id (Foreign Key)
- **Relationships:**
  - One product belongs to one category
  - One product can be linked to multiple donations

4. Category
- **Attributes:**
  - category_id (Primary Key)
  - category_name *(e.g., Food, Medicine, Water)*
- **Relationships:**
  - One category can contain multiple products

5. Dispatch
- **Attributes:**
  - dispatch_id (Primary Key)
  - donation_id (Foreign Key)
  - destination
  - dispatch_date
  - handled_by
  - status
- **Relationships:**
  - One dispatch is associated with one donation only

6. Feedback
- **Attributes:**
  - feedback_id (Primary Key)
  - user_id (Foreign Key)
  - message
  - feedback_date
- **Relationships:**
  - One user can submit multiple feedbacks

6.0 FLOW OF APPLICATION

AidConnect is a Java-based e-commerce platform designed to streamline disaster relief efforts by centralizing the donation and distribution of essential supplies. The system begins with user authentication, directing donors, organizations, and administrators to role-specific dashboards where they can create, track, or manage donations and dispatches. Through features like real-time inventory tracking, CRUD operations, and automated coordination, AidConnect enhances transparency and efficiency in relief operations, ensuring timely aid delivery during emergencies. Built with Java EE technologies (Servlets, JSP, JDBC) and following MVC architecture, the platform bridges gaps between donors and relief agencies, replacing manual processes with a scalable digital solution.
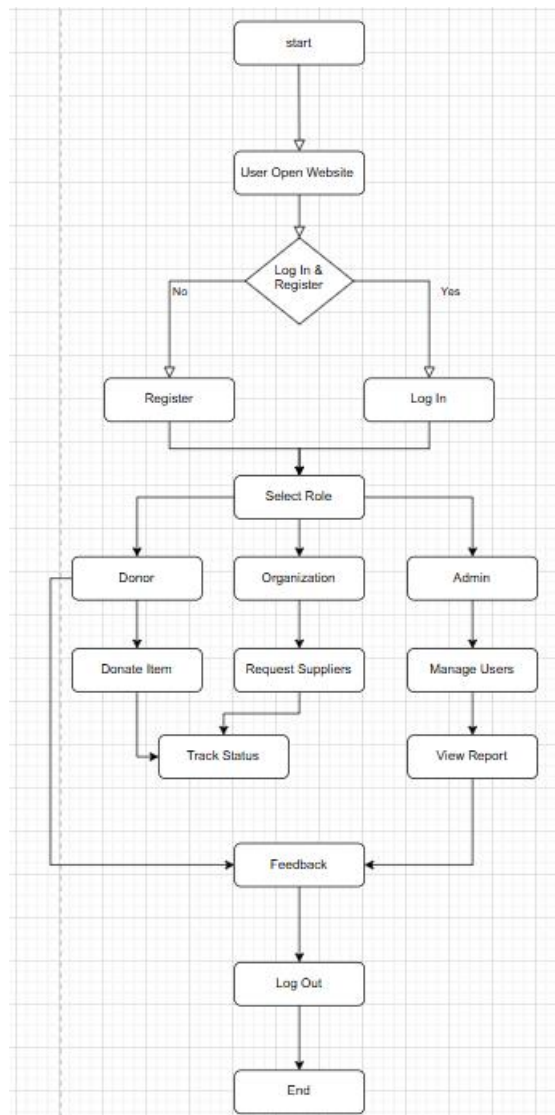
7.0 User Manual

*Step by Step for **Administration***

STEP 1 :

Open **NetBeans** IDE.

STEP 2 :

Make sure the **AidConnect** project file is opened in NetBeans IDE.
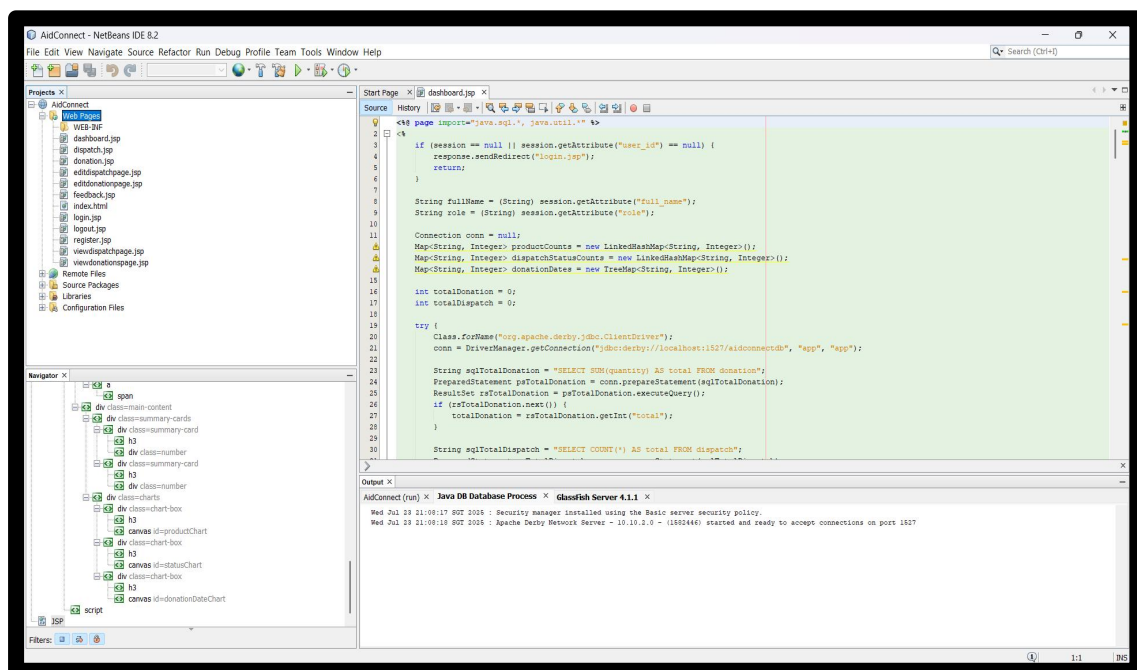
STEP 3 :

Click the **Run Project** button.
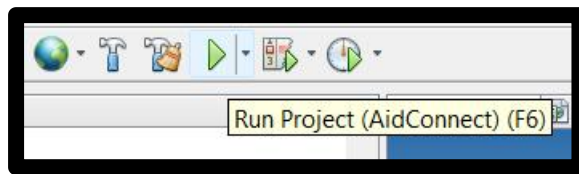
STEP 4 :

Once the project runs successfully, it will open the **AidConnect Login Page**.
If the user already has an account, enter your Email and Password to log in.
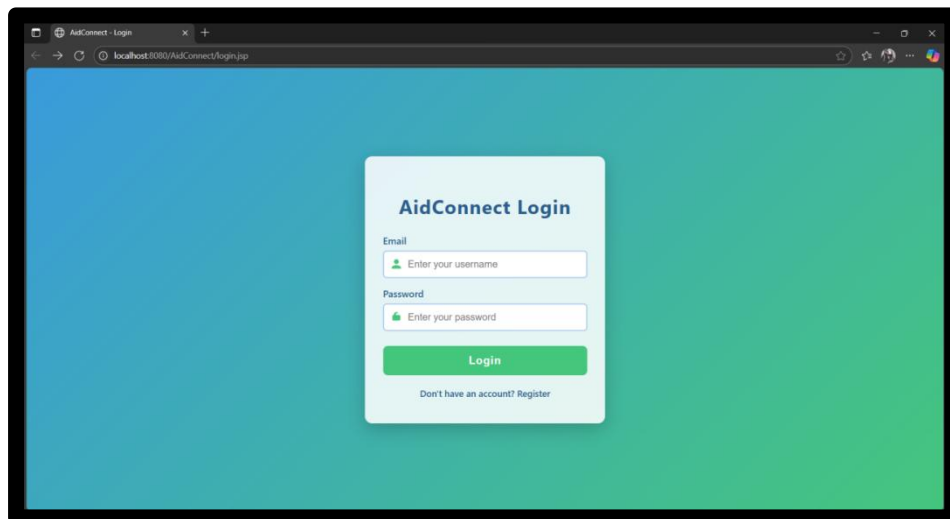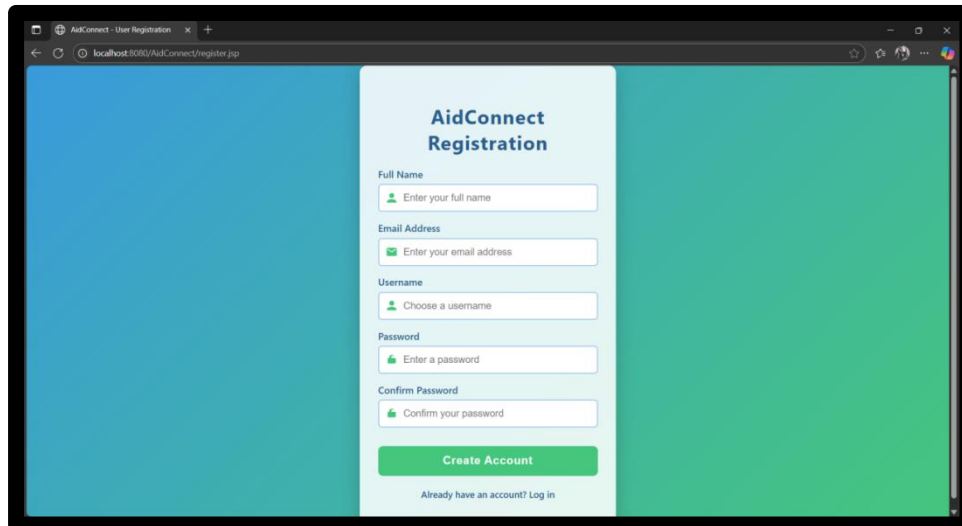
STEP 5 :

If you do not have an account yet, you need to R**egister** for an account first.

