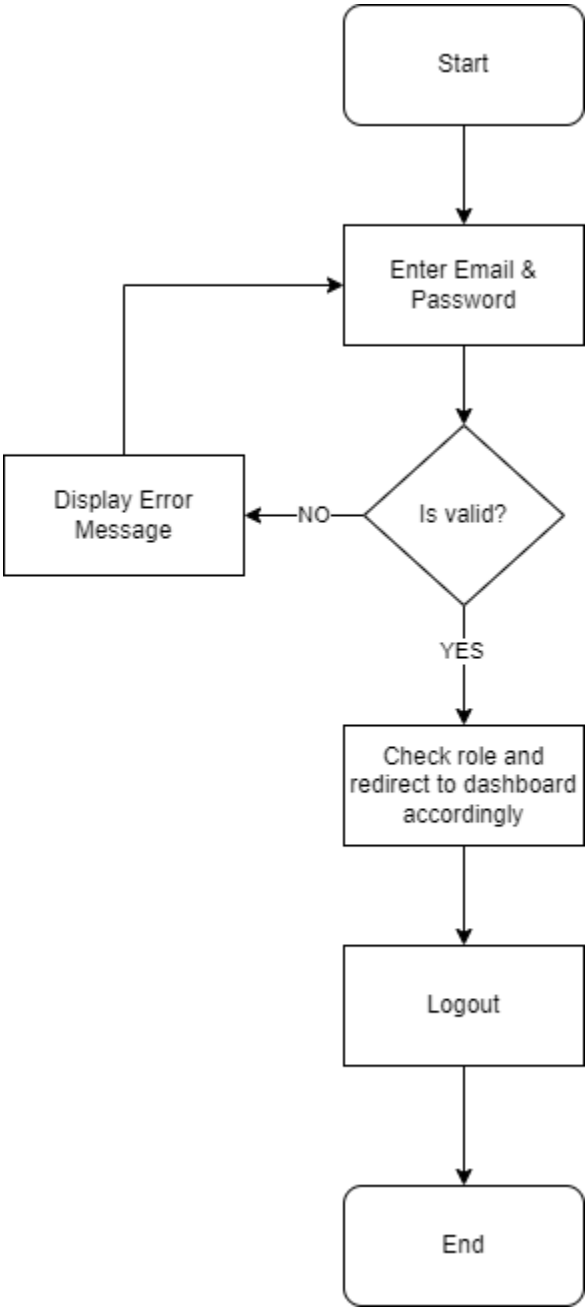
Assignment 2 **Chathushi Jayarathna**

1. Project Design

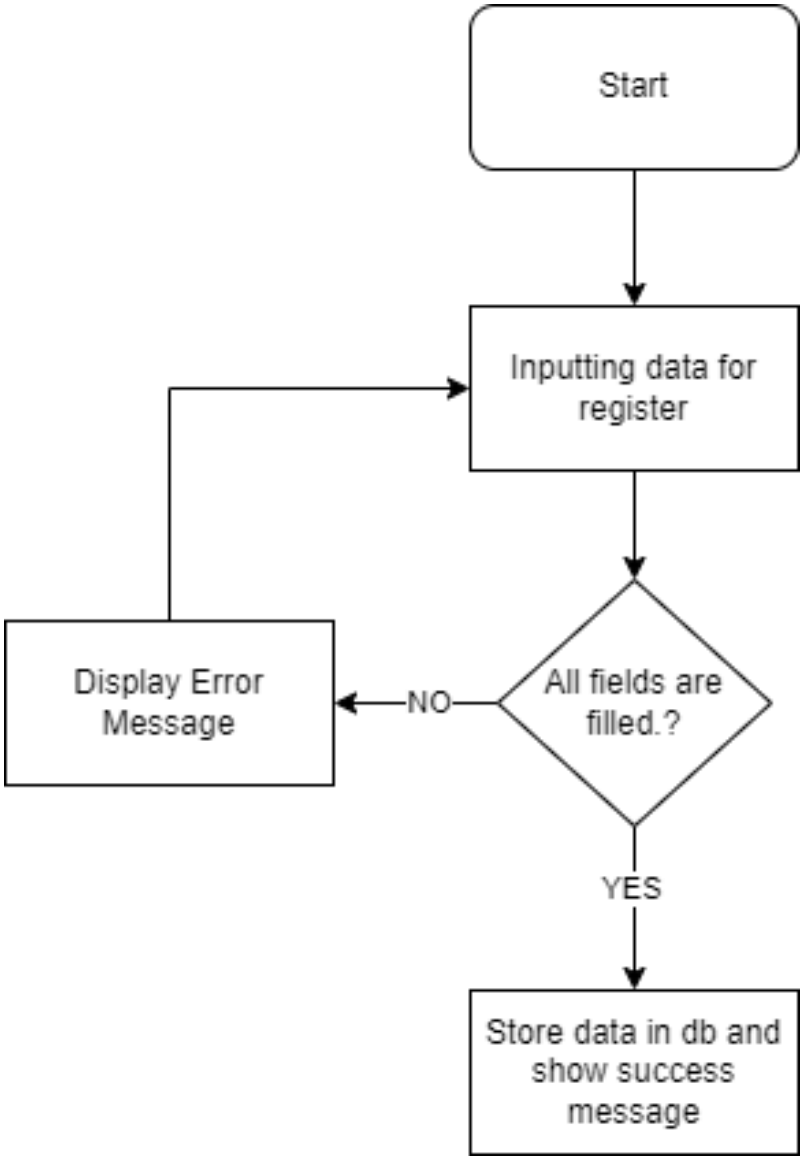
1.1 Application Flowchart

Login Flow



Assignment 2 **Chathushi Jayarathna**

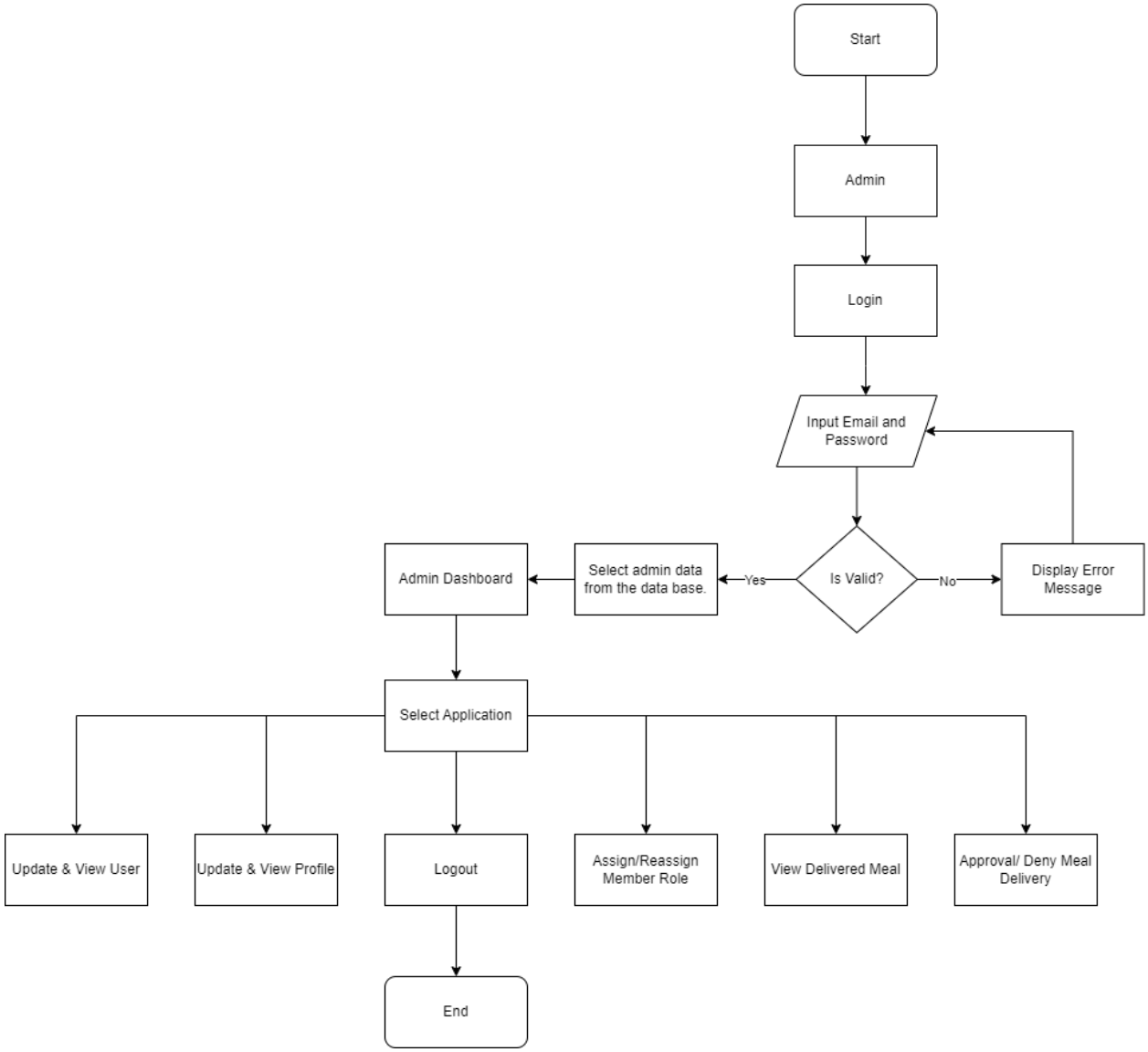
Registration Flow



Assignment 2

Chathushi Jayarathna

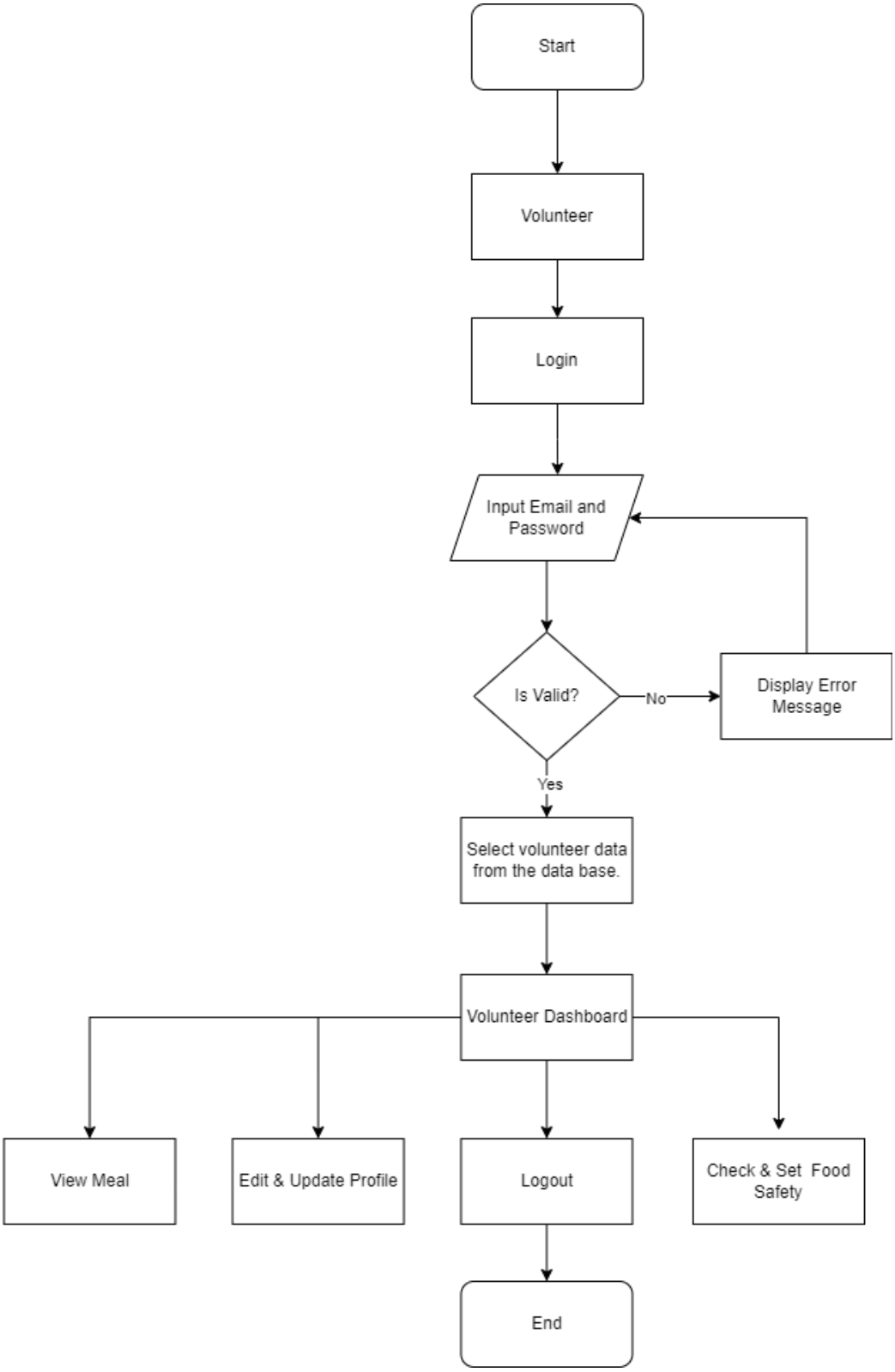
Admin Flow



Assignment 2

Chathushi Jayarathna

Volunteer Flow

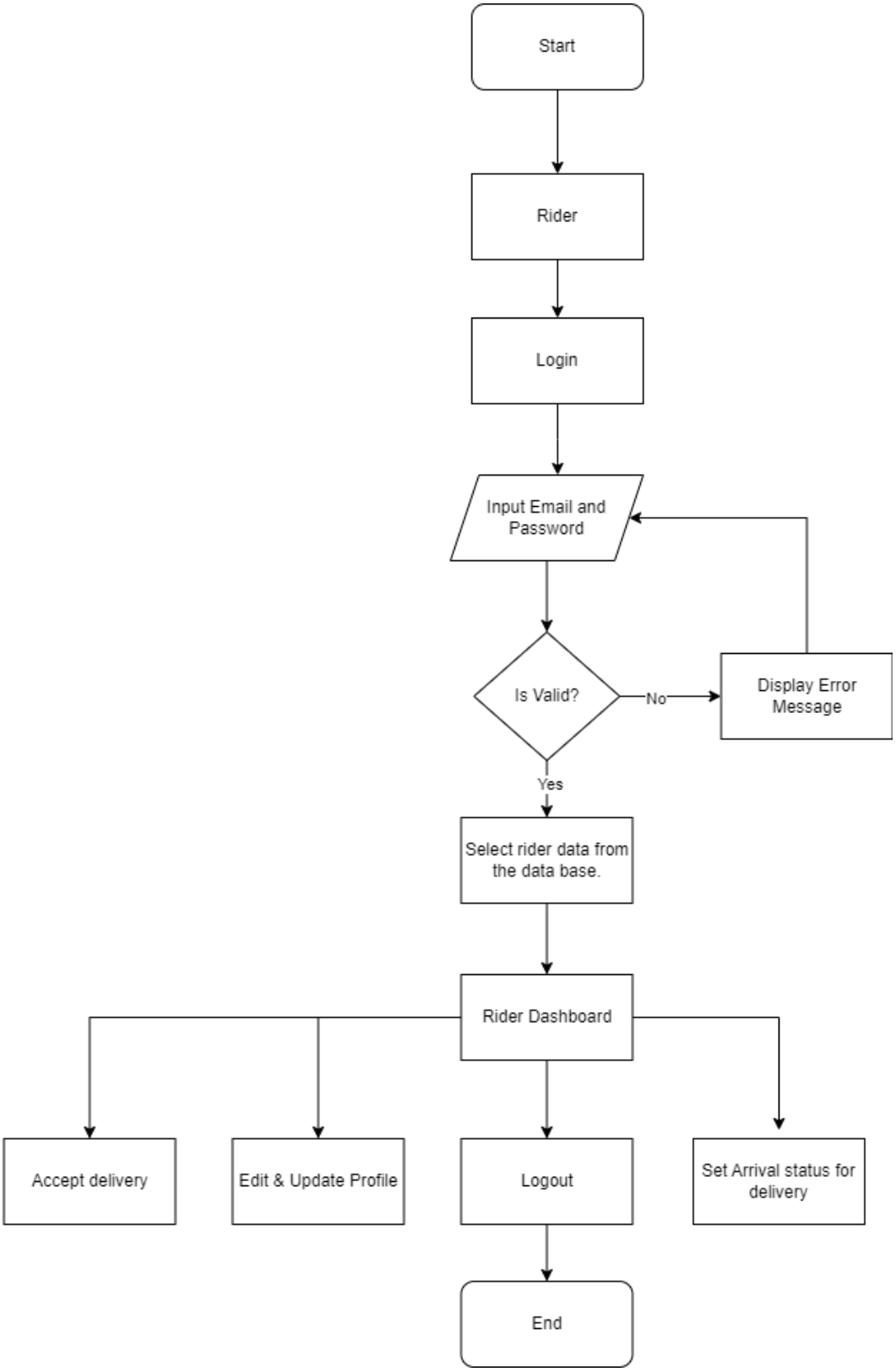


