Blood Donation Management System

Group Number: 37

Phase 1

Members

Name	ID
Hassain Alsayhah	202028180
Mohammed Almubarak	202024880
Feras Alhasmi	202031280

DECEMBER 16, 2023

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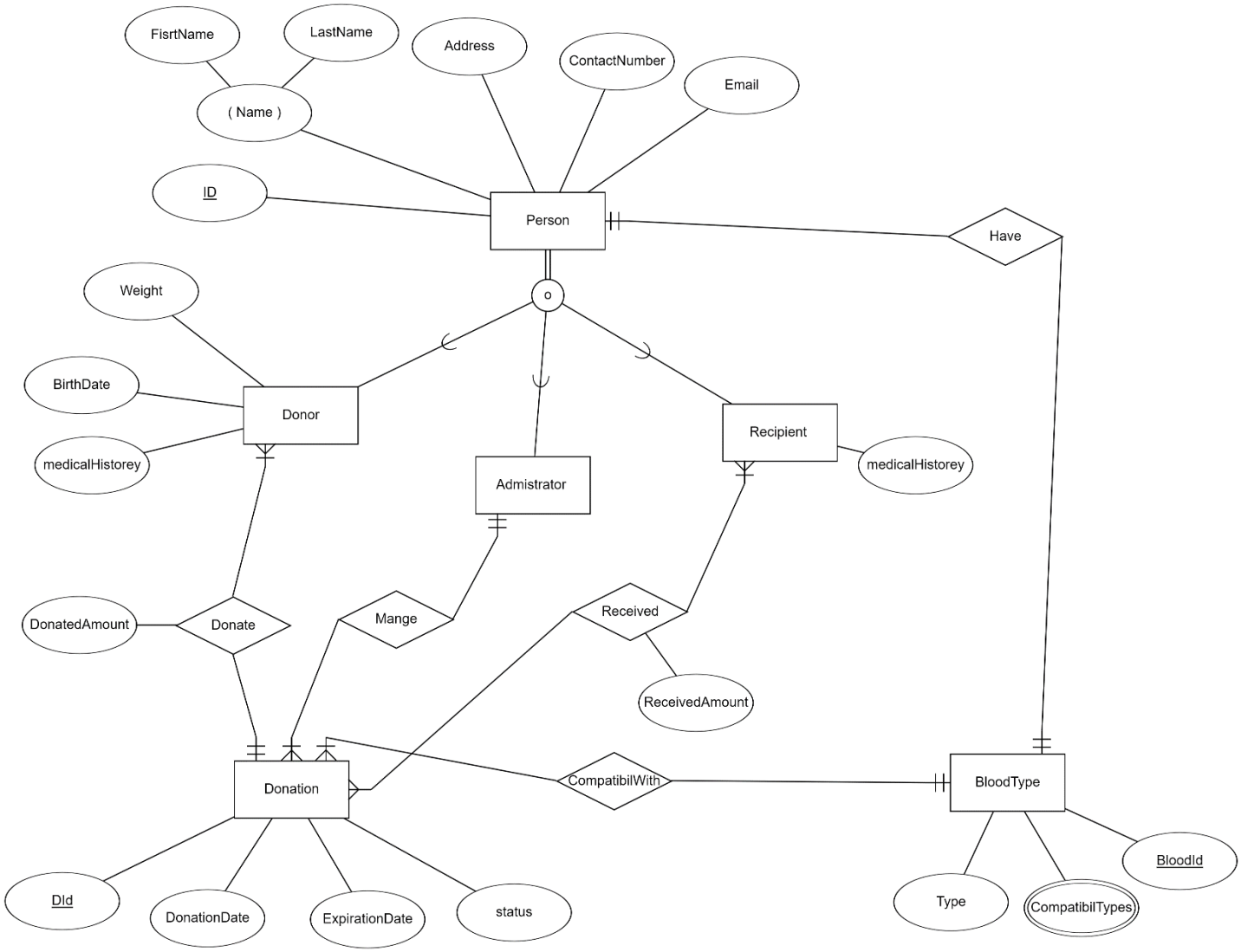
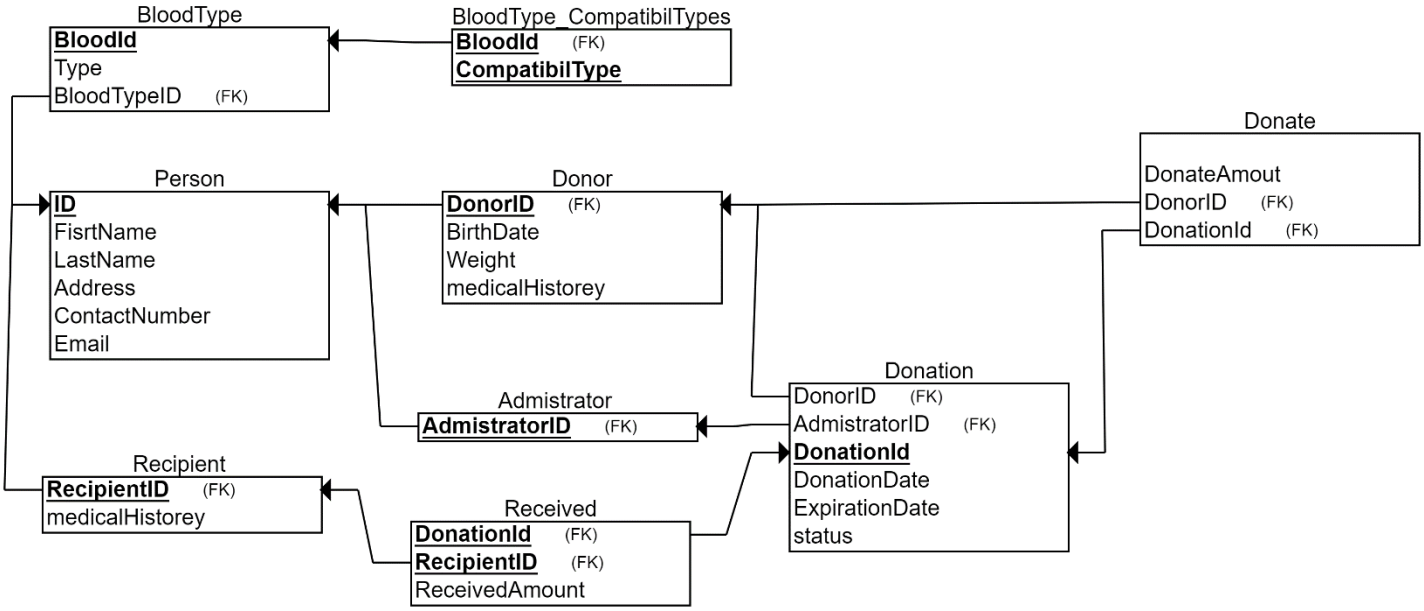
Phase 1 work:

EER Model:



Relational Schema:



Assumptions:

1- Each person has a unique ID.
2- Each person has a first name and a last name.
3- Each person has a blood type
4- A person can be a donor, a recipient, or an administrator at the same time.
5- A Donor has a weight.
6- Each donation has a donated amount
7- The compatibility between the recipient and the donor's blood types can be determined by referring to a blood type table, which identifies the compatible types for transfusion validation.
8- Each donation has a donation date and Expiration Date.
9- Each donation has a status of either passed or failed.
10- The administrator can manage many donations, collecting, storing, distributing, etc.
11- The recipient has a medical history.
12- Each donation has a received amount.
13- Each blood type has a unique ID.
14- Each blood type has a compatible blood type or more.

Semantic requirements that cannot be captured in the EER model:

1- Each donor must be:

At least 17 years old

Weigh at least 114 lbs.

Be free of major diseases.

2- Blood collection drives scheduling every 3 months.
3- Monitoring expiration dates of stored blood.
4- Incident tracking (capturing details of process failures).
5- Usage trend reports.

Team members Contribution in Phase 1

Name	Contribution
Hassain Alsayhah	33.34
Mohammed Almubarak	33.33
Feras Alhasmi	33.33

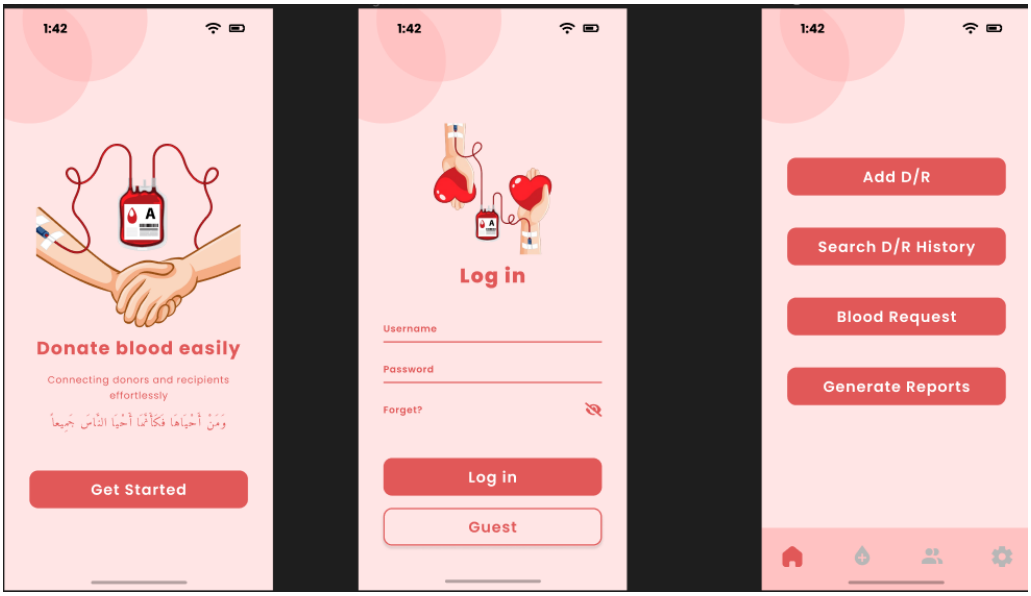
Phase 2 work:

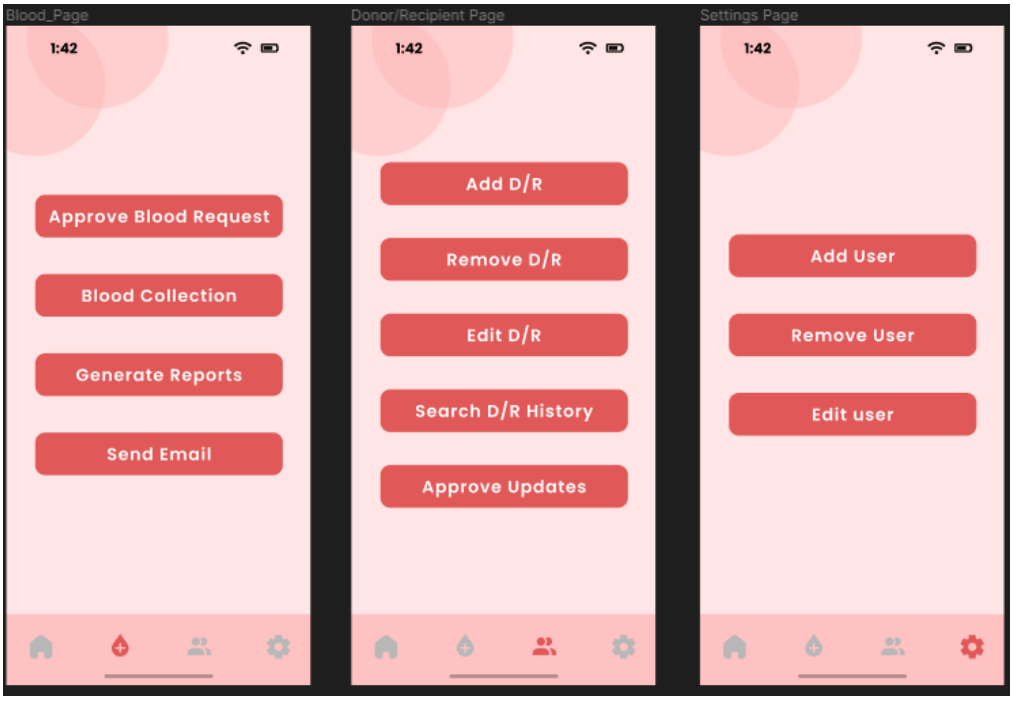
Repository link:

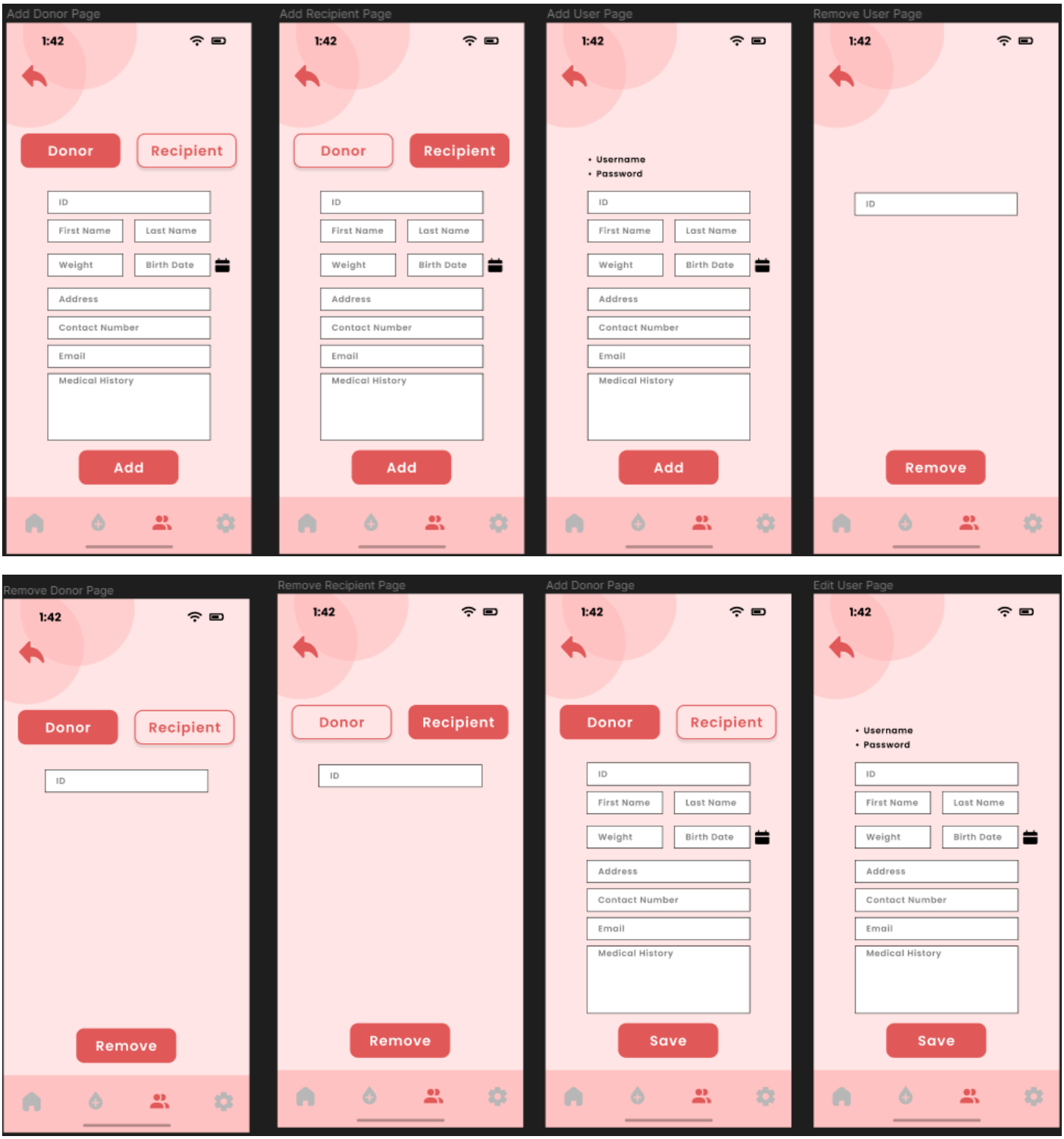
https://github.com/MoAlmubarak/ICS321-Database_project.git

How we implemented Phase 2:

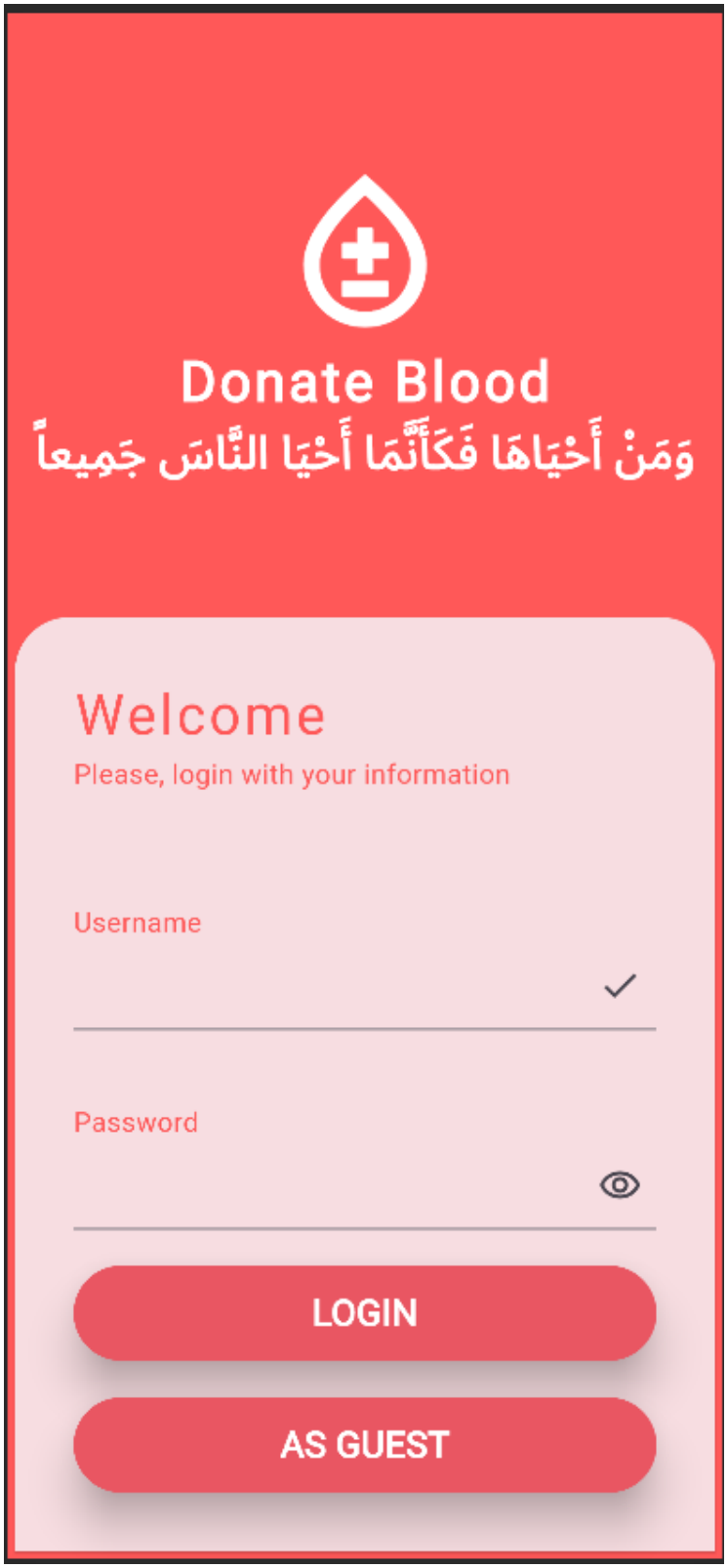
For brainstorming the user interface and the user experience we used Figma you can see the work that we did in Figma below:

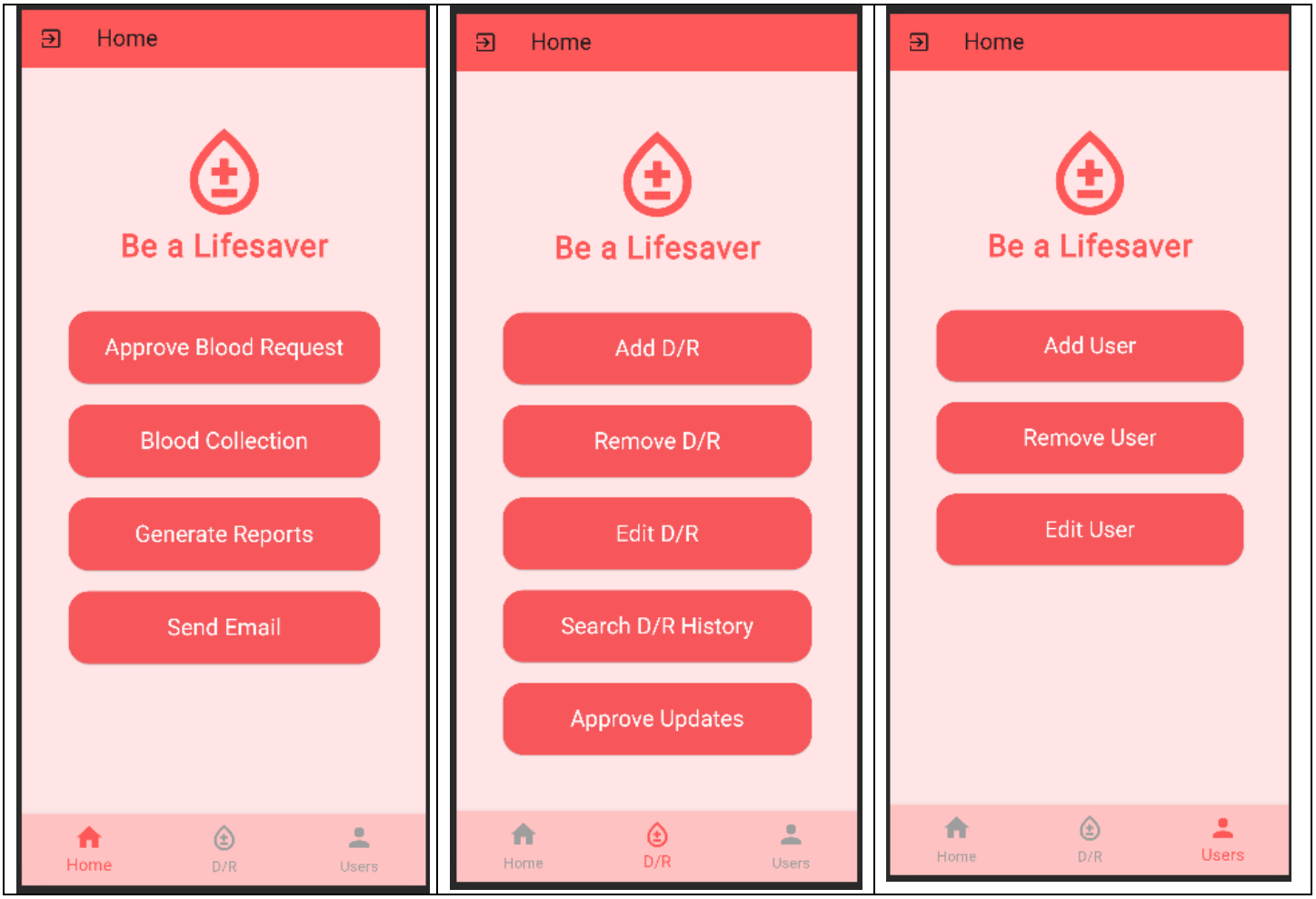


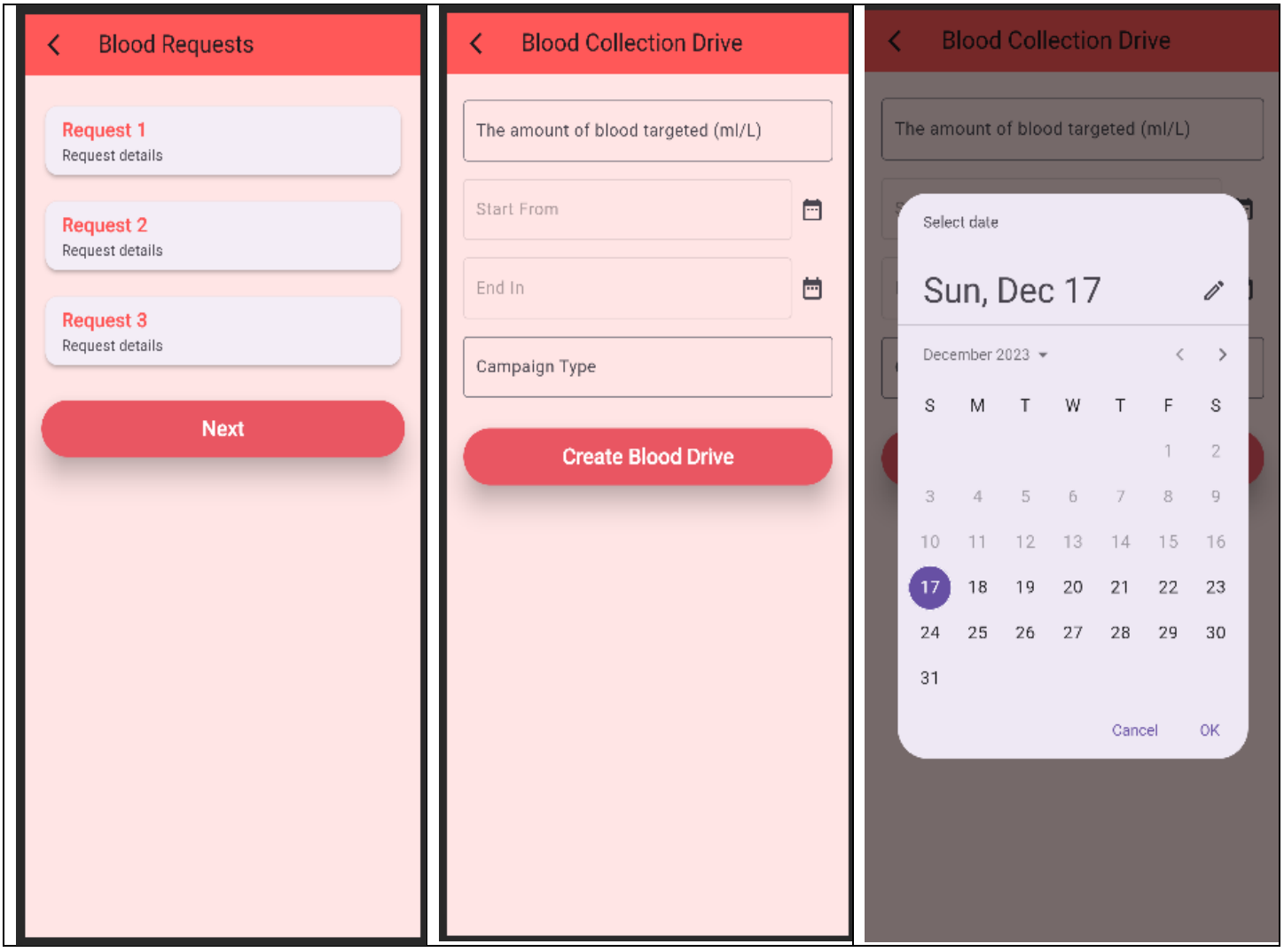


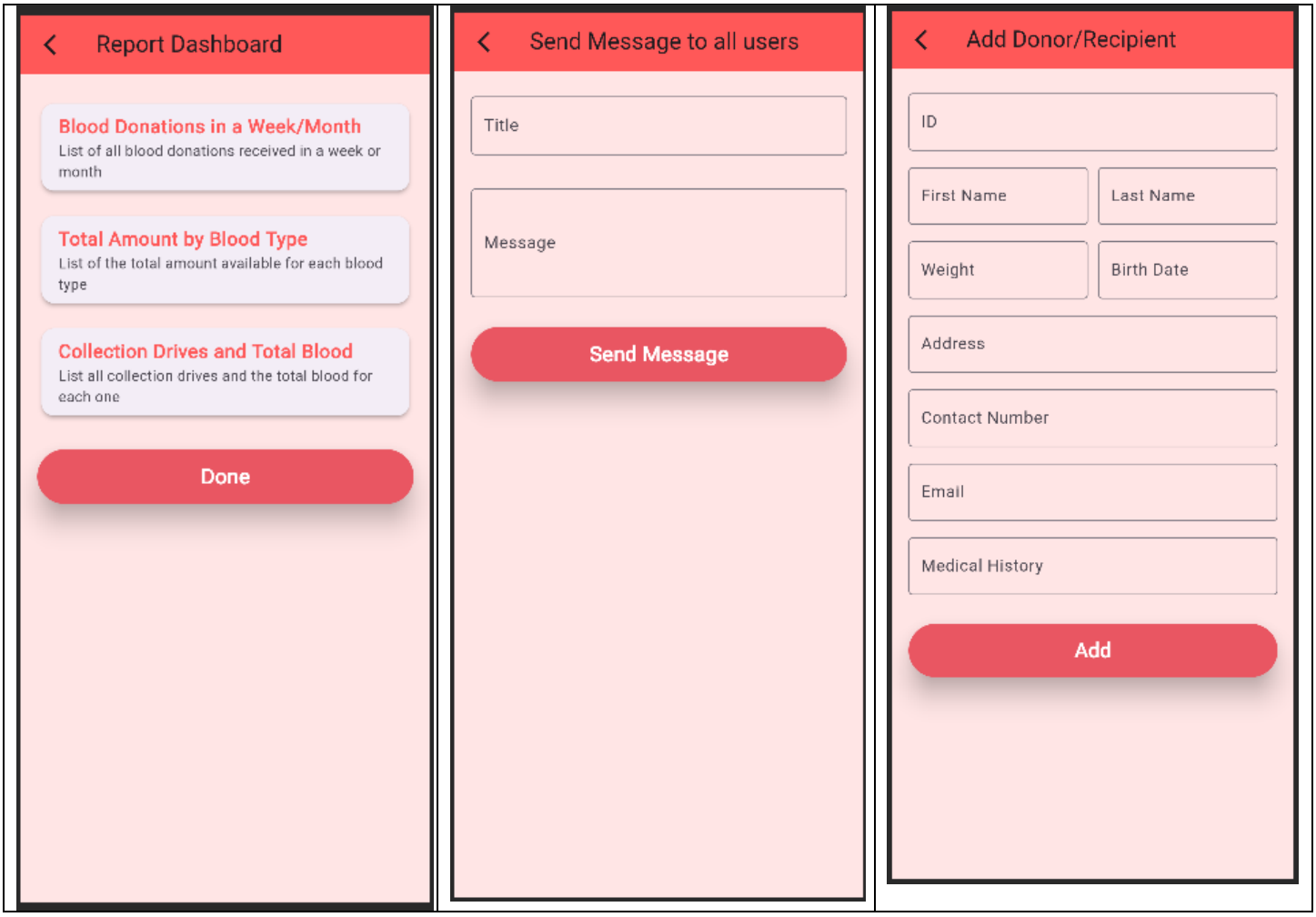

Add Donor Page
1:42
Donor
Recipient
ID
First Name
Last Name
Weight
Birth Date
Address
Contact Number
Email
Medical History
Add
Add Recipient Page
1:42
Donor
Recipient
ID
First Name
Last Name
Weight
Birth Date
Address
Contact Number
Email
Medical History
Add
Add User Page
1:42
• Username
• Password
ID
First Name
Last Name
Weight
Birth Date
Address
Contact Number
Email
Medical History
Add
Remove User Page
1:42
ID
Remove
Remove Donor Page
1:42
Donor
Recipient
ID
Remove
Remove Recipient Page
1:42
Donor
Recipient
ID
Remove
Add Donor Page
1:42
Donor
Recipient
ID
First Name
Last Name
Weight
Birth Date
Address
Contact Number
Email
Medical History
Save
Edit User Page
1:42
• Username
• Password
ID
First Name
Last Name
Weight
Birth Date
Address
Contact Number
Email
Medical History
Save