STEP 6 :

On the **AidConnect Registration Page**, the user must fill in their **Full Name, Email Address, Username, Password, and Confirm Password** as a verification step.

STEP 7 :

Once all the information has been filled in, click the **"Create Account"** button.

STEP 8 :

The user needs to open **NetBeans IDE** again and click on "**Services**".
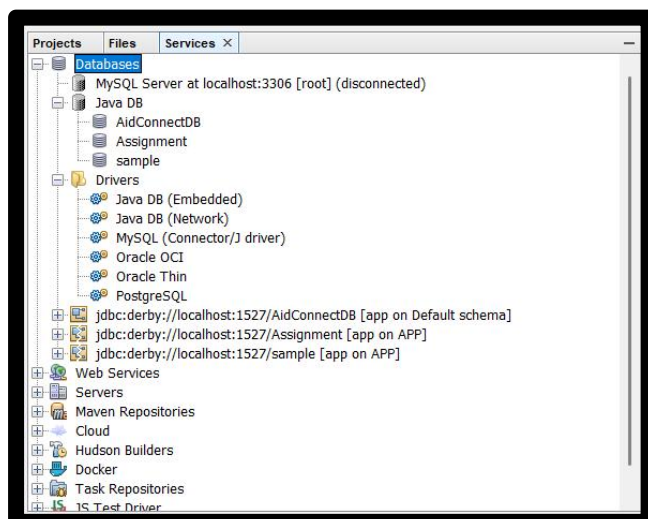
STEP 9 :

In the "**Services**" section, navigate to:
Databases > **Java DB** > **AidConnectDB**
Then, **right-click** on **AidConnectDB** and **select** "**Connect**".
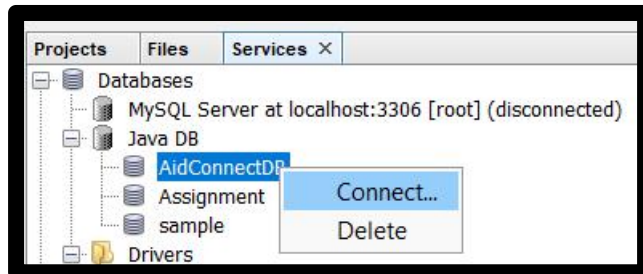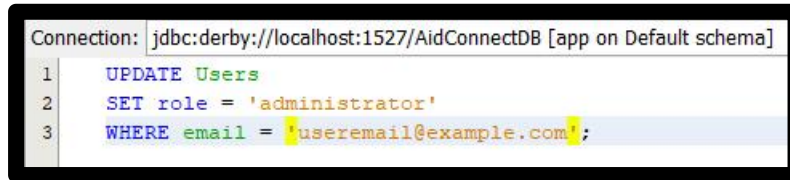
STEP 10 :

Go to the section as shown in the display below, then **right-click** and select
"**Execute Command**".
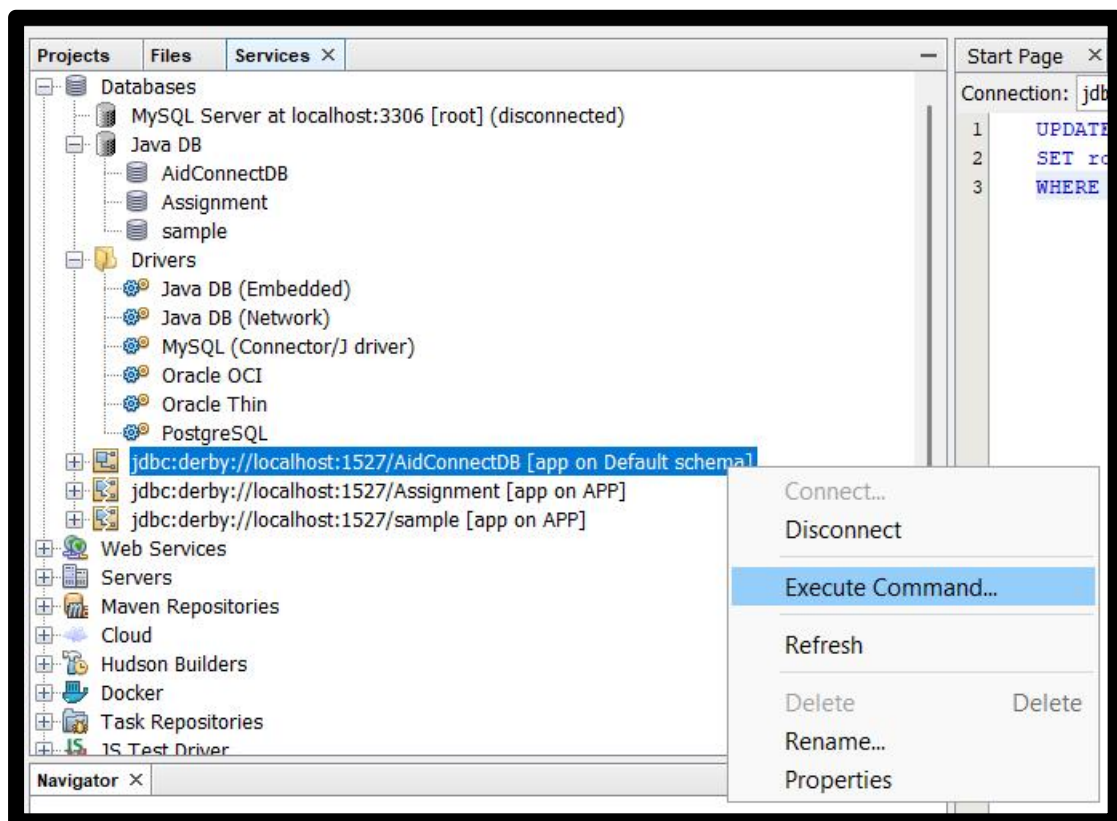
STEP 11 :

The user needs to type the command as shown in the display.
Enter the **same email used during registration** to assign the user as an
Admin.

STEP 13 :

Then, click "**Run SQL**".
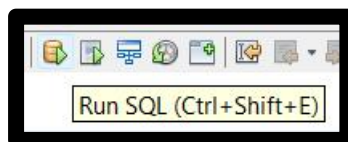
STEP 14 :

Then, click "**Run Project**" .
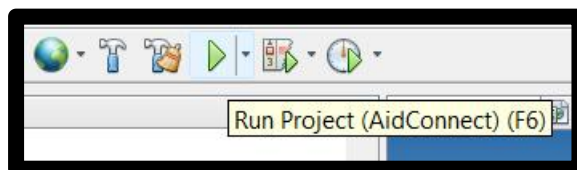
After returning to the **Login Page**, enter the **Email** and **Password** you registered with.