Assignment 2 **Chathushi Jayarathna**

Partner Flow

Assignment 2 **Chathushi Jayarathna**

Rider Flow



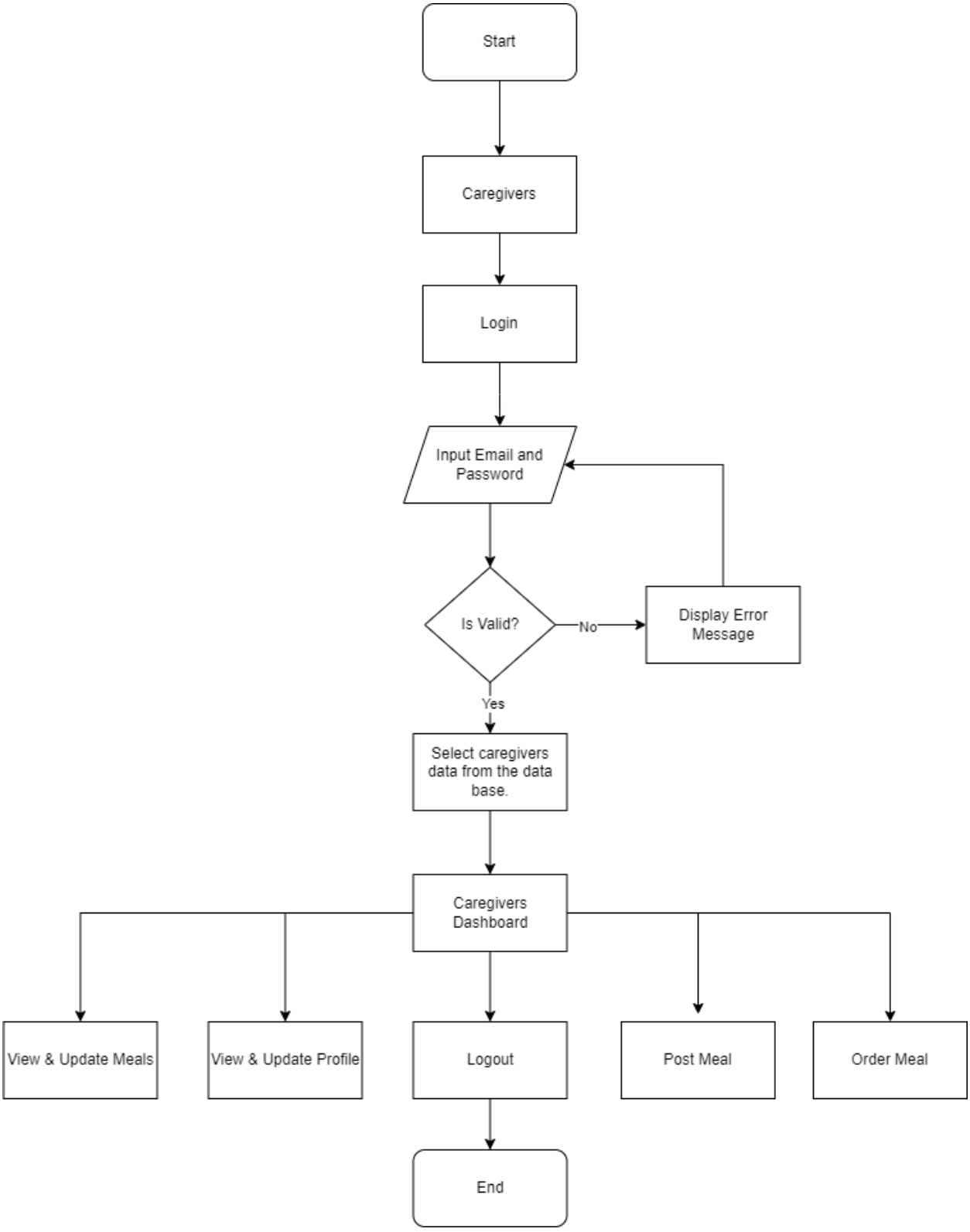
Assignment 2

Chathushi Jayarathna

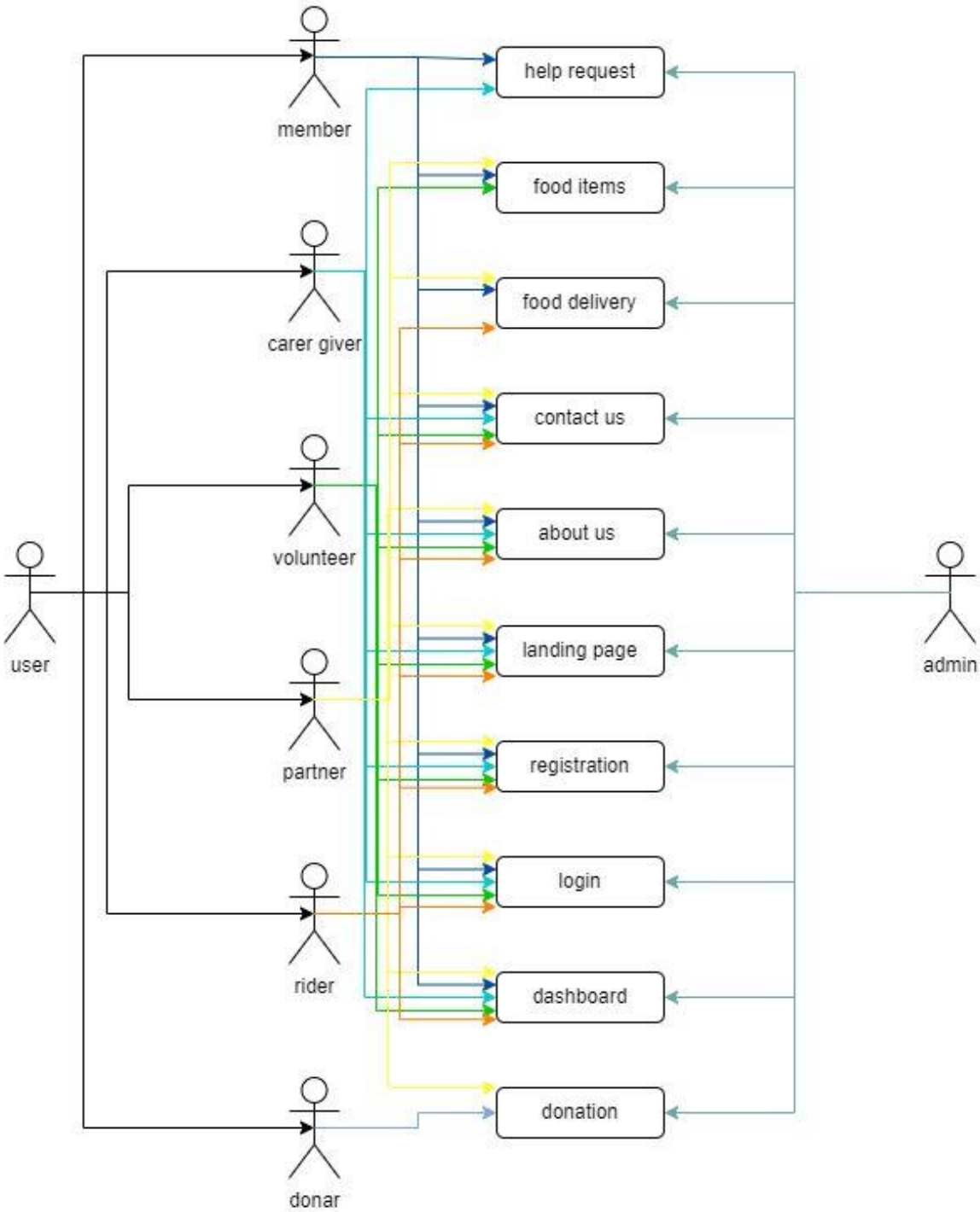
Member Flow

Assignment 2 **Chathushi Jayarathna**

Caregiver Flow



1.2 Use case diagram



1.3 Module Wireframe

Landing Page

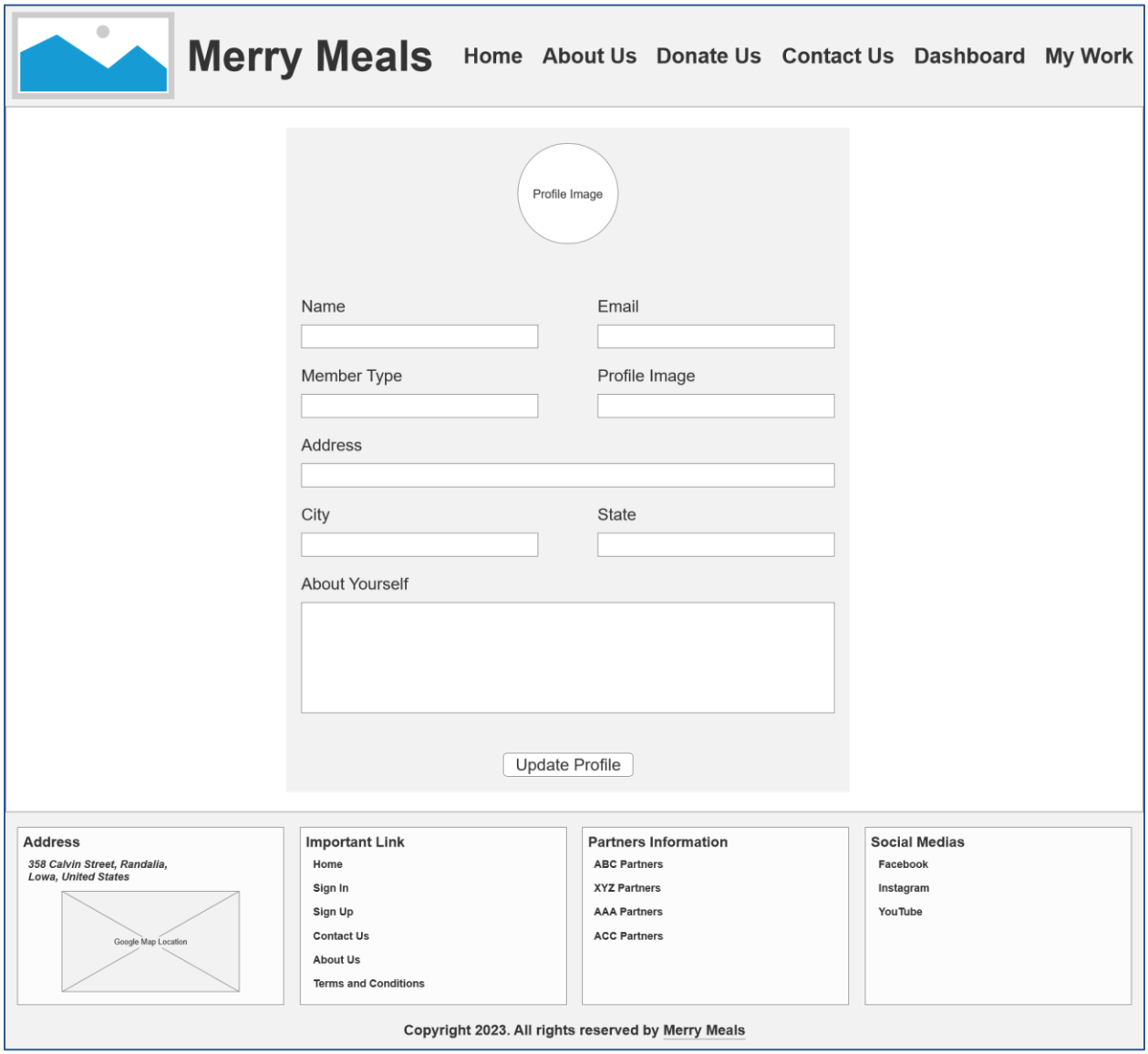
Assignment 2 **Chathushi Jayarathna**

Login

Assignment 2