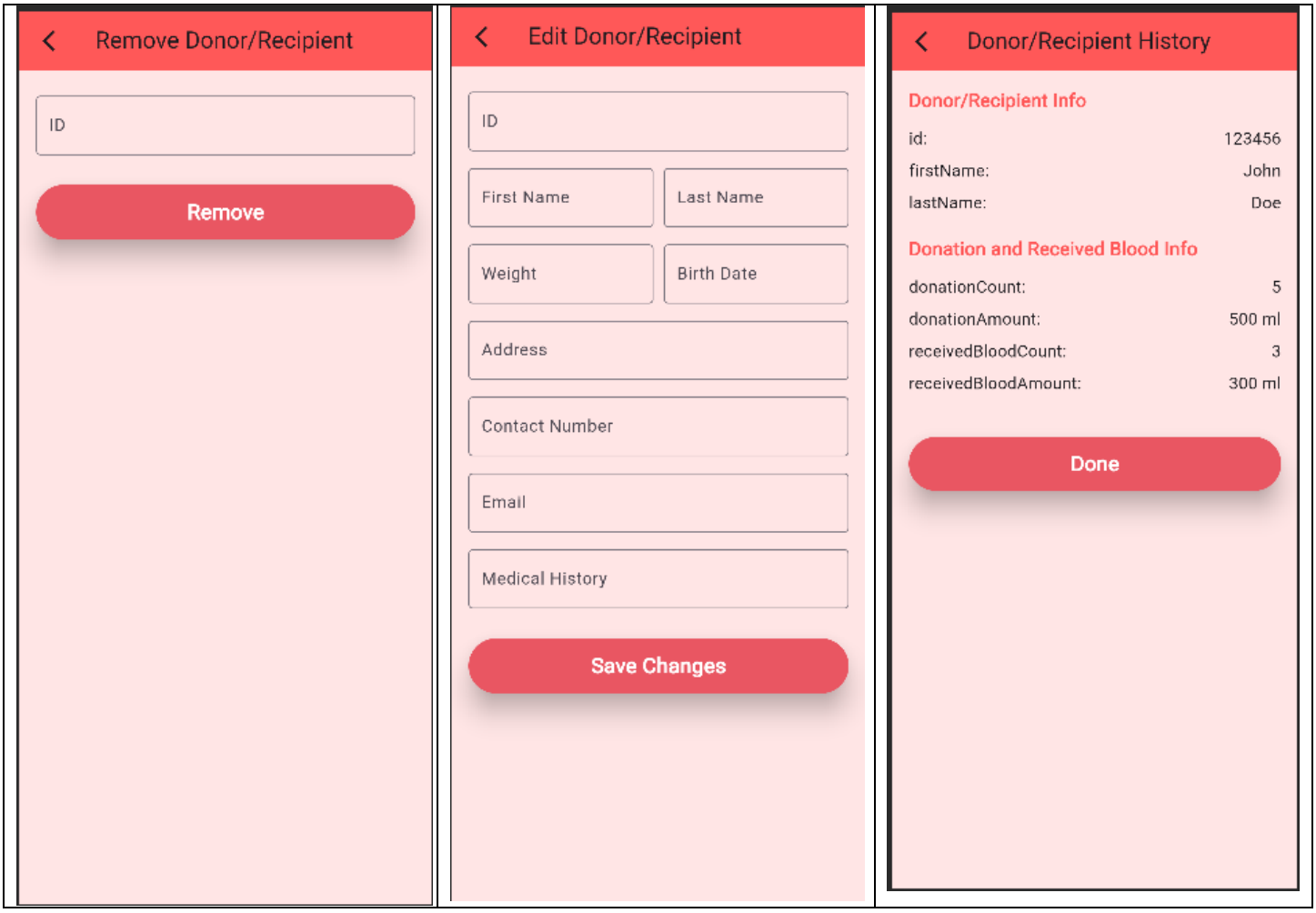
Below are the actual screens for our project