Then, click the "**Login**" button.
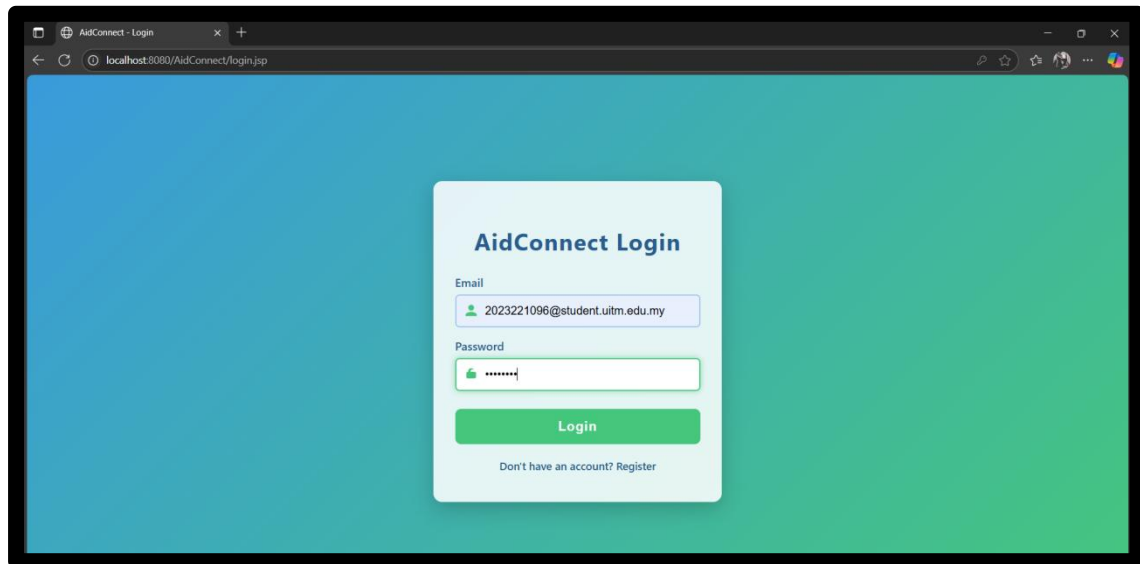
After logging in, the user will be directed to the **Main Dashboard** page. On this page, you can view the following information:

i. **Total Donation Received**
ii. **Total Dispatches Made**
iii.**Top Donated Products**
iv. **Dispatch Status**
v. **Donations by Date**
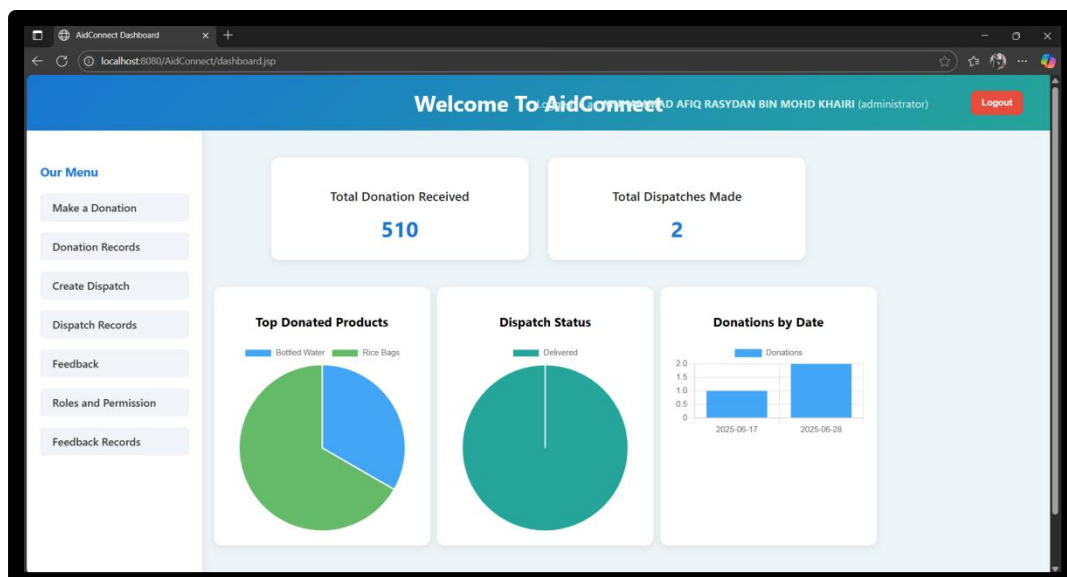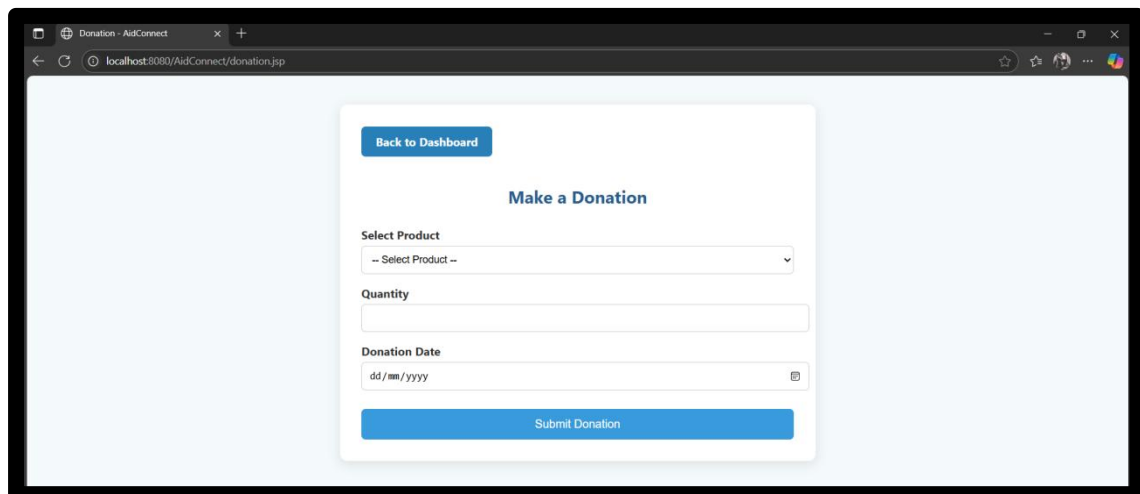
STEP 17 :

To make a donation, the user needs to click the "**Make a Donation**" button on the Main Dashboard.
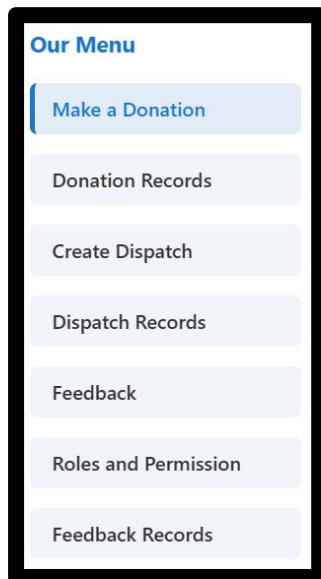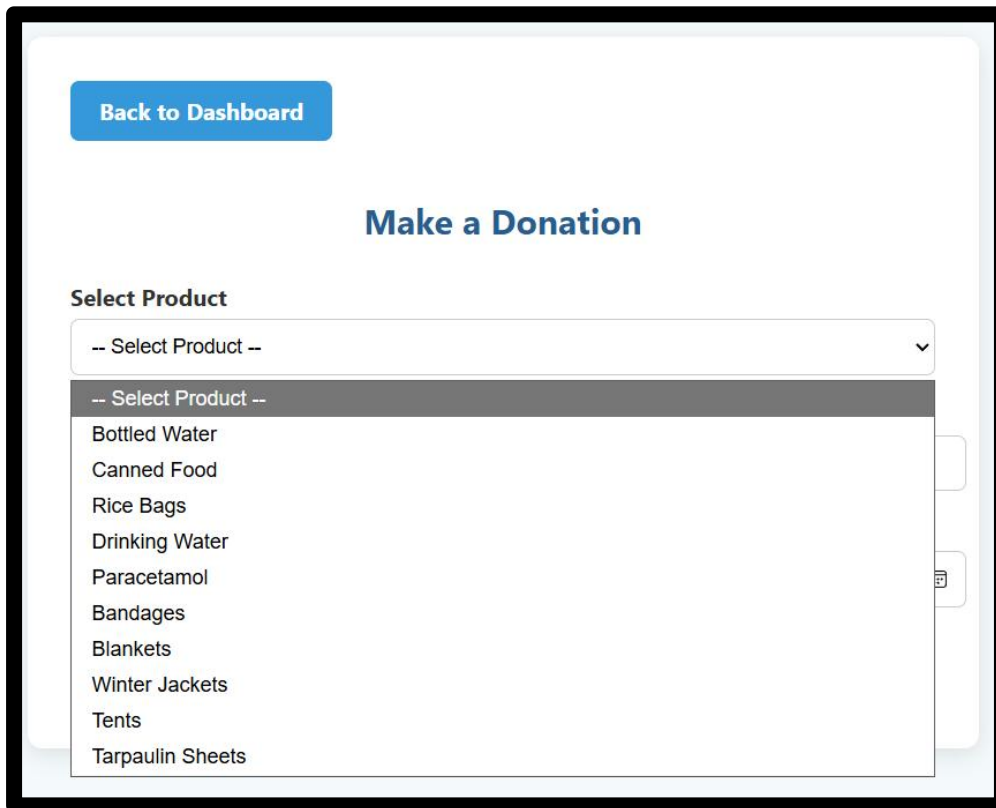
STEP 18 :

After navigating to the "Make a Donation" page, **fill in all the required information**.

Select a product from the available options in the list.

STEP 20 :

Once all the information has been filled in, click the "**Submit Donation**" button.