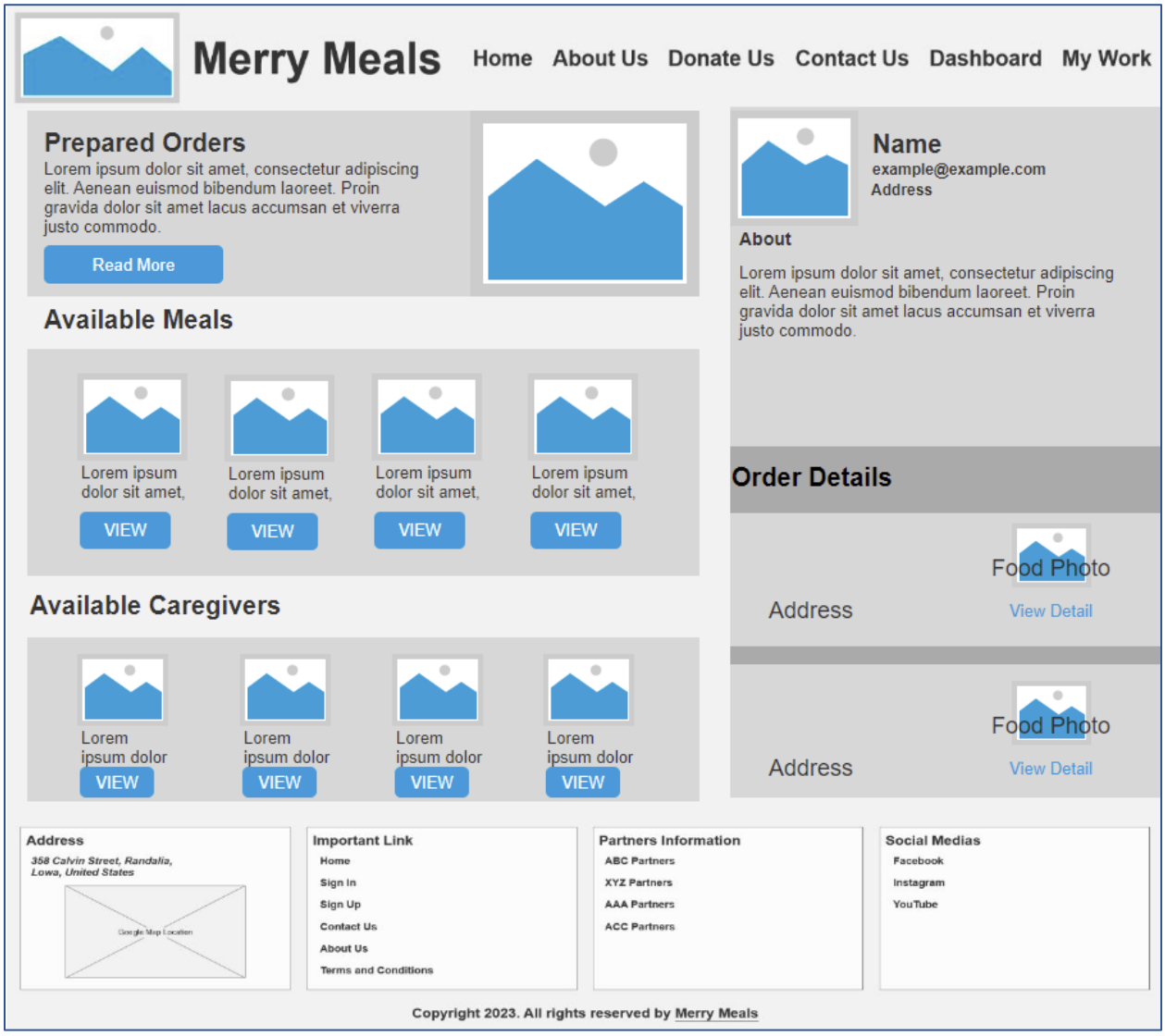
Chathushi Jayarathna

Registration



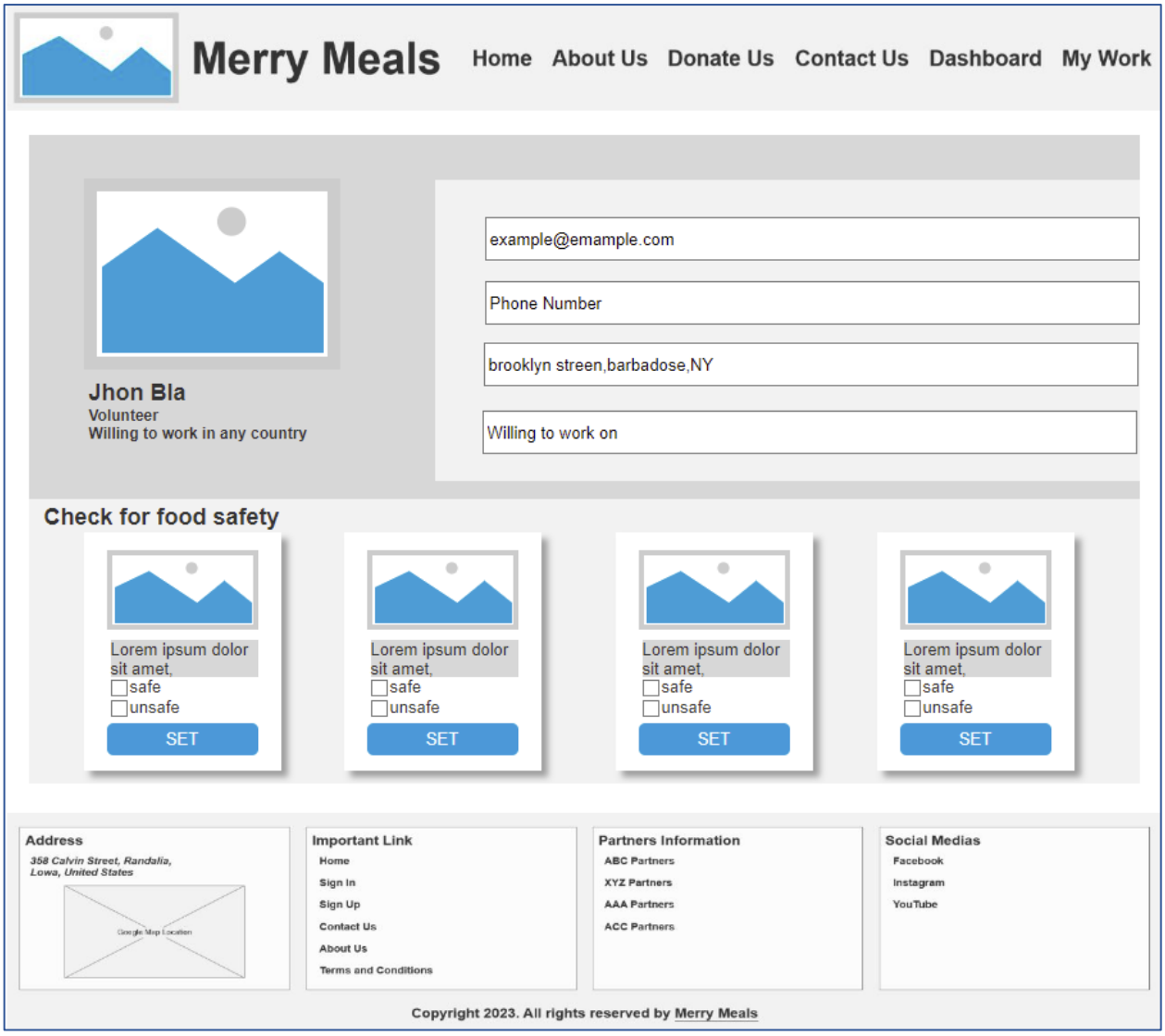
Assignment 2 **Chathushi Jayarathna**

Member Dashboard



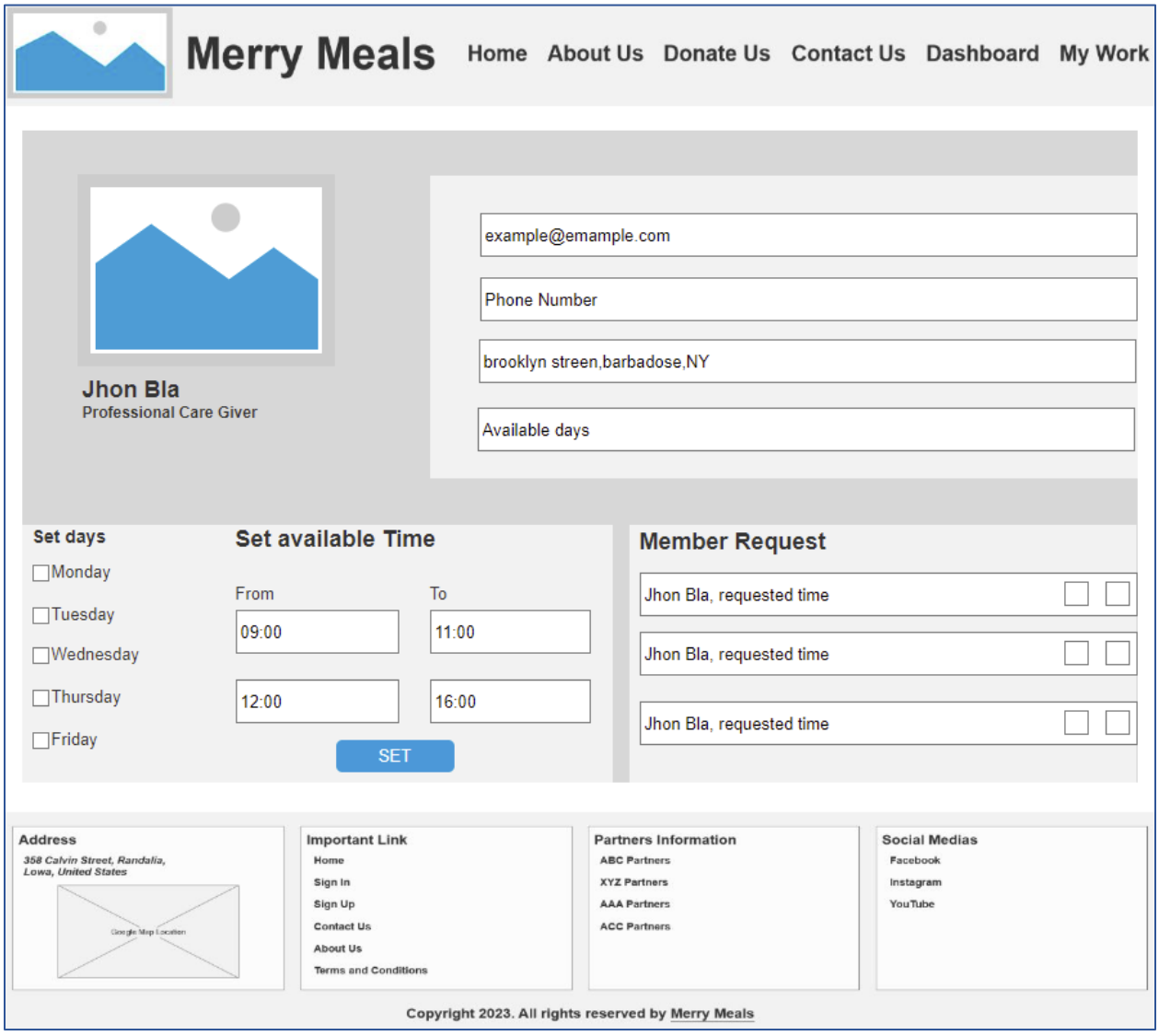
Assignment 2 **Chathushi Jayarathna**

Volunteer Dashboard



Assignment 2 **Chathushi Jayarathna**

Care giver



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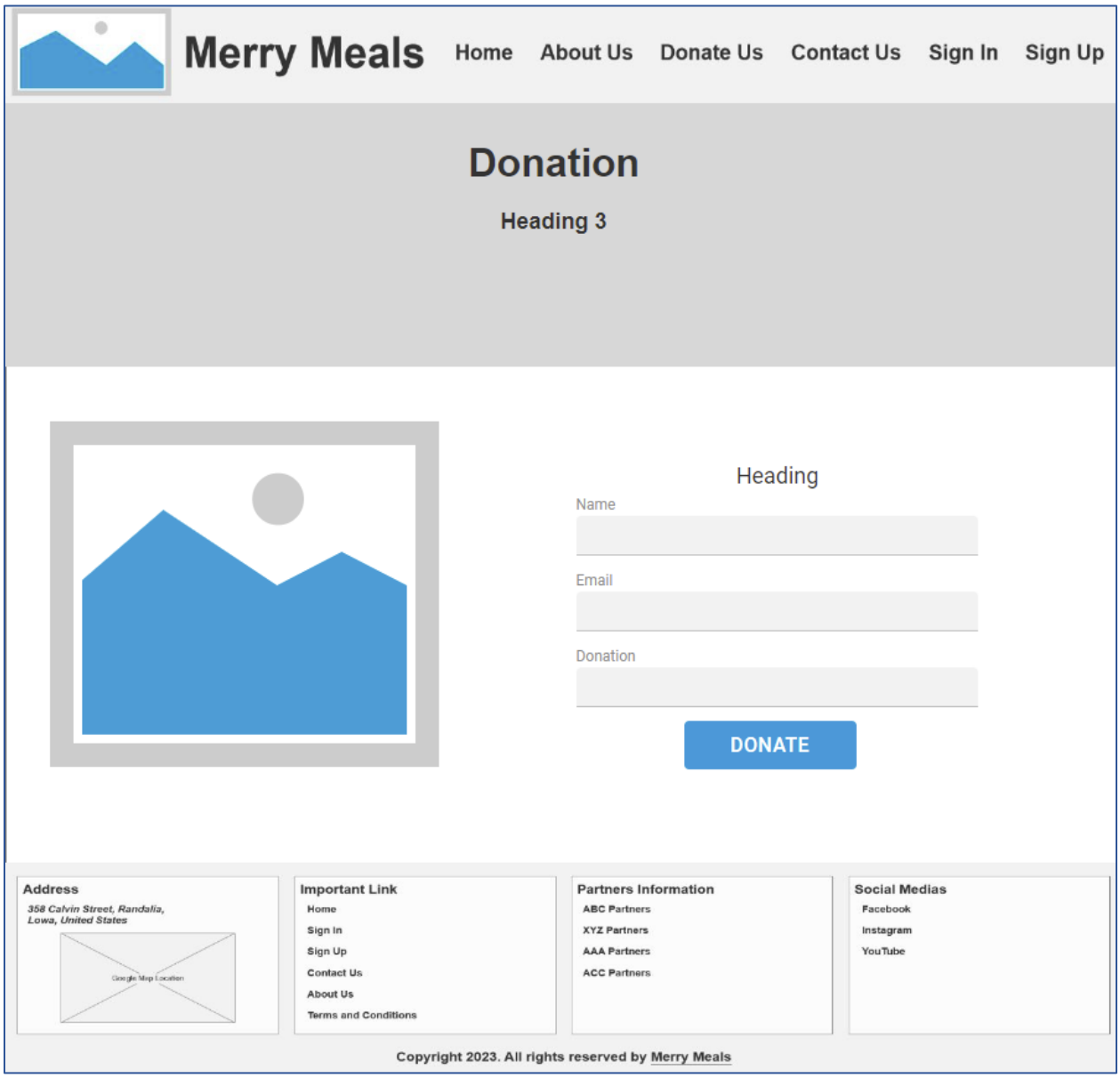
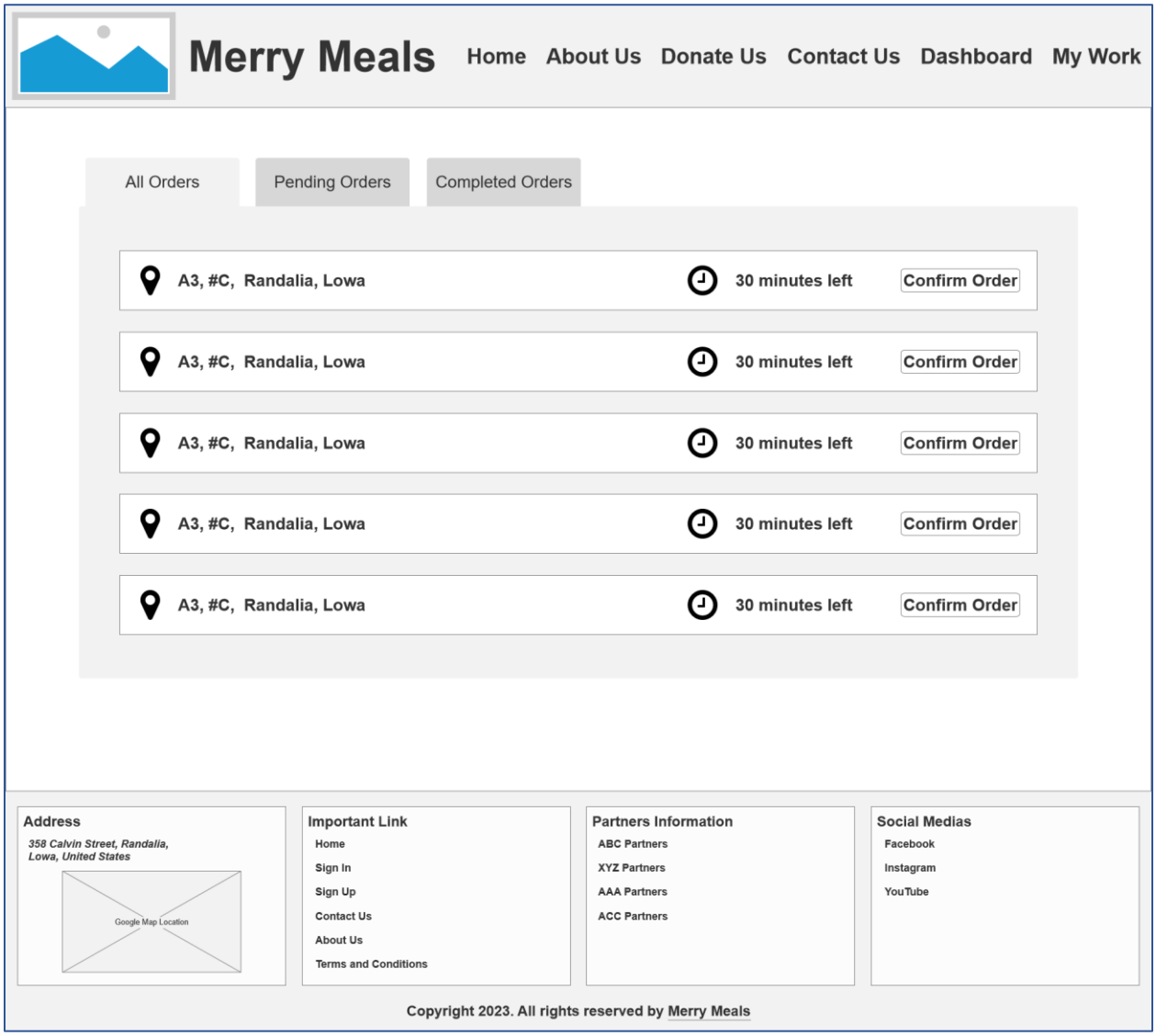
Donation Form