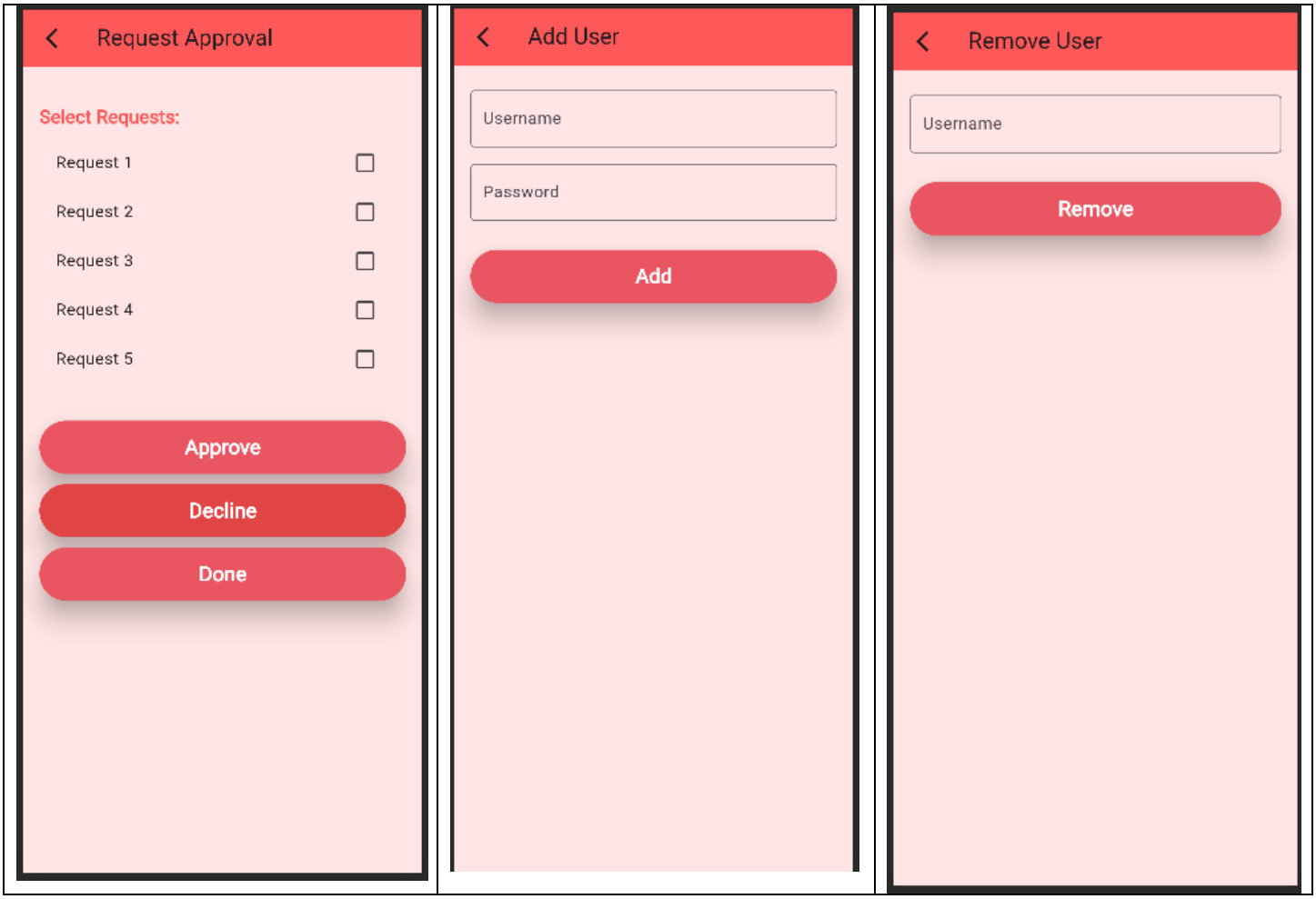


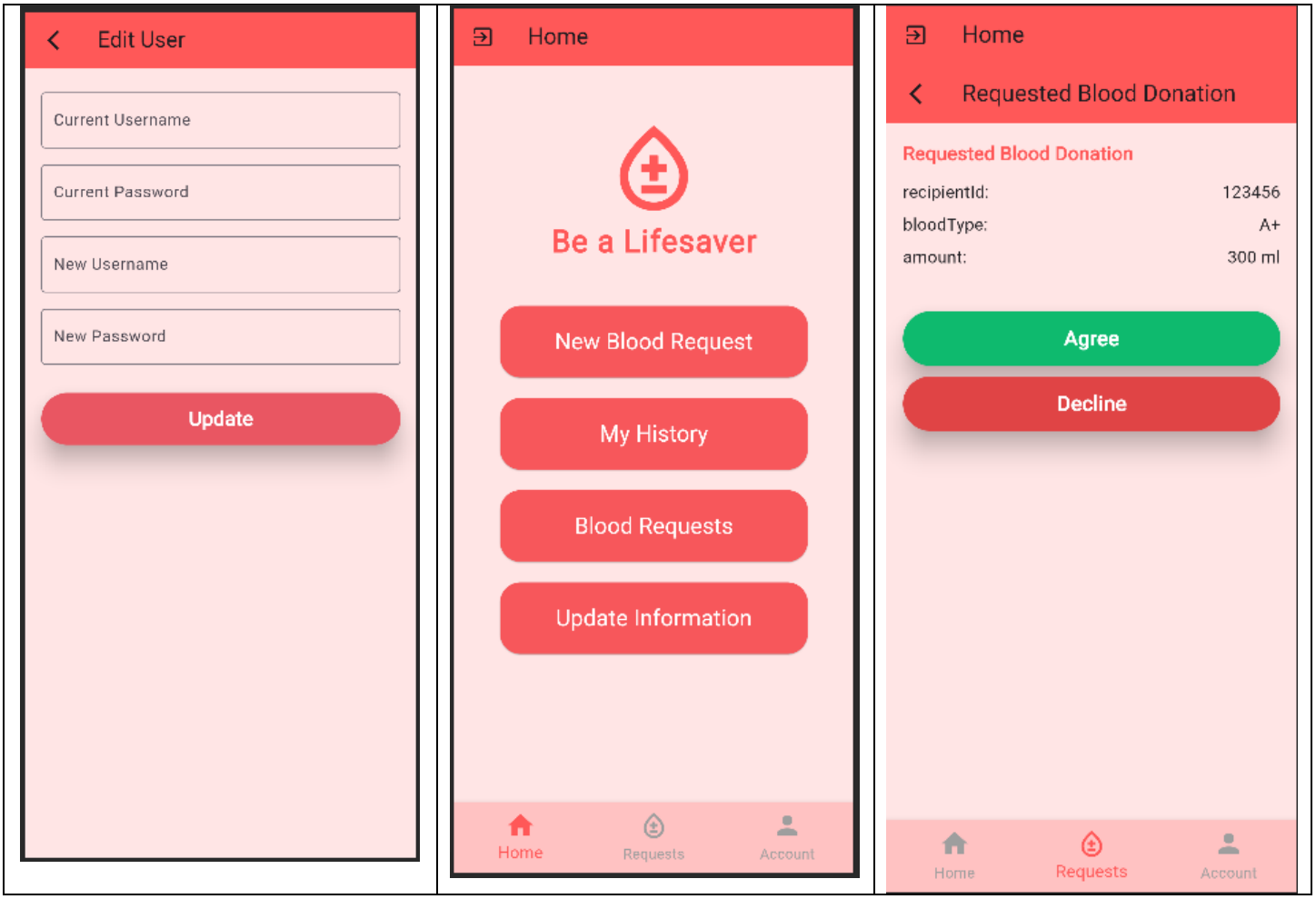

Home
Be a Lifesaver
Approve Blood Request
Blood Collection
Generate Reports
Send Email
Home
D/R
Users
Home
Be a Lifesaver
Add D/R
Remove D/R
Edit D/R
Search D/R History
Approve Updates
Home
D/R
Users
Home
Be a Lifesaver
Add User
Remove User
Edit User
Home
D/R
Users