STEP 21 :

Then, click the "**Back to Dashboard**" button.
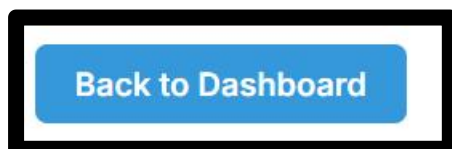
STEP 22 :

Select "**Donation Records**" to verify that your donation details have been successfully recorded.
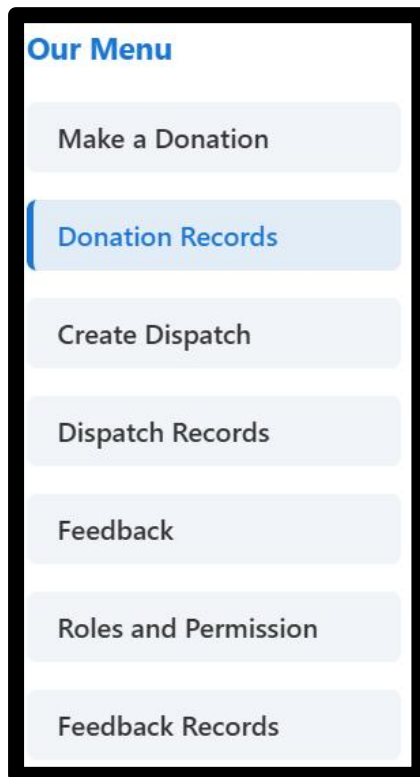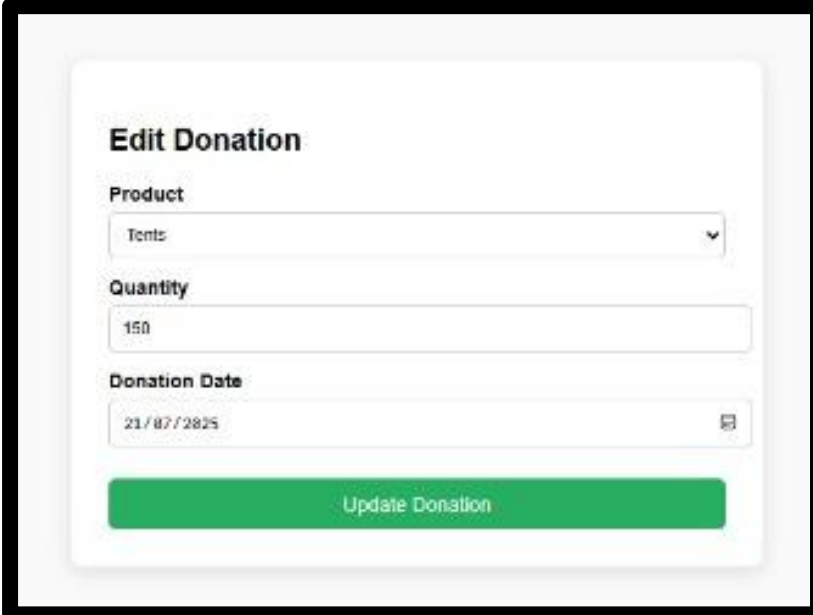
STEP 23 :

The user can **Edit** or **Delete** the submitted information through this page.
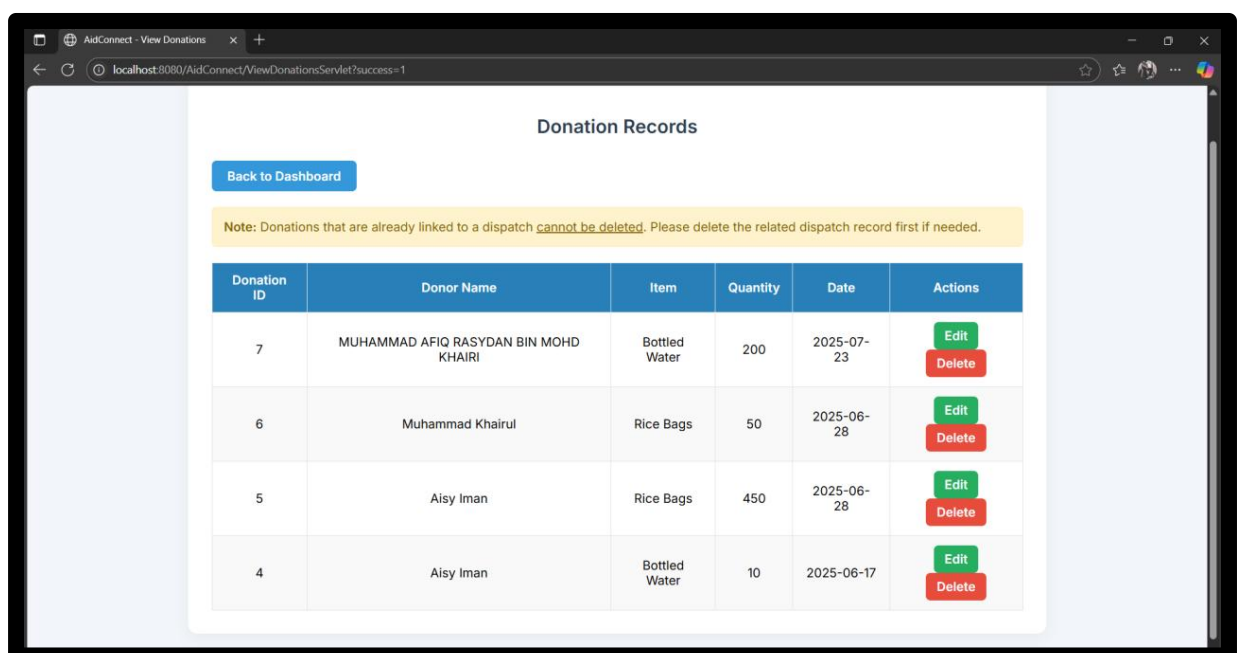
To edit, the user can update the **Product, Quantity,** and **Donation Date** fields. Then , click the **"Update Donation"** button .
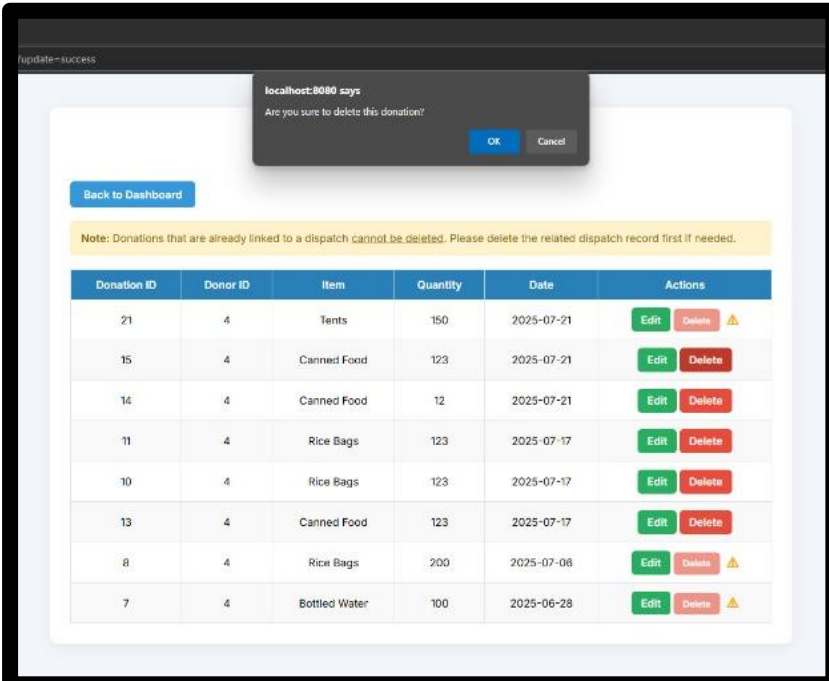
STEP 25 :

To Delete, the user needs to click the "**Delete**" button. A **pop-up** confirmation will appear.

If you wish to proceed, click "**OK**". Otherwise, click "**Cancel**".