Assignment 2

Chathushi Jayarathna

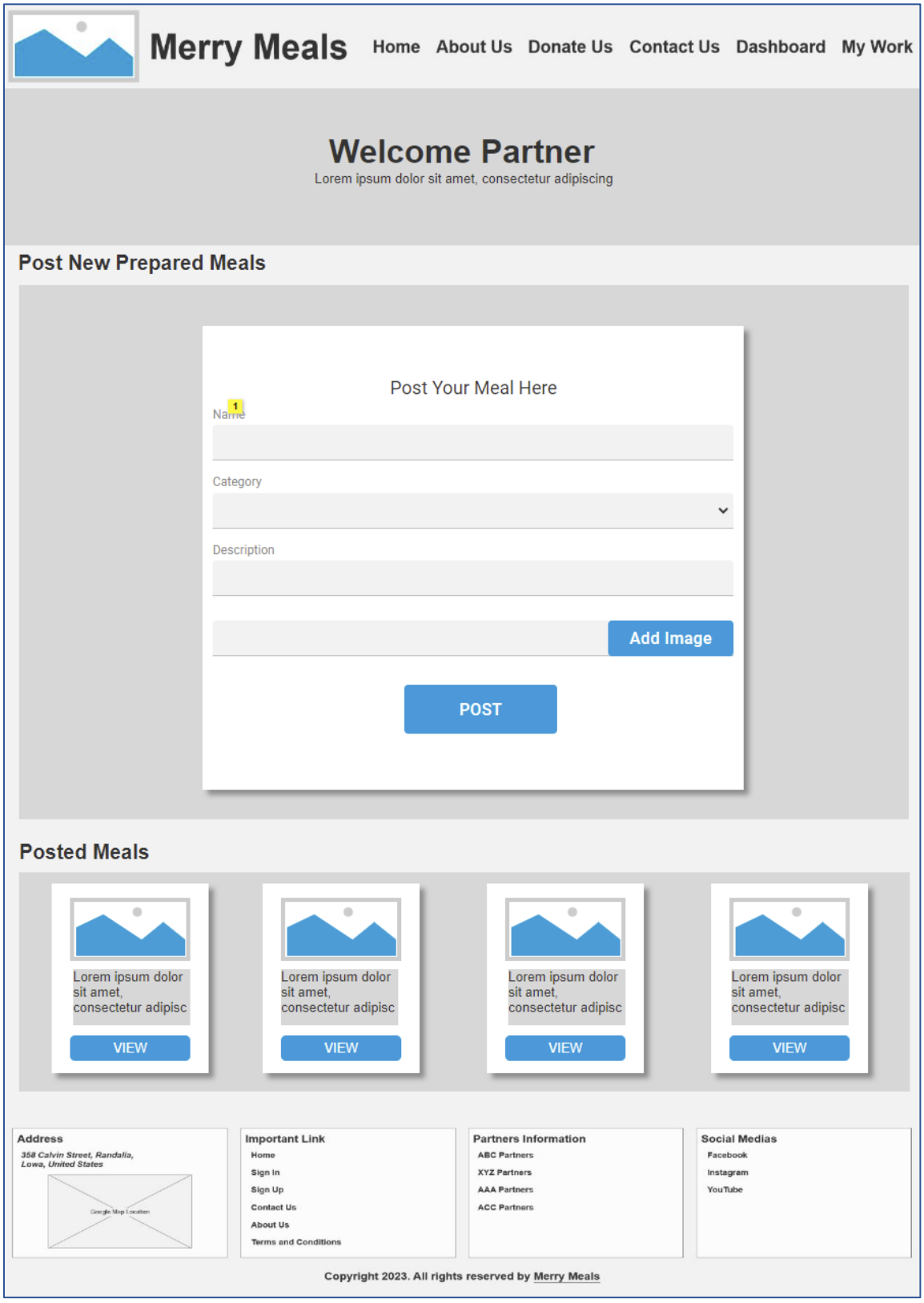
Rider Dashboard



Assignment 2

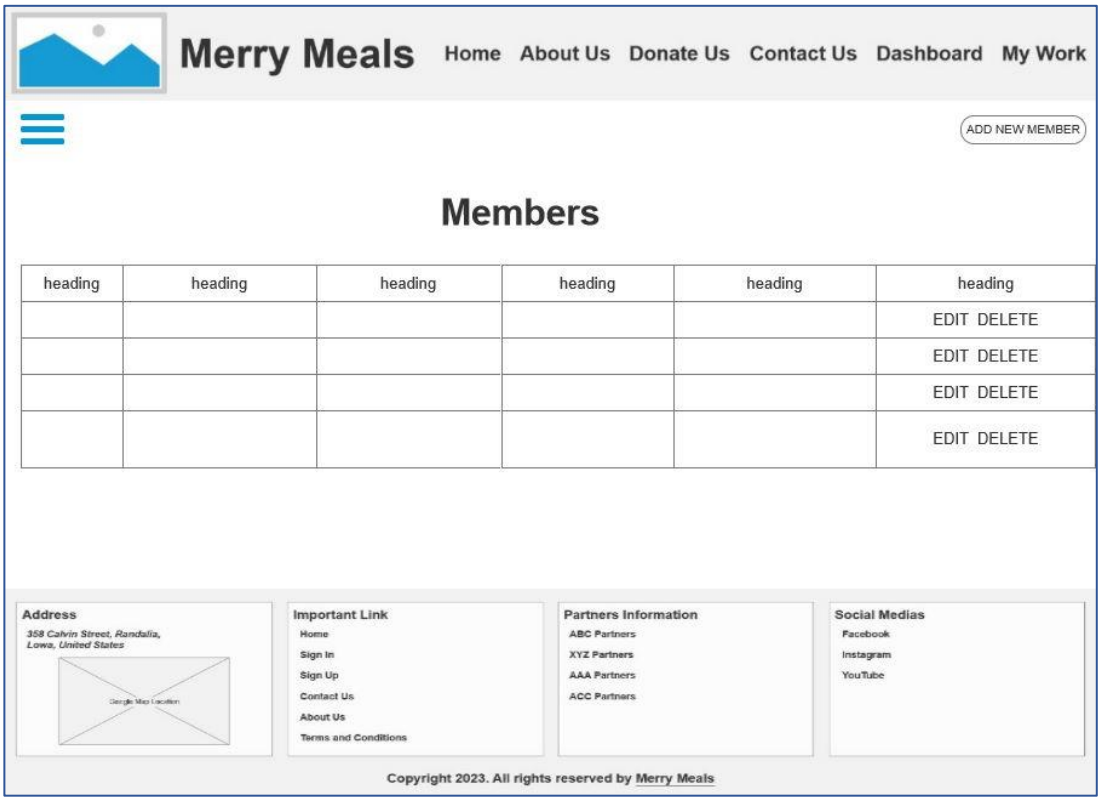
Chathushi Jayarathna

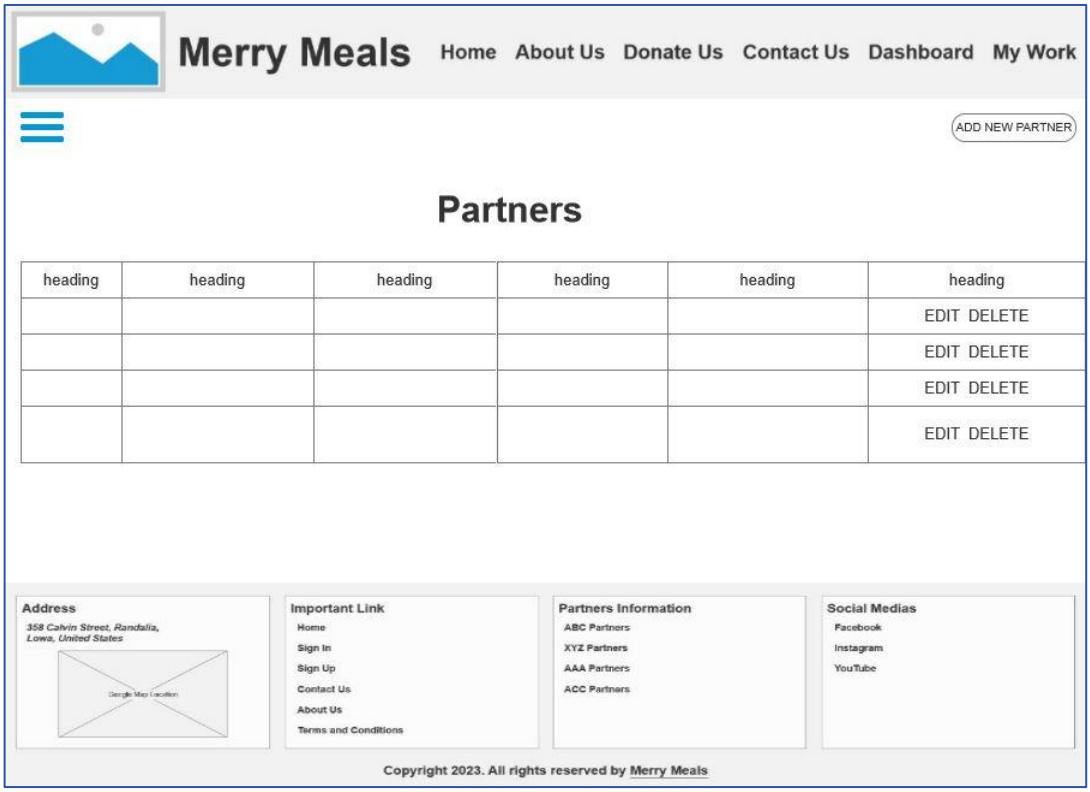
Partner Dashboard



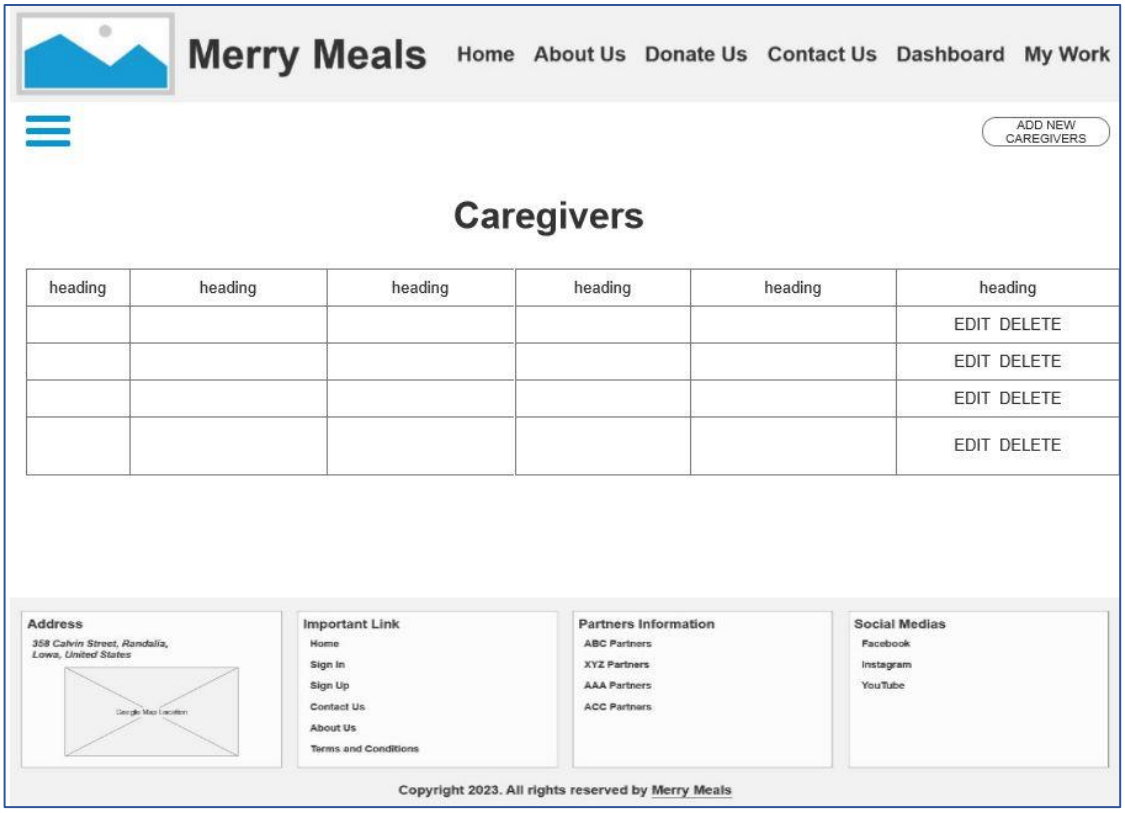
Assignment 2 **Chathushi Jayarathna**

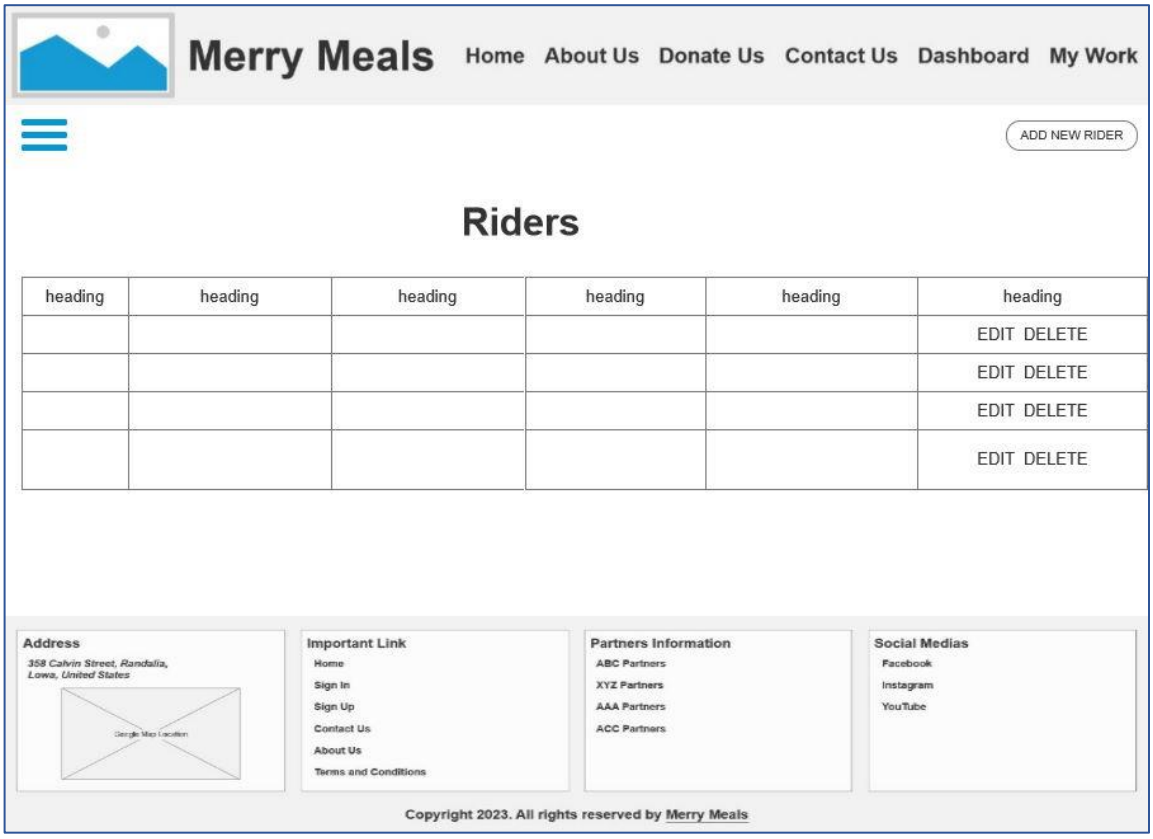
Admin Control panel for Member, Caregiver, Rider, Partner, Meal, Order





Assignment 2 **Chathushi Jayarathna**



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Dashboard
My Work
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Meals
