Project Document

Business Rules:

- A user can be a donor or recipient.
- **Password Hashing**: Upon user registration, passwords are securely hashed. This measure ensures the protection of user details and enhances data security by encrypting sensitive information.
- **Restricted Access**: The details of recipients are accessible solely to donors. This access is granted when donors are paired with potential recipients, ensuring confidentiality and privacy for recipients until a match is established with a donor.
- **Communication Options**: Donors are provided with two forms of communication options to contact the recipients: phone number and email. This flexibility ensures that donors are not restricted to a single method of contact and can choose the communication channel that best suits their preferences or circumstances.
- **Predefined Item List for Transaction Assurance**: Both donors and recipients are limited to selecting items only from a predefined list curated by the organization. This restriction ensures that transactions occur smoothly by guaranteeing that both parties select items from the same pool of available options. By providing a predefined list of items, the organization simplifies the donation process, reduces potential mismatches, and enhances the likelihood of successful transactions. The donor is not limited in the number of items they wish to donate. However, the recipient is restricted to requesting a maximum quantity of 9 for any given item.

Business Rules for the Donor:

- Donors choose items from a predefined list provided by the organization without any additional donation preferences.
- Donors have the freedom to specify the quantity of each selected item they wish to donate. There are no limitations imposed on the quantity that can be donated.
- Donors have access to a comprehensive history of their past donations. The donor history feature provides transparency and accountability, allowing donors to track their contributions over time.

Business Rules for the Recipient:

- Recipients have the option to make requests for items from a predefined list provided by the organization.
- Recipients are restricted to selecting a specific quantity for each item they request. This limitation ensures fairness among recipients and prevents potential abuse of the system by restricting the number of items a recipient can request.

Processes and Procedures

Here is a clear description of the procedures and processes involved in this project, which aim to create an app that connects donors with recipients for resource sharing:

1. Sign up and Login: A new user, whether a recipient or donor, signs up on the app by entering their username, email, and password. Upon submission, this data is sent to the `new_user.php` script, which first validates the inputs to ensure they are correctly formatted and complete. The script then securely hashes the password. Once validated and hashed, the user details are stored in the database's user table. This process ensures that all user credentials are securely processed and saved. When the user logs into the app, the data is sent to the `new_login.php` script. The `new_login.php` script retrieves the user's details from the users table using the provided email and password for verification. If the user is valid, the user is authenticated and can access the app.

2. Make Request: The recipient selects items from a predefined list and specifies the desired quantity. This data is sent to the `request.php` script, which checks if a similar request already exists in the database. If no similar request is found, the script inserts the new request into the `requests` table. Finally, the script returns a success message if the request is successfully inserted, or a failure message if an error occurs.

3. Make Donation: Donors select items they want to donate from a predefined list and specify quantities. The data is sent to the `transactions.php` script, which updates the transactions table with the donors' contributions. It then updates both the requests and donors tables to reflect the transaction, ensuring accurate records of donations and fulfilled requests.

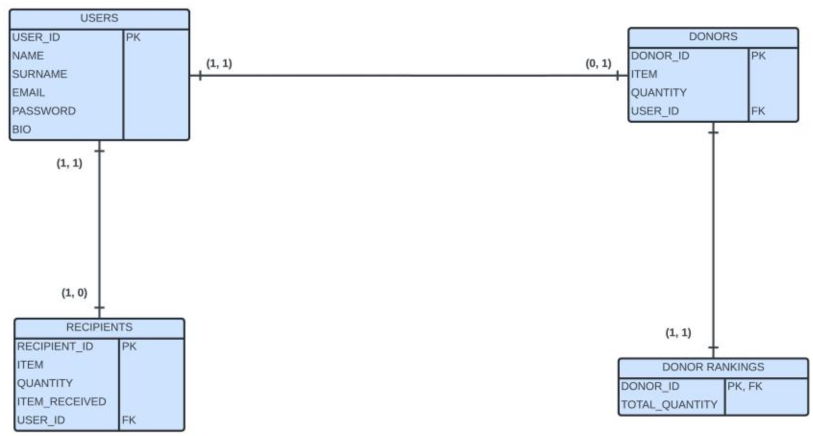
4. Matching Donors and Recipients: Upon a donor making a donation, the system matches the donor with recipients who have requested the same item. This matching process is handled by the `matching.php` script. The donor is then presented with a list of matched recipients and can select a recipient and specify the quantity they wish to donate. The details of the donation are subsequently recorded in both the `transactions` table and the `donors` table.
5. Viewing Donation History and Request History: Users can view their donation history through the app, where the `donorhistory.php` script retrieves the donor's donation records from the transactions table and the corresponding item details from the requests table. Similarly, users can view their request history through the app, with the `recipienthist.php` script retrieving the recipient's request records from the requests table and the corresponding transaction details from the transactions table. This allows both donors and recipients to easily access and review their respective histories within the app.