26
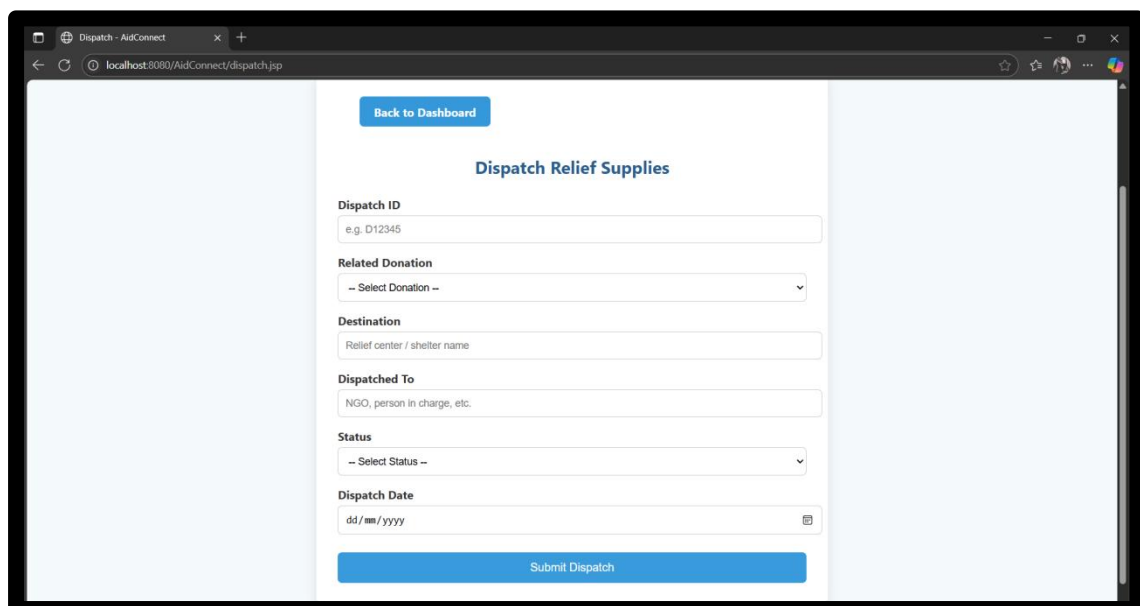
STEP 26 :

To create dispatch information, the user can click the "**Create Dispatch**" button on the Main Dashboard.
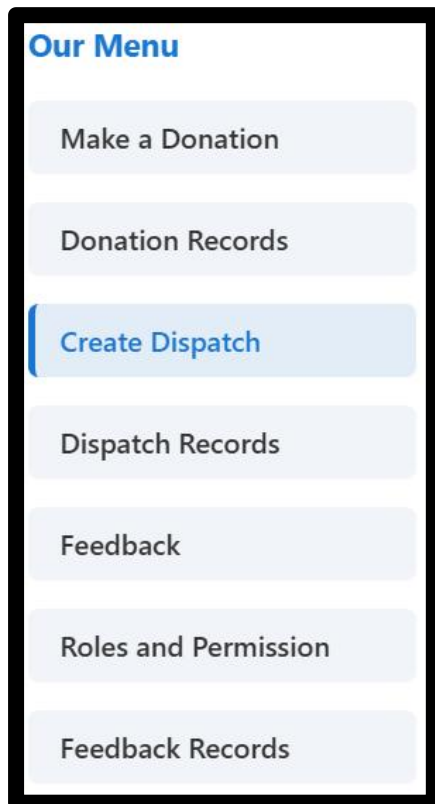
STEP 27 :

Ensure that **all required information is filled** in on the "**Dispatch Relief Supplies**" page.

STEP 28 :

Select the "**Related Donation**" based on the available information.

Dispatch Relief Supplies

Dispatch ID

A2023221096

Related Donation

-- Select Donation --

-- Select Donation --
Donation #4 - Bottled Water by Aisy Iman
Donation #7 - Bottled Water by MUHAMMAD AFIQ RASYDAN BIN MOHD KHAIRI
Donation #5 - Rice Bags by Aisy Iman
Donation #6 - Rice Bags by Muhammad Khairul

STEP 29 :

Select the appropriate "**Status**" for the donated items. The options are provided in the dropdown menu.

Dispatch Relief Supplies

Dispatch ID

A2023221096

Related Donation

Donation #7 - Bottled Water by MUHAMMAD AFIQ RASYDAN BIN MOHD KHAIRI

Destination

RUMAH KITAR SEMULA SHAH ALAM

Dispatched To

NGO

Status

-- Select Status --

-- Select Status --
Preparing
In Transit
Delivered

Submit Dispatch

STEP 30 :

Select the "**Dispatch Date**" using the calendar provided in the dropdown field.

Dispatch Relief Supplies

Dispatch ID

A2023221096

Related Donation

Donation #7 - Bottled Water by MUHAMMAD AFIQ RASYDAN BIN MOHD KHAIRI ⌄

July, 2025 ▾   ↑   ↓

S	M	T	W	T	F	S
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	**23**	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9

Clear   Today

dd / mm / yyyy   🗓

Submit Dispatch

STEP 31 :

Once all the information has been filled in, click the **"Submit Dispatch"** button.

Dispatch Relief Supplies

Dispatch ID

A2023221096

Related Donation

Donation #7 - Bottled Water by MUHAMMAD AFIQ RASYDAN BIN MOHD KHAIRI ⌄

Destination

RUMAH KITAR SEMULA SHAH ALAM

Dispatched To

NGO

Status

In Transit ⌄

Dispatch Date

23 / 07 / 2025   🗓

Submit Dispatch

STEP 32 :

To view the dispatch records, click the "**Dispatch Records**" button.
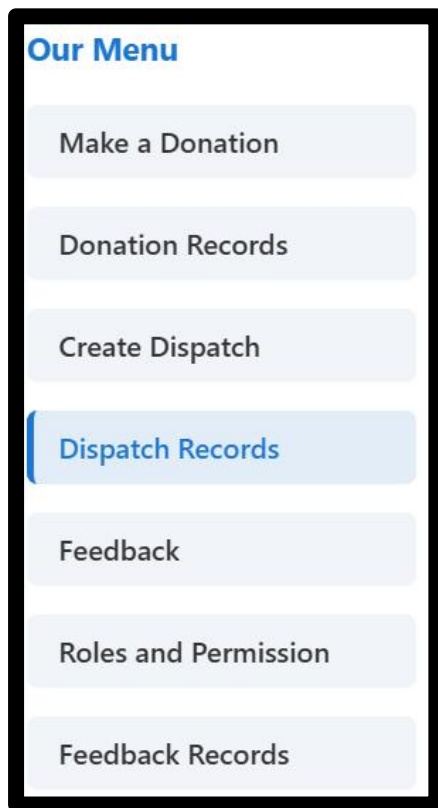
STEP 33 :

On the "**Dispatch Records**" page, the user can **edit** or **delete** existing records.
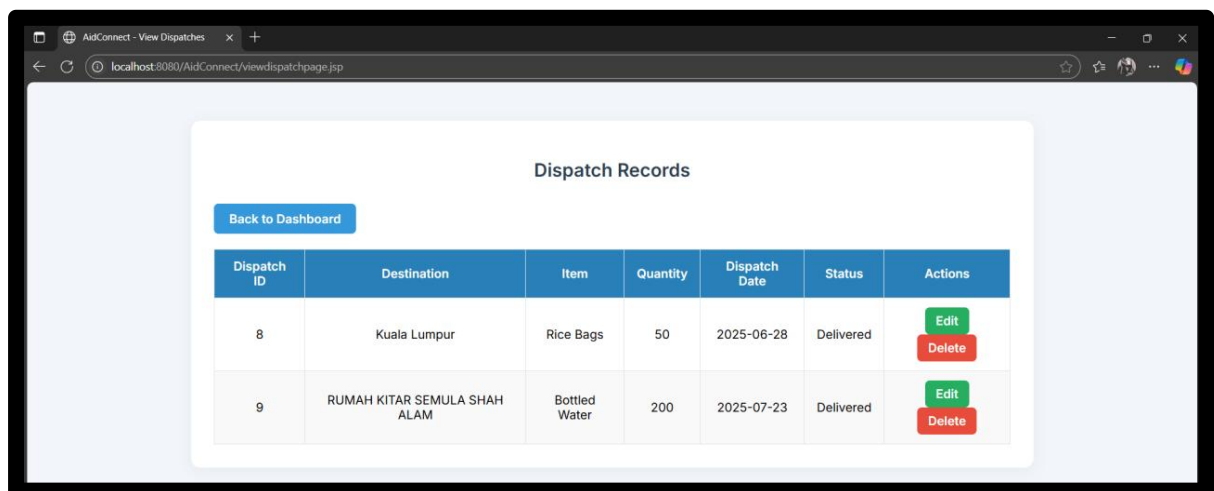
STEP 34 :

To **edit**, the user can **modify** the **Destination, Dispatched To, Status, and Dispatch Date** fields.

Once editing is complete, **click** the "**Update Dispatch**" button.

Example after editing a Dispatch Record .

STEP 35 :

To **delete**, the user needs to click the "**Delete**" button. A confirmation **pop-up** will appear.