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EDIT DELETE
EDIT DELETE
EDIT DELETE
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Lowa, United States
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Important Link
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XYZ Partners
AAA Partners
ACC Partners
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XYZ Partners
AAA Partners
ACC Partners
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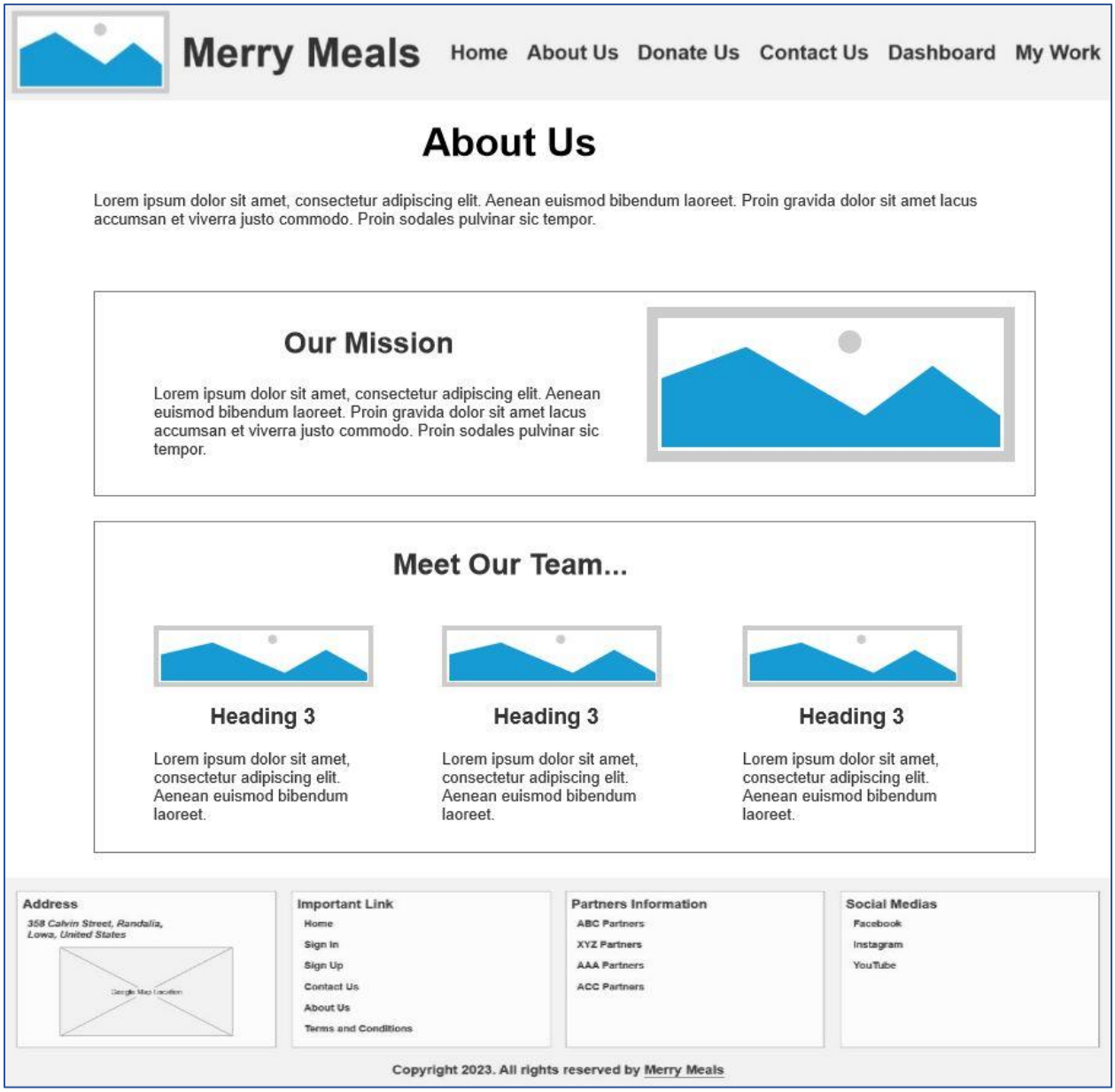
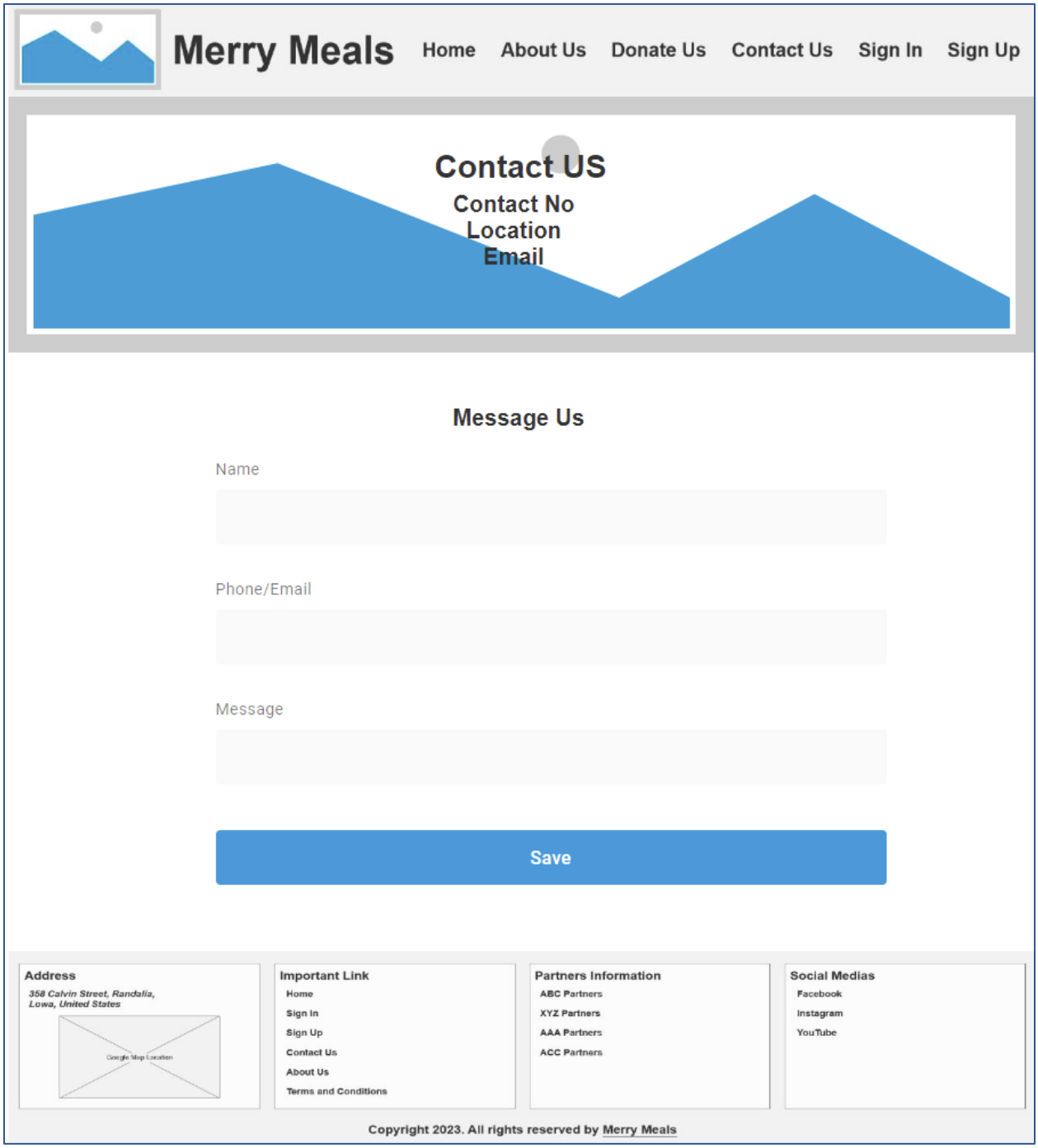
Assignment 2 **Chathushi Jayarathna**