6. Leaderboard System: The `transactions.php` script calculates the total quantity of items donated by each donor from the transactions table and stores this total in the donors table. The `donor_rank.php` script then ranks the donors based on the number of items donated by each donor. The leaderboard is updated periodically or after each donation, ensuring that the rankings reflect the most current donation activity.
7. Bio: When a recipient makes a request, they also insert a bio, which gets stored in the recipient's table by the insertbio.php. When the recipient is matched with a donor, the `get_bio.php` script retrieves the bio from the table to display it.

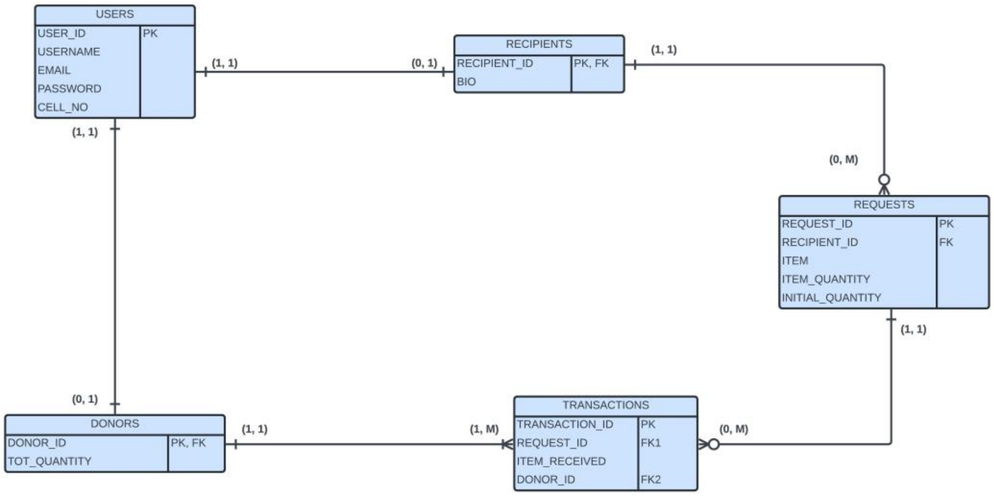
ERD DIAGRAMS

The ERD diagrams are below as follows:

Initial ERD Diagram:


USERS
USER_ID
PK
NAME
SURNAME
EMAIL
PASSWORD
BIO
(1, 1)
(0, 1)
DONORS
DONOR_ID
PK
ITEM
QUANTITY
USER_ID
FK
(1, 1)
(1, 0)
RECIPIENTS
RECIPIENT_ID
PK
ITEM
QUANTITY
ITEM_RECEIVED
USER_ID
FK
(1, 1)
DONOR RANKINGS
DONOR_ID
PK, FK
TOTAL_QUANTITY

<u>Final ERD Diagram</u>



The modifications implemented from the initial to the final ERD diagram are as follows:

1. In the "users" table, the attributes "name" and "surname" were removed and replaced with the attribute "username." This change was made to ensure that users can enter a unique username, thereby preventing duplications associated with identical names and surnames.

2. An additional table, named "transactions," was introduced to record the transactions occurring between the recipient and the donor. This table also tracks the items donated along with their respective quantities.

3. No many-to-many relationships were identified during the creation of these tables.

4. A "requests" table was created to monitor the requests made by recipients, including the items requested, the initial quantity, and the updated quantity of those items.

5. The "donor ranking" table was removed as it was deemed unnecessary and contributed to data duplication.

6. The "donors" table was simplified, retaining only the attributes "donor_id" and "tot_quantity."

7. Similarly, the "recipients" table was reduced to include only two attributes: "bio" and "recipient_id."

Generosity Gateway!

Our application enables users to assist others experiencing shortages. It facilitates connections between individuals with surplus resources and those in need. The app contains a predefined list of resources that users might require, streamlining the process of matching donors with recipients.

Upon signing up, a new user enters their information. After completing the registration process, the user is directed to a login page. Once the login information is submitted, the user is taken to the main dashboard. From the dashboard, the user can choose to either donate resources or make a request for resources.

Upon choosing to donate, the donor selects the item they wish to donate along with the desired quantity. After making the donation, the donor is paired with potential recipients. The donor then selects the recipient they want to donate to and allocates the desired quantity to that recipient.

Upon choosing a potential recipient to donate to, the donor is directed to the recipient's page. Here, the donor can view the recipient's bio and contact details.

When a donation is made, both the donation history and the leaderboard are updated accordingly.

We have several tables to manage the application data:

1. **Users Table**: Stores users' credentials.

2. **Recipients Table**: Keeps track of the recipients' bios and any changes they make.

3. **Donors Table**: Stores the total quantity of items donated by each donor.

4. **Requests Table**: Keeps track of the requests made by recipients for each item.

5. **Transactions Table**: Records the details of all donations and requests, and updates the corresponding tables to reflect these transactions.