If you want to proceed, click "**OK**" . If not, click "**Cancel**".
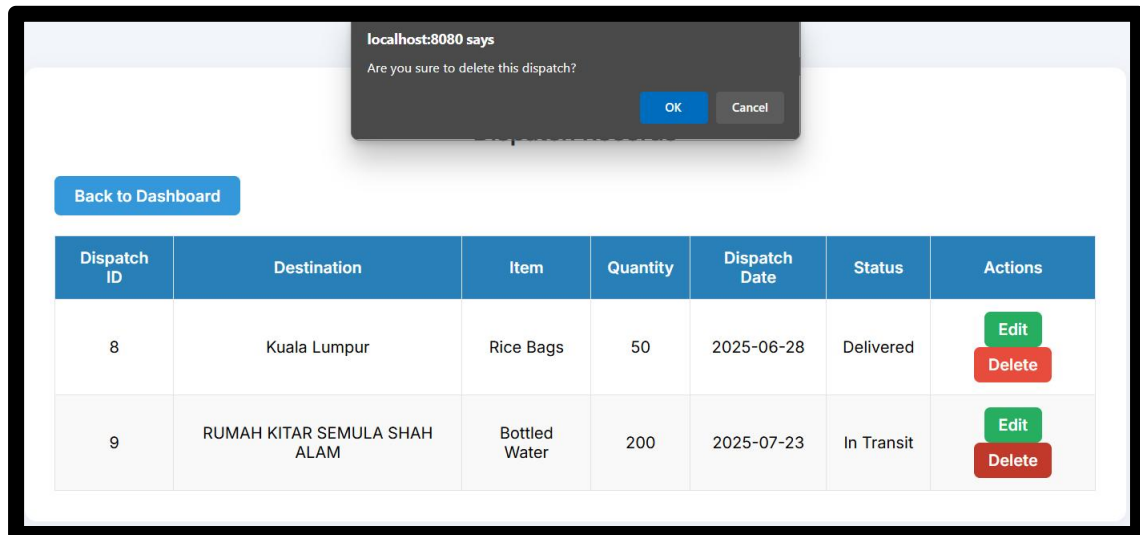
STEP 36 :

Then, the user can click the "**Back to Dashboard**" button.
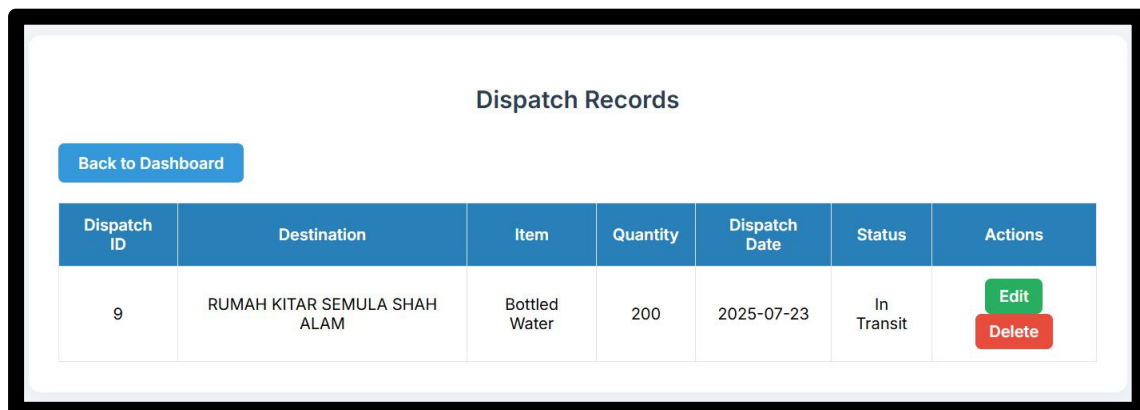
Example after the user deletes a Dispatch Record .
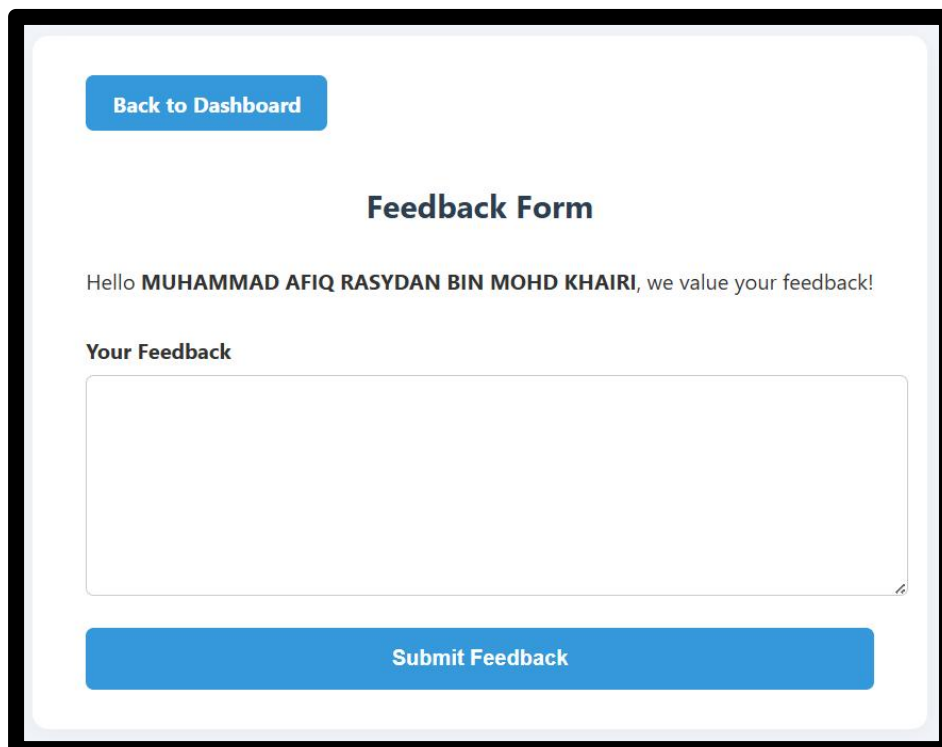
STEP 37 :

To provide **feedback**, the user needs to click the **"Feedback"** button on the Main Dashboard.
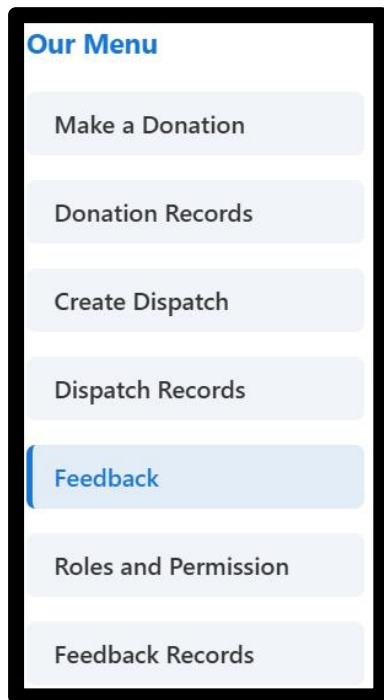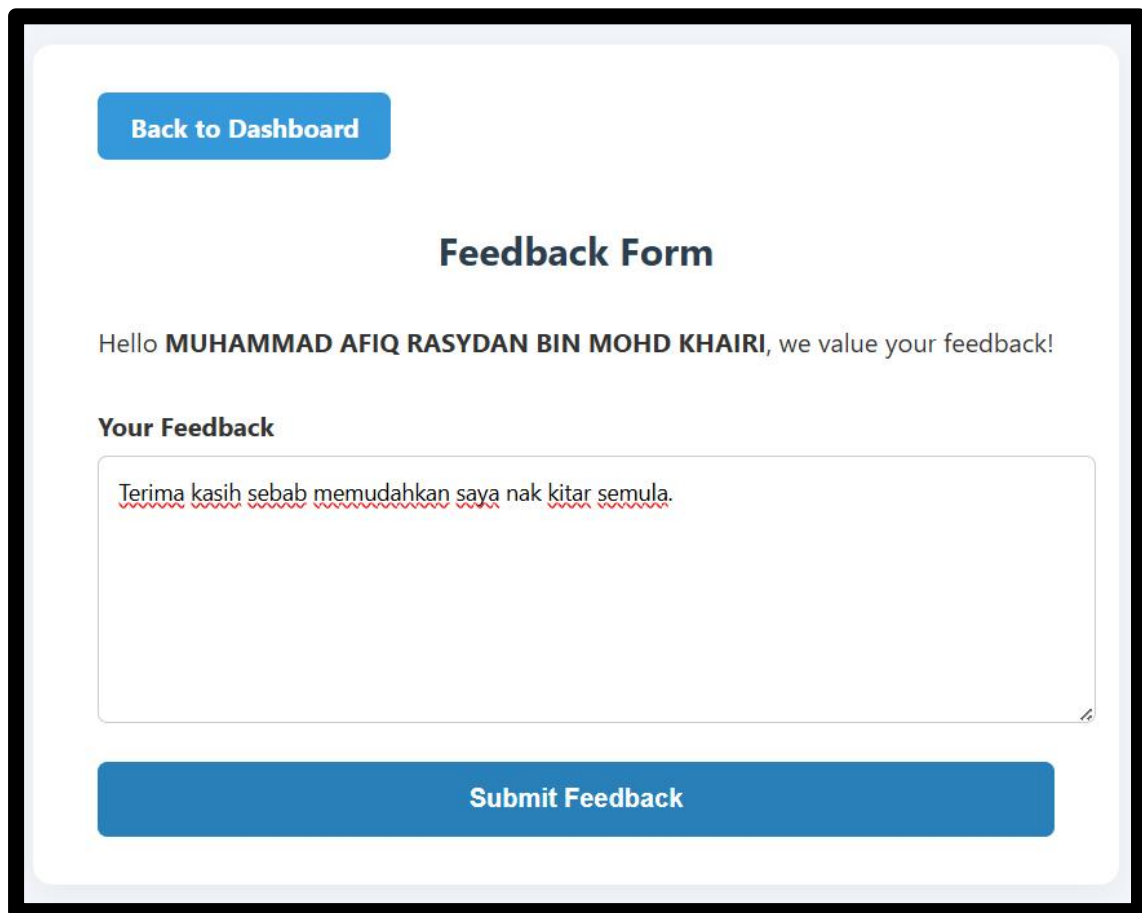
STEP 38 :

On the **Feedback Form**, the user can enter any feedback they wish to provide.