About Us Page

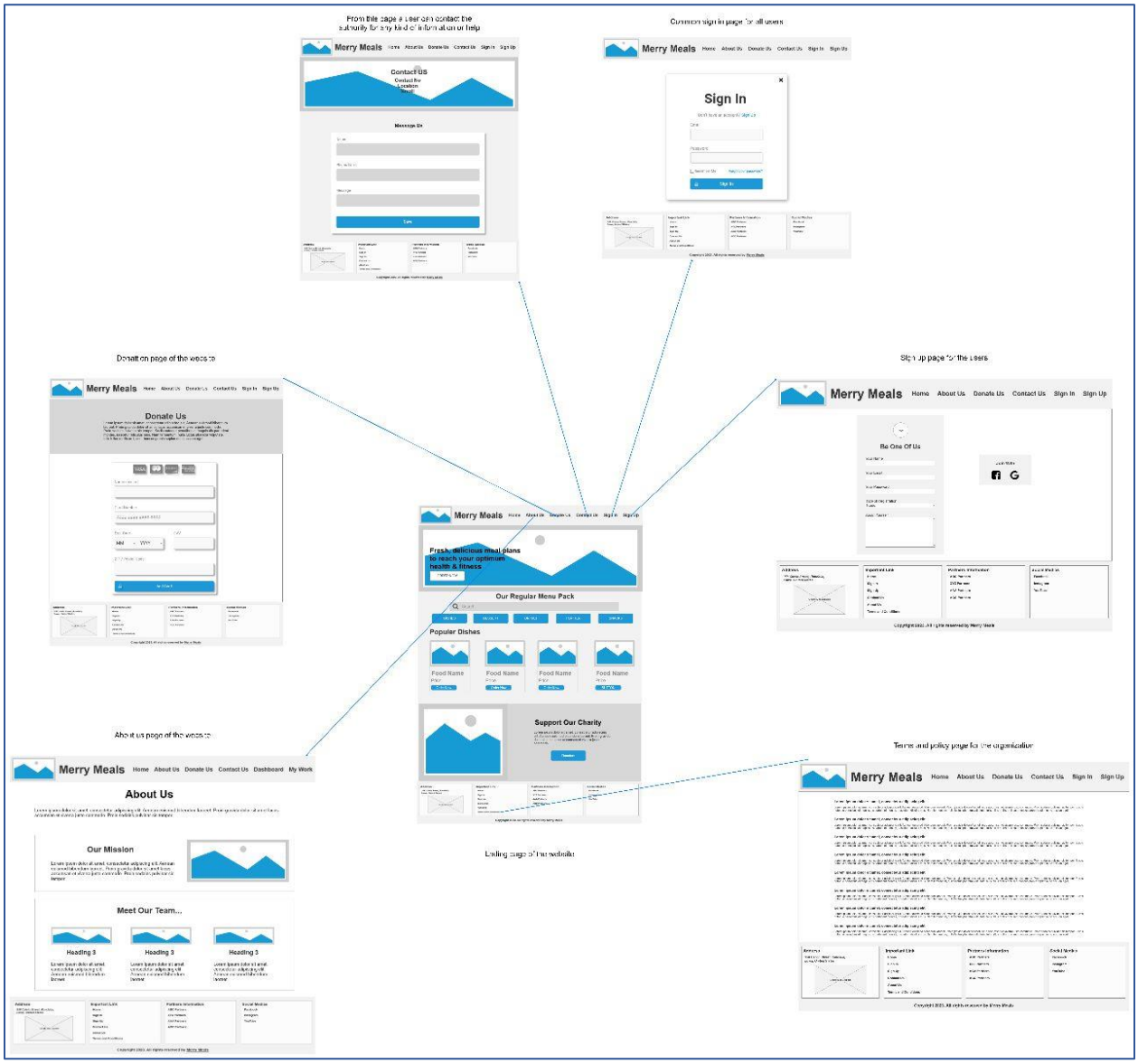


Contact Us Page



1.4 Story Boards

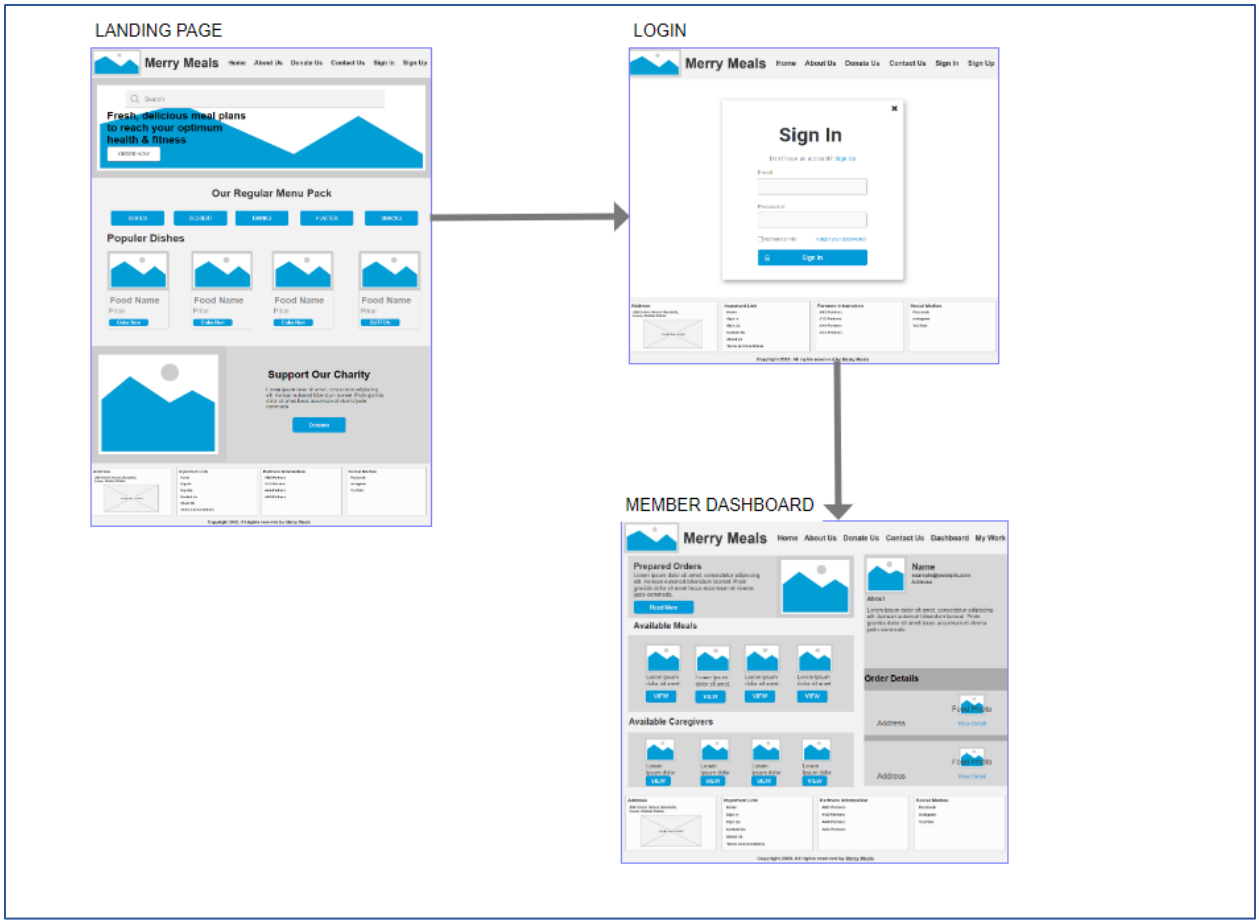
Landing Page



Assignment 2

Chathushi Jayarathna

Member Login



Assignment 2 **Chathushi Jayarathna**

Rider Login

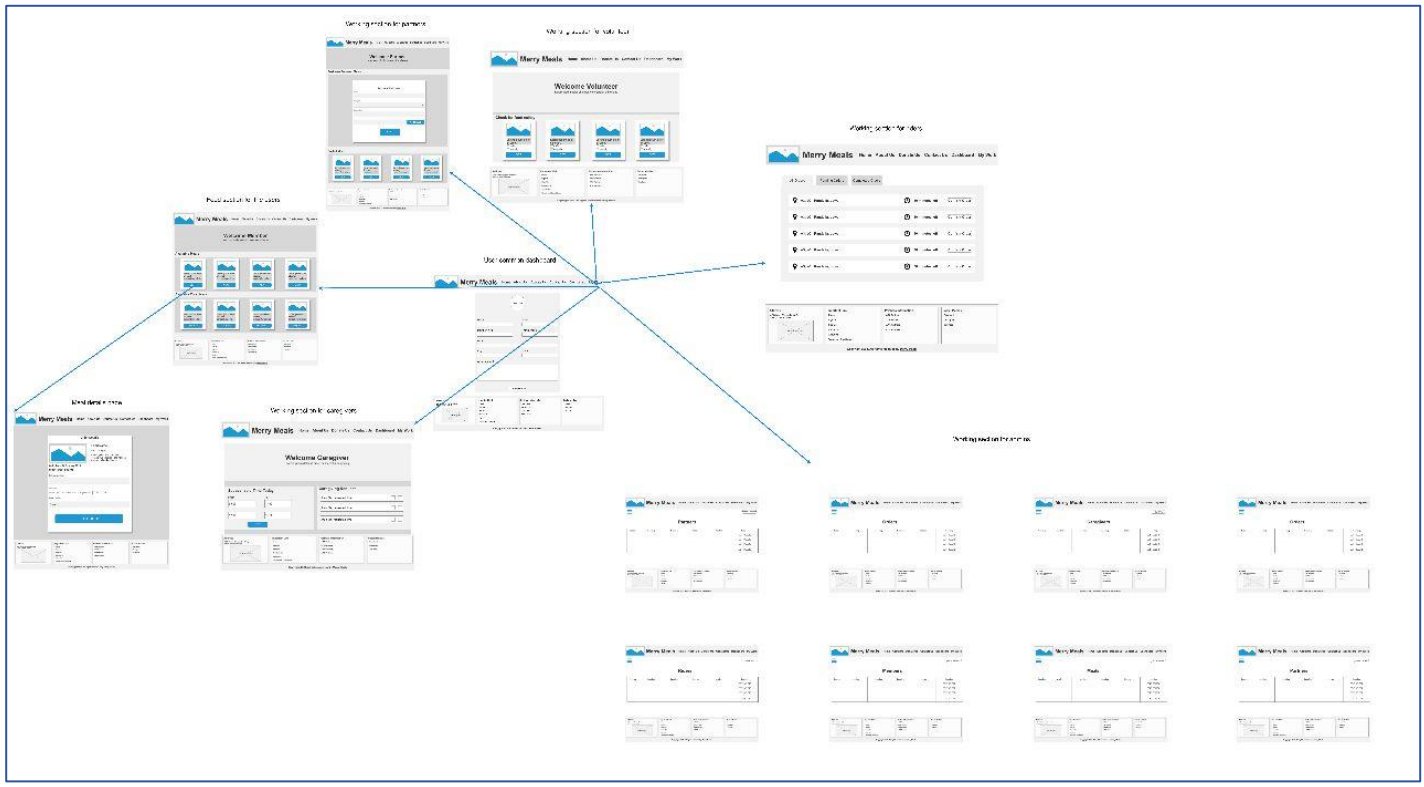
Assignment 2 **Chathushi Jayarathna**

Partner Login

Assignment 2

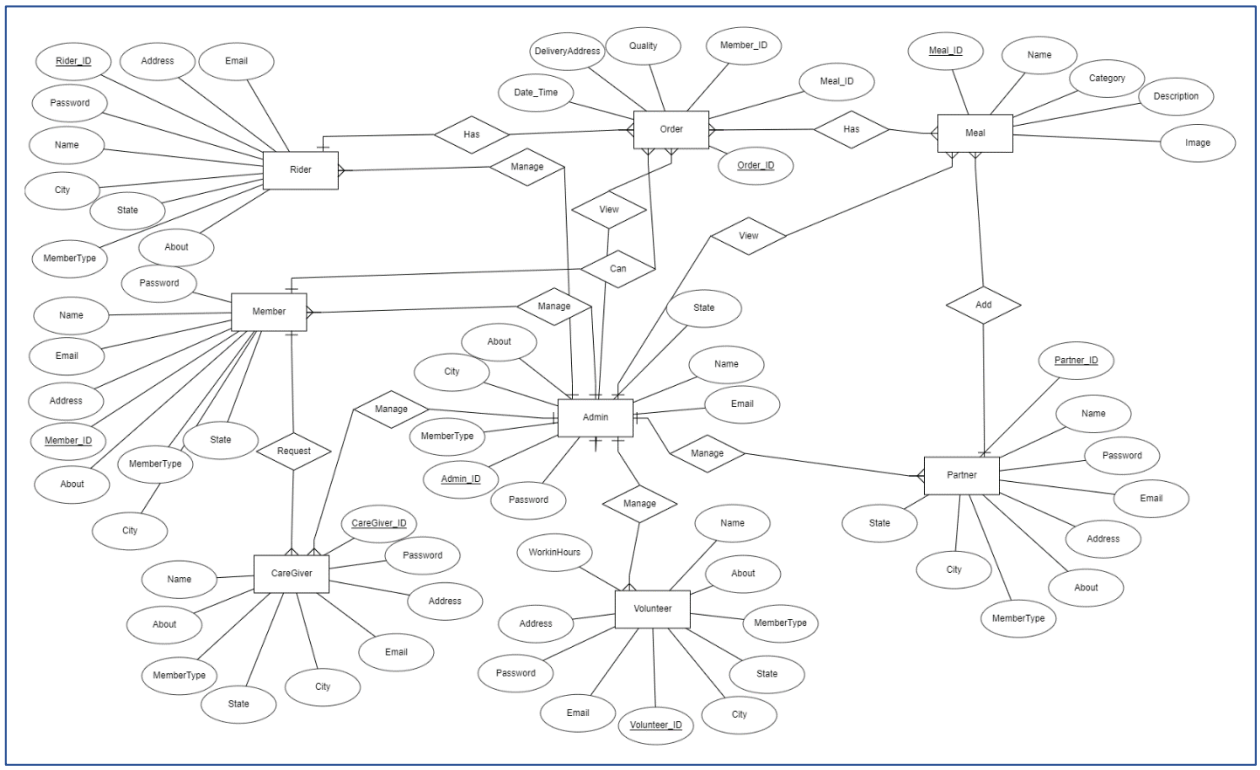
Chathushi Jayarathna

Admin Panel



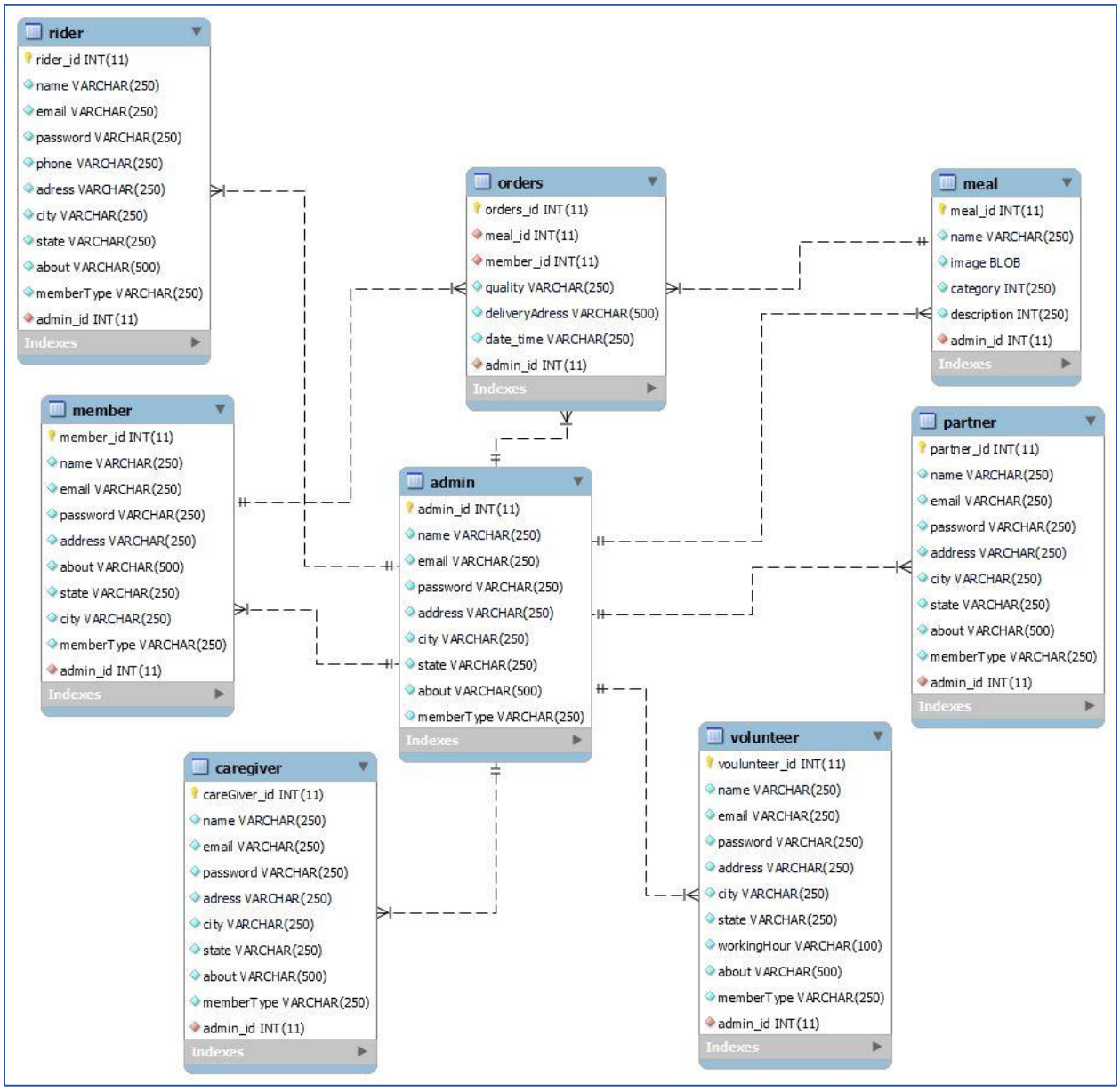
1.5 DB Design: ERD diagram and EERD (Class diagram)

ERD Diagram



Assignment 2 **Chathushi Jayarathna**

EERD

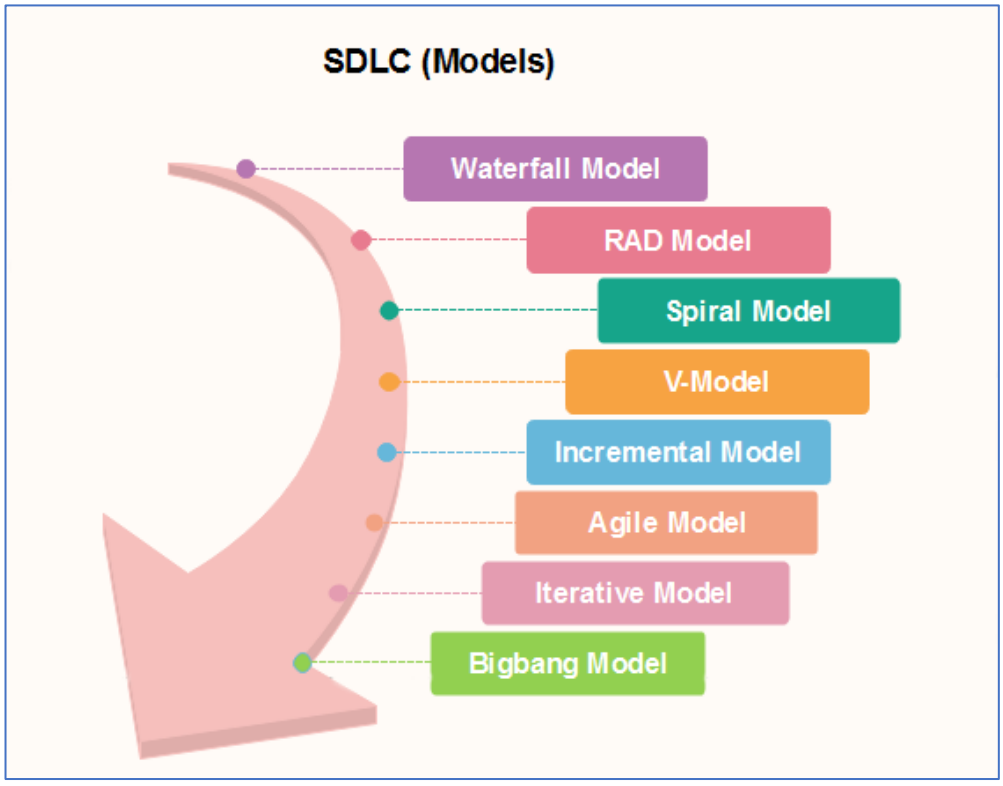


2. SDLC (software development life cycle)

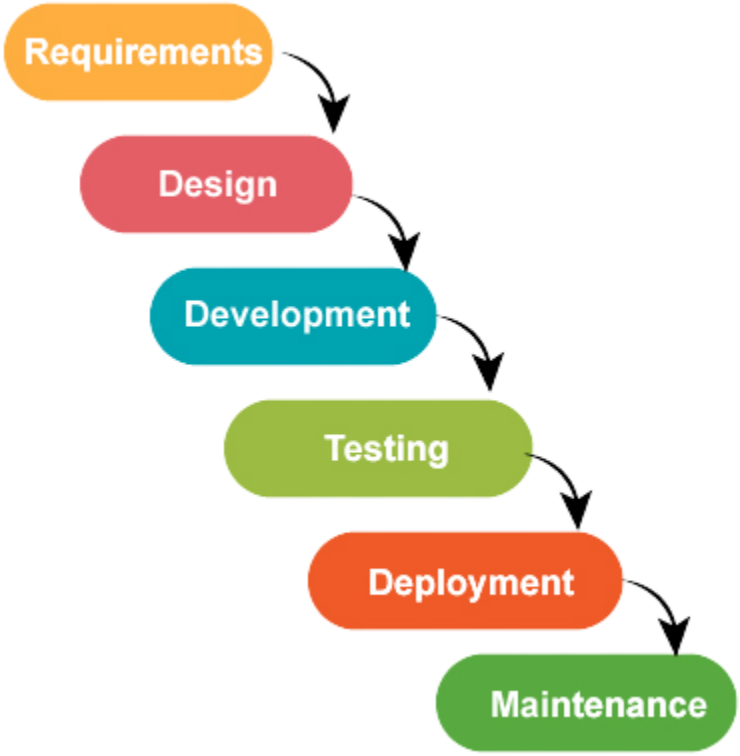
Software Development life cycle (SDLC) is a spiritual model used in project management that defines the stages include in an information system development project, from an initial feasibility study to the maintenance of the completed application.

There are different software development life cycle models specify and design, which are followed during the software development phase. These models are also called "**Software Development Process Models**." Each process model follows a series of phase unique to its type to ensure success in the step of software development.

Here, are some important phases of SDLC life cycle



1) Waterfall Model