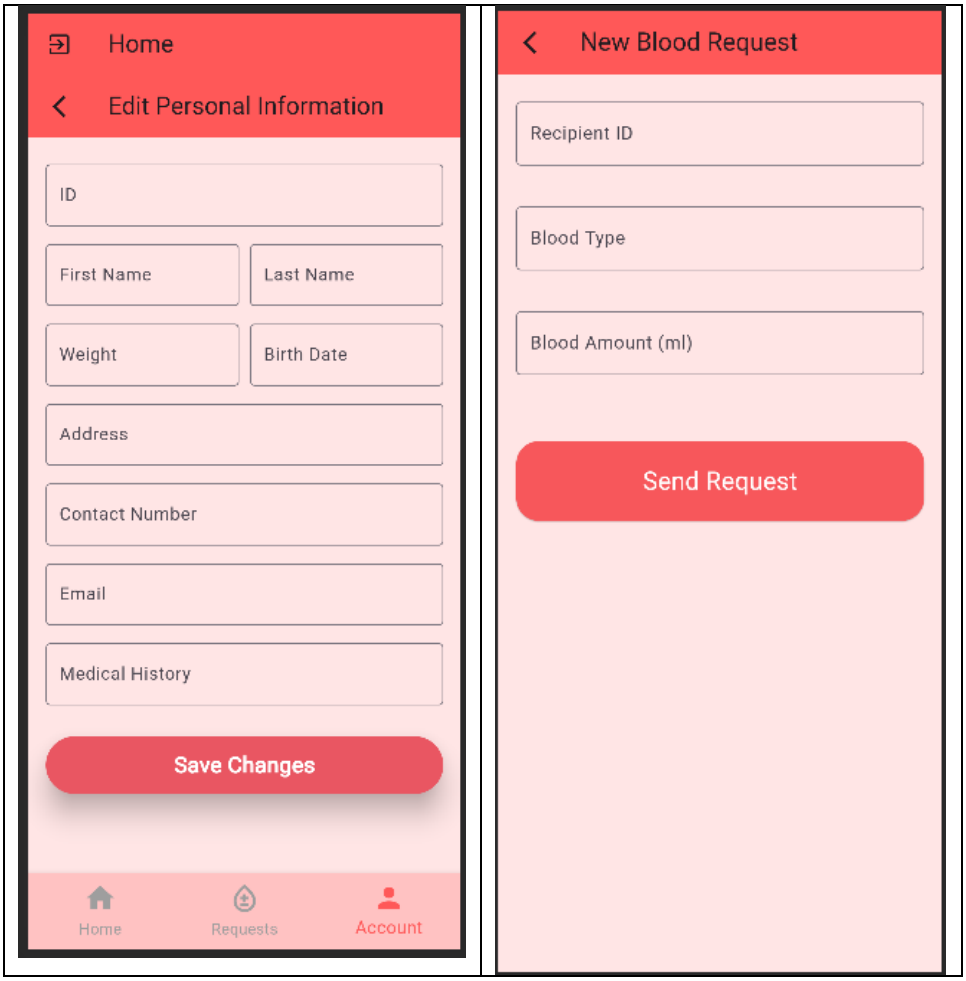

Blood Requests
Request 1
Request details
Request 2
Request details
Request 3
Request details
Next
Blood Collection Drive
The amount of blood targeted (ml/L)
Start From
End In
Campaign Type
Create Blood Drive
Blood Collection Drive
The amount of blood targeted (ml/L)
Select date
Sun, Dec 17
December 2023
S M T W T F S
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
Cancel
OK


Report Dashboard
Blood Donations in a Week/Month
List of all blood donations received in a week or month
Total Amount by Blood Type
List of the total amount available for each blood type
Collection Drives and Total Blood
List all collection drives and the total blood for each one
Done
Send Message to all users
Title
Message
Send Message
Add Donor/Recipient
ID
First Name
Last Name
Weight
Birth Date
Address
Contact Number
Email
Medical History
Add


Remove Donor/Recipient
ID
Remove
Edit Donor/Recipient
ID
First Name
Last Name
Weight
Birth Date
Address
Contact Number
Email
Medical History
Save Changes
Donor/Recipient History
Donor/Recipient Info
id: 123456
firstName: John
lastName: Doe
Donation and Received Blood Info
donationCount: 5
donationAmount: 500 ml
receivedBloodCount: 3
receivedBloodAmount: 300 ml
Done


Request Approval
Select Requests:
Request 1
Request 2
Request 3
Request 4
Request 5
Approve
Decline
Done
Add User
Username
Password
Add
Remove User
Username
Remove


Edit User
Current Username
Current Password
New Username
New Password
Update
Home
Be a Lifesaver
New Blood Request
My History
Blood Requests
Update Information
Home
Requests
Account
Home
Requested Blood Donation
Requested Blood Donation
recipientId: 123456
bloodType: A+
amount: 300 ml
Agree
Decline
Home
Requests
Account



For the implementation of phase 2 we have used **Flutter framework** for the interface and for the database we used **Sqflite** which is a Flutter plugin for **SQLite.**

tools and resources that you used:

- Figma (for brainstorming)
- Flutter (for development)
- Git and GitHub (for controlling the code versions)
- Teams (for communication)

problems that we faced:

we have faced many problems during the journey of developing the project below I will highlight some of them:

- Sharing and controlling any code that we wrote we have solved this problem by using Git and GitHub
- Combining them database code with the frontend work
- Ambiguity in the requirements of the project we solved this problem by making our own assumptions.
- Recreating the exact scenes from Figma. We tried to do our best to be as close as possible to the Figma design.

What we learned for the project:

We have learned a lot of things during developing the project. Below are some of them.

- We improved our experience of working with teams.
- Learnd a lot about database management and SQLite.
- Learned how to use version control systems like Git and how to use GitHub with it.
- Engaged and increased our knowledge in Figma.
- Learned a new framework for app development which is Flutter.

percentage completion of each required operation:

Operation	Percentage of completion
Functions of an Administration/Employee	
Add/Remove/Edit Donor/Recipient information.	100
Search for donor and recipient history.	100
Add/Remove/Edit system user information.	100
Process request for Blood for a recipient.	100
Initiate Blood Collection Drive in a given period.	100
Generate dashboards/reports using your system.	80
Sending appropriate notifications through email etc.	70
Functions of a Donor/Recepients	
Search for own (as donor or recipient) history.	100
Agree for blood donation/receiving (as donor or recipient).	100
Update personal information of Donor and Recipient including medical history. This should then be approved by system administrator before actual database update.	100
Do payments as charges only for receiving blood.	--------
General Function (for all users)	
Login and Logout	100
Browse as Guest	100
Reports (as system output)	
List of all blood donations received in a week or a month.	100
List the aggregated amount available for each blood type.	100
List all Collection Drive and total blood collected during each drive.	100
All Payments that have been confirmed as completed.	----------

extra things done:

We tried to implement the best practices of software design in writing the code.

We allowed the user to make a request for blood donation.

tasks done by each group member:

Operation	Mohammed Almubarak	Feras Alhasmi	Hassain Alsayhah
Implemented the database.		✓	
Implemented the frontend.	✓		
Connected the database to the frontend.			✓

Suggestions to improve ICS 321 future projects:

- Include a lab for the course.
- Give assignments as mini projects rather than a pig project at the end.
- Make the requirements of the project as detailed as possible.