STEP 39 :

Once **fill completed**, the user needs to click the "**Submit Feedback**" button.

STEP 40 :

Then, the user needs to click the "**Back to Dashboard**" button to return to the Main Dashboard.

STEP 41 :

To change the user's role, click the "**Roles and Permission**" button on the **Main Dashboard**.

Our Menu

- Make a Donation
- Donation Records
- Create Dispatch
- Dispatch Records
- Feedback
- Roles and Permission
- Feedback Records
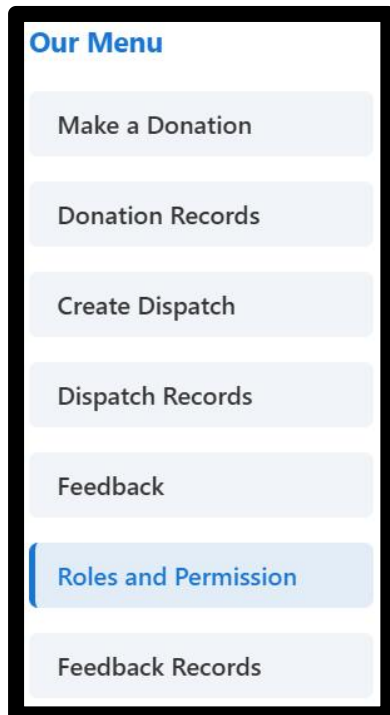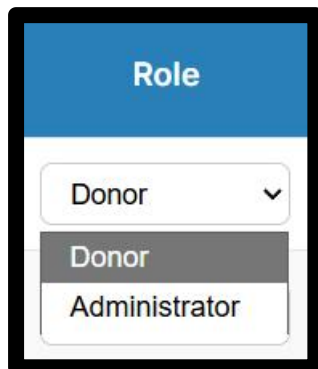
STEP 42 :

On this page, the user can **edit** the **Roles** of all registered users.

Roles and Permissions

Back to Dashboard

User ID	Full Name	Email	Role
4	Aisy Iman	hihi@gmail.com	Donor
8	MUHAMMAD AFIQ RASYDAN BIN MOHD KHAIRI	2023221096@student.uitm.edu.my	Administrator
7	MUHAMMAD AFIQ RASYDAN BIN MOHD KHAIRI	2023221096@student.uitm.edu.my	Administrator
6	MUHAMMAD AFIQ RASYDAN BIN MOHD KHAIRI	2023221096@student.uitm.edu.my	Administrator
5	Muhammad Khairul	hehe@gmail.com	Donor

Save Changes

STEP 43 :

The user can choose between two role options : **Donor** and **Administrator**.
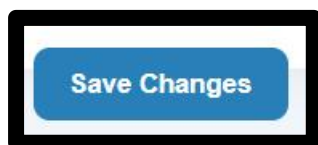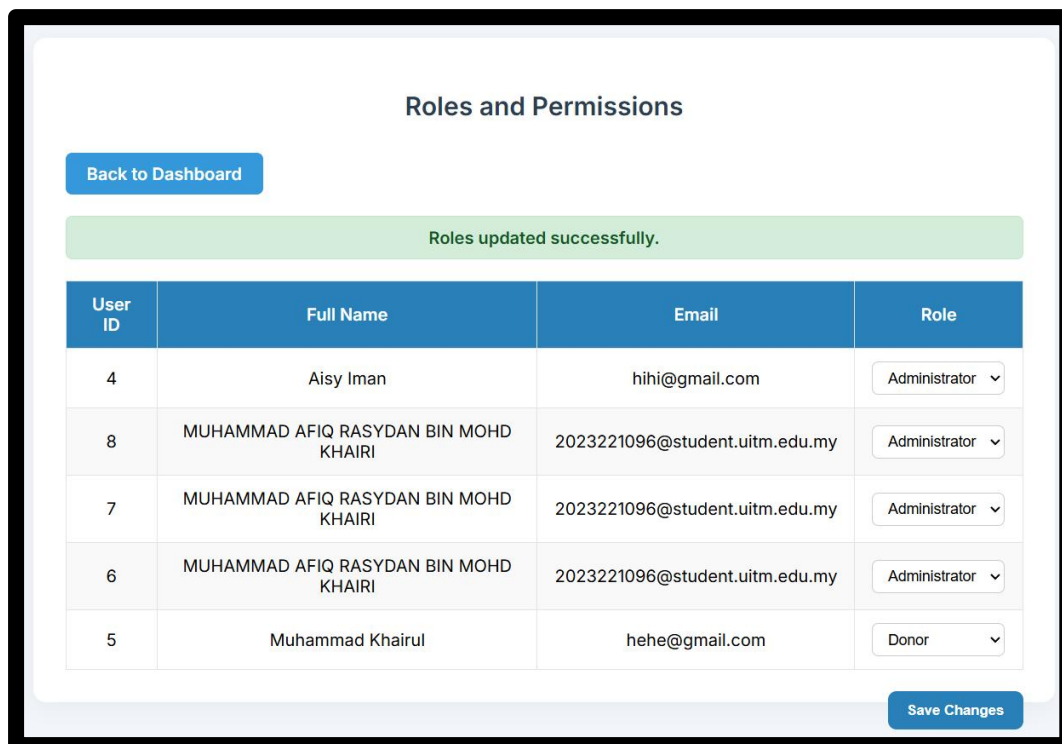
STEP 44 :

Then , click "Save Changes".

Example after editing a Role.

To **check** feedback records, the user can click on "**Feedback Records**".
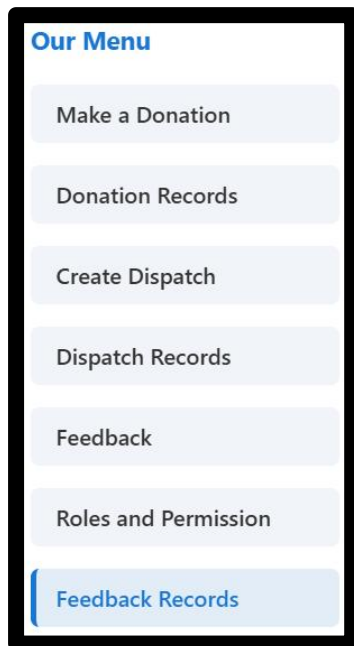
STEP 47 :

On this page, all feedback from both **Donors** and **Admins** will be displayed.
Then, **click "Back to Dashboard"**.
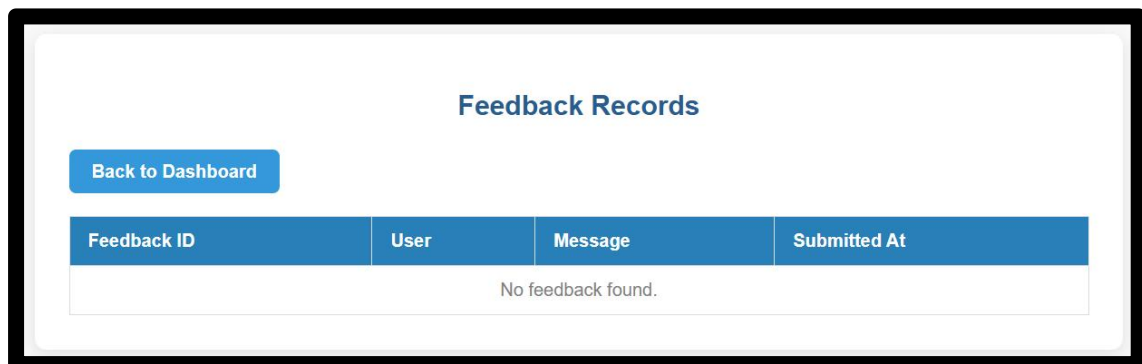
STEP 48 :

After returning to the **Main Dashboard ,** the user can click the "**Logout**"
button to exit the page.
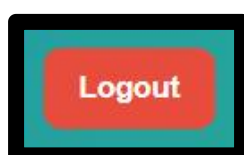
*Step by Step for **Donor***

STEP 1 :

Open **NetBeans** IDE.

STEP 2 :

Make sure the **AidConnect** project file is opened in NetBeans IDE.