A. Requirement & Gathering Analysis

a) Kick-off meetings
b) Identify the Stakeholders
   - Meet the Stakeholders
c) Gather and document the requirements.
d) Set the objective.
e) Prepare Software Requirement Specification Document (SRS)
   - Functional and non-functional
f) Document the Scope
g) Estimate the Cost
h) Allocating Resources
i) Risk Planning
j) Test Planning

B. Design

a) List of Technical requirements

1. Hardware Requirement
- Processor: Minimum 2 GHz, i5
- Ethernet connection (LAN) or a wireless adapter (WI-FI)
- Minimum free storage space: 20GB
- Memory (RAM); Minimum 4GB

2. Software Requirement
- Axure
- Visual Studio Code
- XAAMP
- MySQL Workbench 8.0.30
- Angular

3. Database Requirement
- MySQL Workbench
- PhpMyAdmin
- MySQL Server

b) Create,
- Wireframe
- Storyboard
- Prototypes

(Home Page, Login Page, Registration Page, Forgot Password Page, Forgot Password Confirmation, Page, Forgot Password Thank You Page, Verification Email Page, Registration Thank You, Page, User Profile Page, User Profile Update Page, Search User Page, etc.)

c) Database Design
- ERD (Entity Relational Diagram)
- EERD (Enhanced Entity Relational Diagram)
- Relational Schema

C. Implementation

a) Develop the source code
b) Implement the database

D. Testing

Testing the software against the requirements
- Conduct unit testing and record results
- Conduct integration testing and record results