STEP 3 :

Click the **Run Project** button.

<u>STEP 4 :</u>

Once the project runs successfully, it will open the **AidConnect Login Page**.
If the user already has an account, enter your Email and Password to log in.

<u>STEP 5 :</u>

If you do not have an account yet, you need to R**egister** for an account first.

On the **AidConnect Registration Page**, the user must fill in their **Full Name, Email Address, Username, Password, and Confirm Password** as a verification step.

STEP 7 :

Once all the information has been filled in, click the **"Create Account"** button.

After returning to the **Login Page**, enter the **Email** and **Password** you registered with.

Then, click the "**Login**" button.

After logging in, the user will be directed to the **Main Dashboard** page. On this page, you can view the following information:

i**. Total Donation Received**
ii. **Total Dispatches Made**
iii.**Top Donated Products**
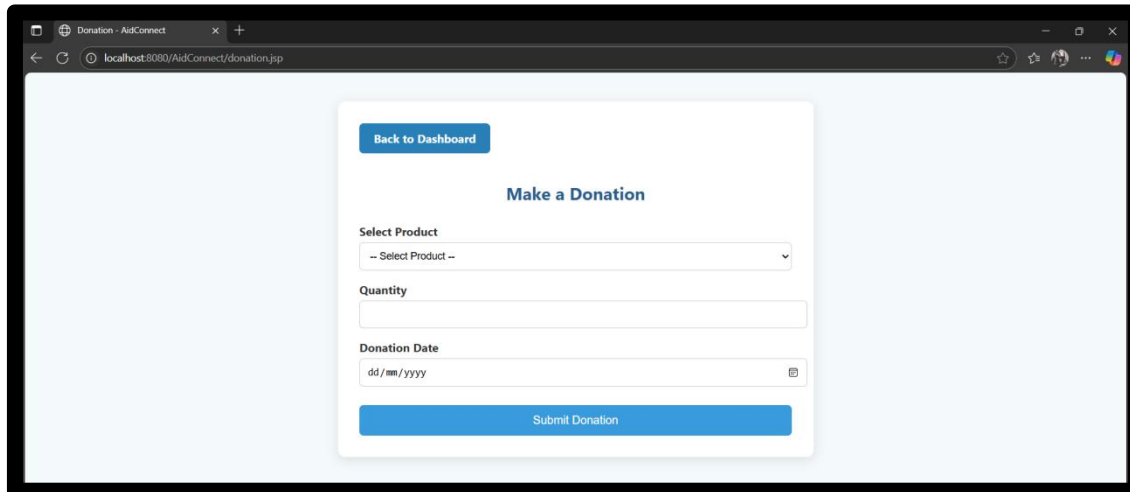iv. **Dispatch Status**
v. **Donations by Date**

STEP 10 :

To make a donation, the user needs to click the **"Make a Donation"** button on the Main Dashboard.
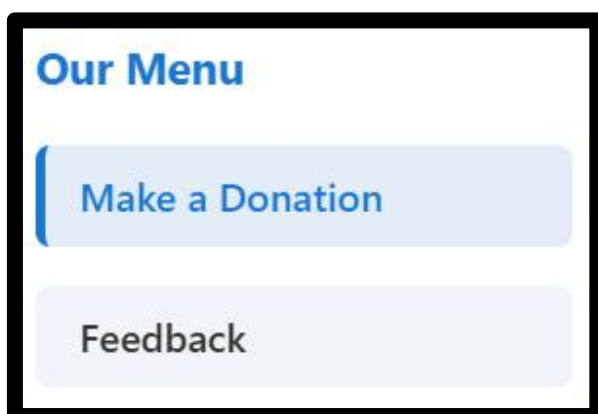
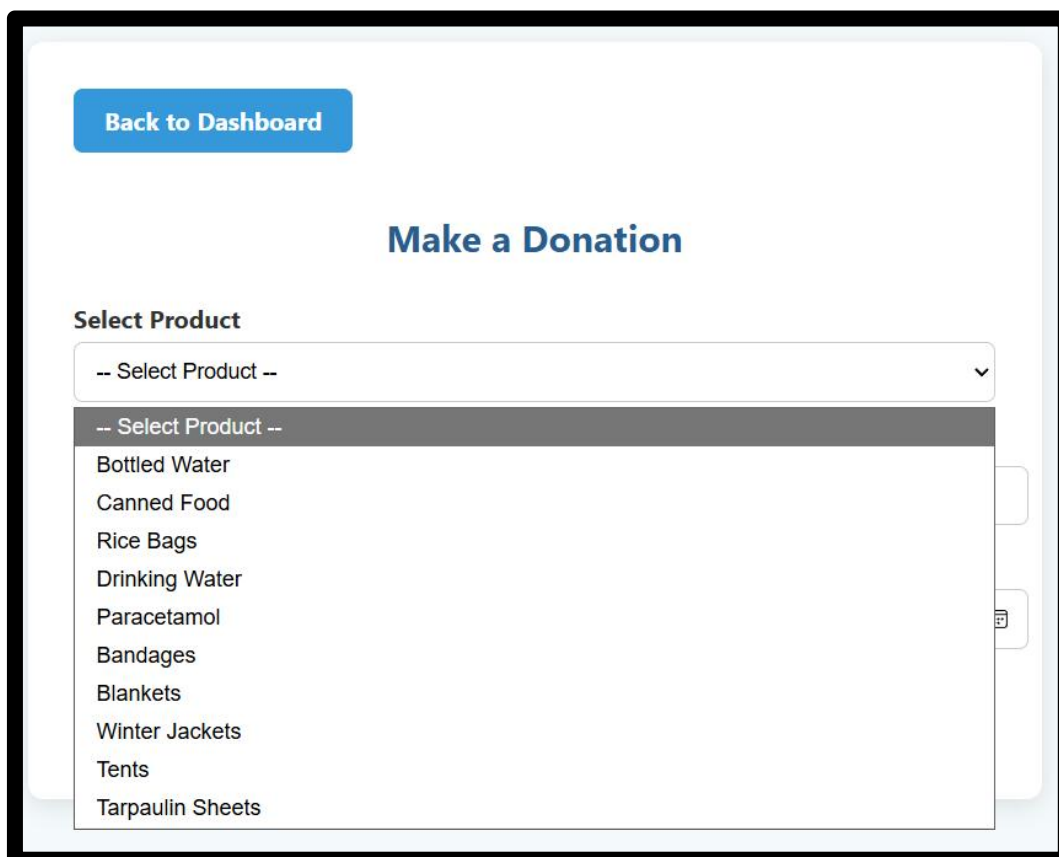After navigating to the "Make a Donation" page, **fill in all the required information**.

STEP 12 :

Select a product from the available options in the list.

STEP 13 :

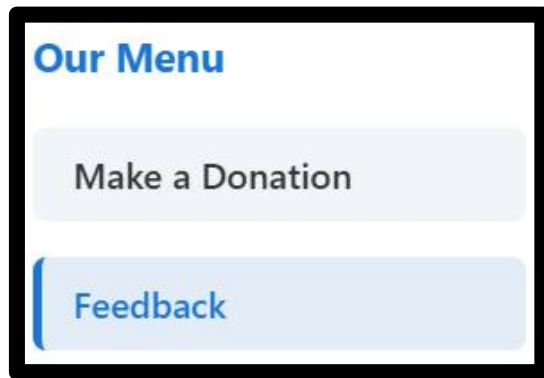Once all the information has been filled in, click the "**Submit Donation**" button.

STEP 14 :

Then, click the "**Back to Dashboard**" button.
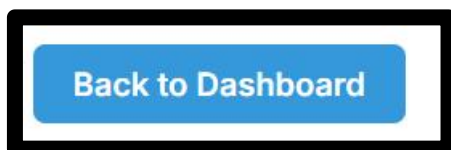
STEP 15 :

To provide **feedback**, the user needs to click the "**Feedback**" button on the Main Dashboard.

On the **Feedback Form**, the user can enter any feedback they wish to provide.
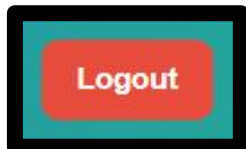
Then, the user needs to click the **"Back to Dashboard"** button to return to the Main Dashboard.

STEP 18 :

After returning to the **Main Dashboard ,** the user can click the "**Logout**" button to exit the page.

8.0 Conclusion

In conclusion, the AidConnect web application aims to streamline the process of managing disaster relief supplies through effective coordination of donations and dispatches. By using Java EE technologies such as JSP, Servlets, and JDBC, the system ensures dynamic functionality and secure data handling. The modules developed, including registration, login, dashboard, donation management, and dispatch tracking, provide a complete solution to support relief operations. This project not only enhances our understanding of enterprise application development but also demonstrates how technology can contribute meaningfully in times of crisis. With future improvements, AidConnect can be expanded further to support real-world disaster relief efforts on a larger scale.

Appendix

Codes: GitHub