- Fixed all issues source code

E. Deployment

a) UAT testing
   - Plan
   - Identify and create real-world test scenarios
   - Select the testing team
   - Test and document
   - Update code, Retest, and sign off

b) Fix errors

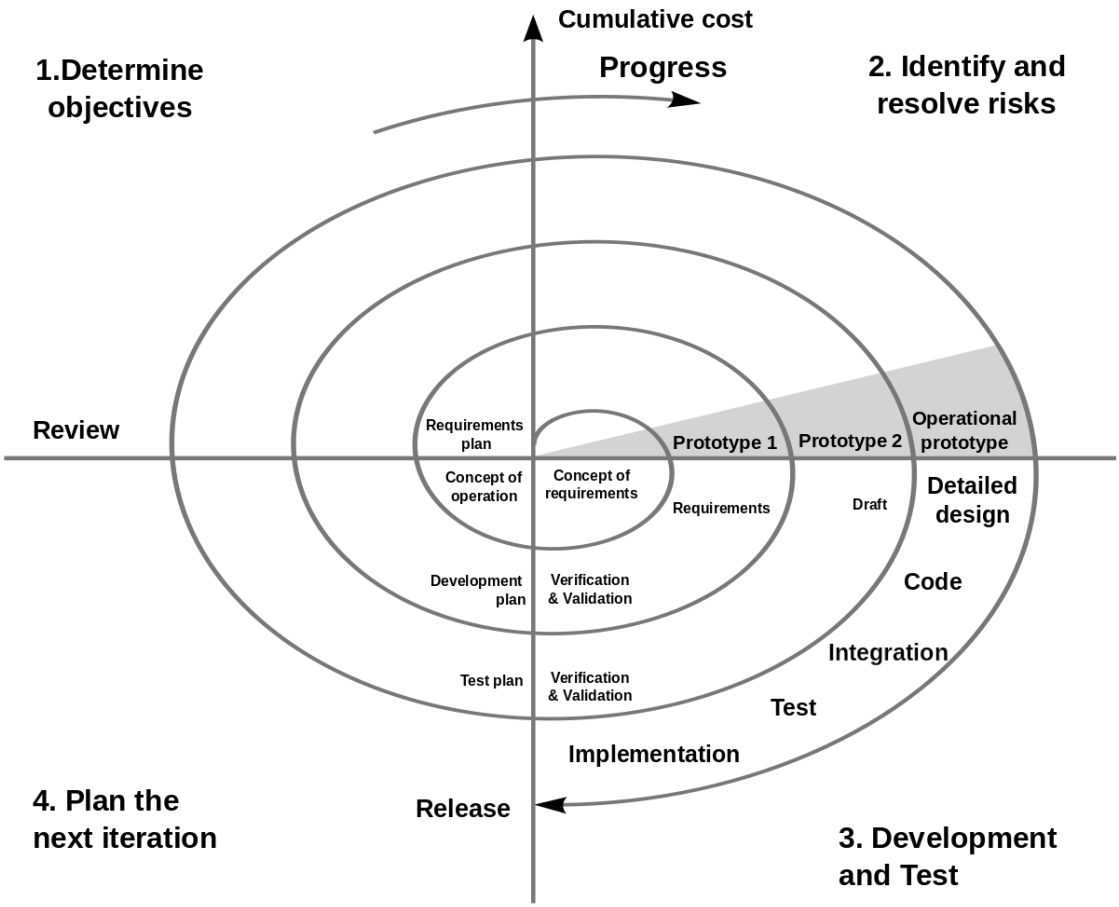
c) Deploy the Website

F. Maintenance

The customer provides feedback on the new software for the project team to look into additionally the project team made two additional testing in the live environment to verify the acceptable deployment

- Provide post-deployment support
- Service level agreement
- Hyper care and support per SLA

2. Spiral Model



A. Planning

a) Identify and gathered the system requirements
b) Understanding the system requirements (Business and System Requirements Specification) by continuous communication between the customer and the system analyst team members
c) Set the objective

Requirements are gathered from customers and objectives are identified, Elaborated, and analyse at the outset

B. Identifying and resolve risks

a) Document the project risk management plan
b) Prepare Software Requirement Document (SRS)
   - Functional and Non-Functional
c) Use Case Document

C. Development and Testing

a) Testing the software against the requirements
   ✓ UAT testing
   - Plan
   - Identify and create real-world test scenarios
   - Select the testing team
   - Test and document
   - Update code, Retest, and sign off

b) Fixed all issues in source code

c) List of Technical requirements

1. Hardware Requirement
- Processor: Minimum 2 GHz, i5
- Ethernet connection (LAN) or a wireless adapter (WI-FI)
- Minimum free storage space: 20GB
- Memory (RAM); Minimum 4GB

2. Software Requirement
- Axure
- Visual Studio Code
- XAAMP
- MySQL Workbench 8.0.30
- Angular

3. Database Requirement
- MySQL Workbench
- PhpMyAdmin
- MySQL Server

b) Create,
- Wireframe
- Storyboard
- Prototypes

(Home Page, Login Page, Registration Page, Forgot Password Page, Forgot Password Confirmation, Page, Forgot Password Thank You Page, Verification Email Page, Registration Thank You, Page, User Profile Page, User Profile Update Page, Search User Page, etc.)

c) Database Design
- ERD (Entity Relational Diagram)
- EERD (Enhanced Entity Relational Diagram)
- Relational Schema

The project team may select a pilot group of users to test the software's user-friendliness or to provide user feedback
If the software does not meet the requirements in the requirement document it is sent back to the software engineers for further implementation

A. Evaluation

a) Identifying, estimating, and observing technical feasibility such as schedule slippage and cost overrun
b) starts with the conceptual design in the baseline spiral and involves the architectural design, logical design of modules, physical product design and final design in the subsequent spirals
c) allow the customer to evaluate the output of the project to data before the project continues to the next spiral

3. Agile Model

A. <u>Iteration 1: Registration Epic (First Module)</u>

I. Requirement Analysis

k) Kick-off meetings
l) Identify the Stakeholders
   - Meet the Stakeholders
m) Gather and document the requirements.
n) Set the objective.
o) Prepare Software Requirement Specification Document (SRS)
   - Functional and non-functional
p) Document the Scope
q) Estimate the Cost
r) Allocating Resources

II. Design

List of Technical requirements

2. Hardware Requirement

4. Processor: Minimum 2 GHz, i5
5. Ethernet connection (LAN) or a wireless adapter (WI-FI)
6. Minimum free storage space: 20GB
7. Memory (RAM); Minimum 4GB

1. Software Requirement

- Axure
- Visual Studio Code
- XAAMP
- MySQL Workbench 8.0.30
- Angular

2. Database Requirement

- MySQL Workbench
- PhpMyAdmin
- MySQL Server

b) Create,

- Wireframe
- Storyboard
- Prototypes

(Registration Page, Verification Email Page, Registration Thank You_

c) Database Design

- ERD (Entity Relational Diagram)
- EERD (Enhanced Entity Relational Diagram)
- Relational Schema

III. Development

When the team defines the requirements, the work begins. Designers and developers start working on their project, which aims to deploy a working product. The product will undergo various stages of improvement, so it includes simple, minimal functionality.

a) Develop Source code
b) Implement the database

IV. Testing

a) Test the system to ensure the code is clean
b) Conduct integration testing and record results.
c) Fixed all troubles in source code

V. Deployment

After releasing the registration epic, the last step is feedback. In this, the team receives feedback about the registration epic and works through the feedback.

a) UAT Testing
b) Fix errors
c) Deploy the Registration epic

B. Iteration 2: Login Epic (Second Module)

I. Requirement Analysis

a) Kick-off meetings
b) Identify the Stakeholders
   - Meet the Stakeholders
c) Gather and document the requirements.
d) Set the objective.
e) Prepare Software Requirement Specification Document (SRS)
   - Functional and non-functional
f) Document the Scope
g) Estimate the Cost
h) Allocating Resources

II. Design

a) List of Technical requirements

1. Hardware Requirement

8. Processor: Minimum 2 GHz, i5
9. Ethernet connection (LAN) or a wireless adapter (WI-FI)
10. Minimum free storage space: 20GB
11. Memory (RAM); Minimum 4GB

2. Software Requirement
   - Axure
   - Visual Studio Code
   - XAAMP
   - MySQL Workbench 8.0.30

- Angular

3. Database Requirement
    - MySQL Workbench
    - PhpMyAdmin
    - MySQL Server

a) Create,
    - Wireframe
    - Storyboard
    - Prototypes

(Login Page, Forget Password Page, Email Verification, Forget Password Thank You Page)

b) Database Design
    - ERD (Entity Relational Diagram)
    - EERD (Enhanced Entity Relational Diagram)
    - Relational Schema

III. Development

When the team defines the requirements, the work begins. Designers and developers start working on their project, which aims to deploy a working product. The product will undergo various stages of improvement, so it includes simple, minimal functionality.

a) Develop Source code
b) Implement the database

IV. Testing

a) Test the system to ensure the code is clean
b) Conduct integration testing and record results.
c) Fixed all troubles in source code

V. Deployment

After releasing the Login epic, the last step is feedback. In this, the team receives feedback about the login epic and works through the feedback.

c) UAT Testing
d) Fix errors
e) Deploy the Registration epic

C. Iteration 3: Forgot Password Epic (Third Module)

I Requirement Analysis

a) Kick-off meetings
b) Identify the Stakeholders
    - Meet the Stakeholders
c) Gather and document the requirements.
f) Set the objective.
g) Prepare Software Requirement Specification Document (SRS)
    - Functional and non-functional
h) Document the Scope
i) Estimate the Cost
j) Allocating Resources

II Design

a) List of Technical requirements

1. Hardware Requirement
- Processor: Minimum 2 GHz, i5
- Ethernet connection (LAN) or a wireless adapter (WI-FI)
- Minimum free storage space: 20GB
- Memory (RAM); Minimum 4GB

2. Software Requirement
- Axure
- Visual Studio Code
- XAAMP
- MySQL Workbench 8.0.30
- Angular

3. Database Requirement
- MySQL Workbench
- PhpMyAdmin
- MySQL Server

b) Create,
    - Wireframe

- Storyboard
- Prototypes

(Forgot Password Page, Verification Email, Forgot Password Thank You Page)

c) Database Design

12. ERD (Entity Relational Diagram)
13. EERD (Enhanced Entity Relational Diagram)
14. Relational Schema

III Development

When the team defines the requirements, the work begins. Designers and developers start working on their project, which aims to deploy a working product. The product will undergo various stages of improvement, so it includes simple, minimal functionality.

a) Develop Source code
b) Implement the database

IV Testing

a) Test the system to ensure the code is clean
b) Conduct integration testing and record results.
c) Fixed all troubles in source code

V Deployment

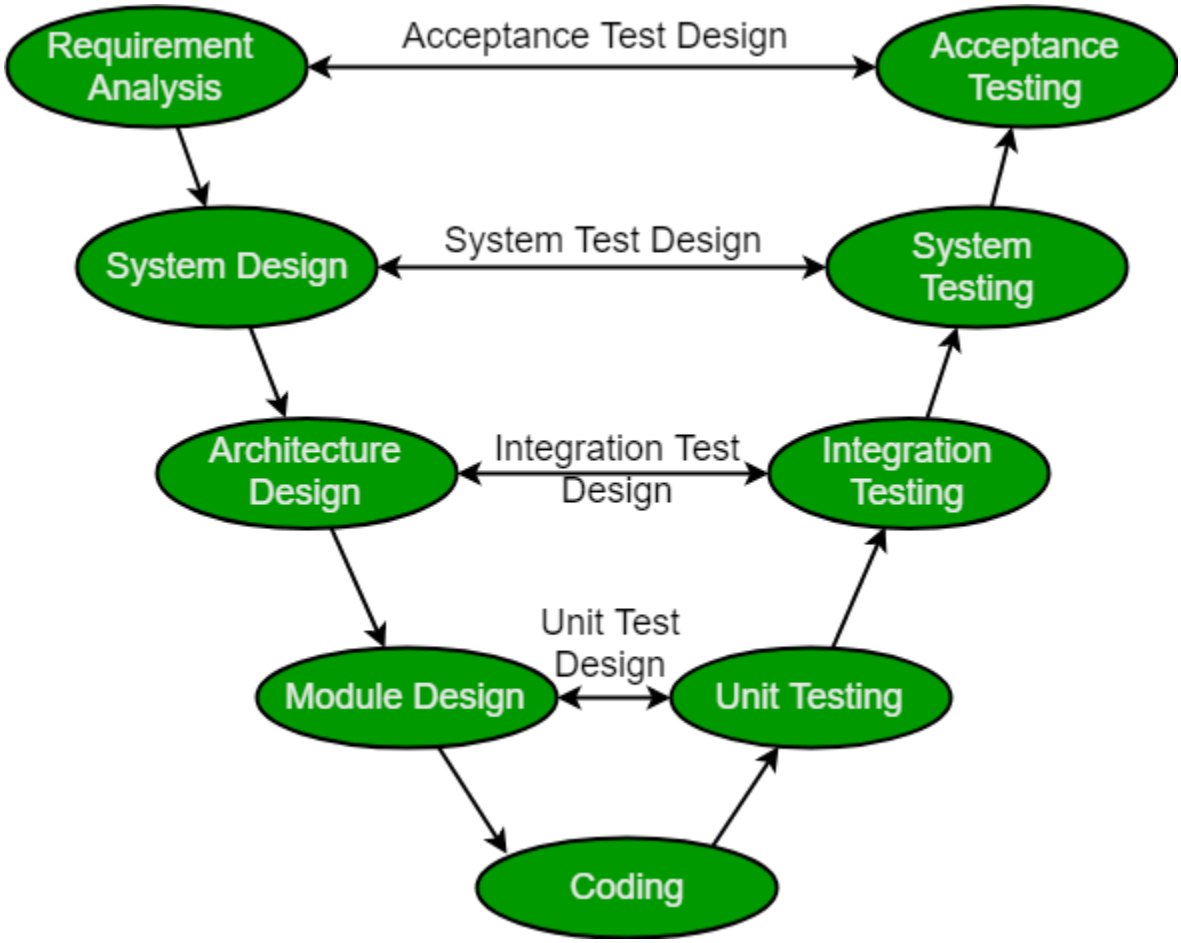
After releasing the Forgot Password epic, the last step is feedback. In this, the team receives feedback about the Forgot Password epic and works through the feedback.

a) UAT Testing
b) Fix errors
c) Deploy the Registration epic

Additional Support

- Set up the master team, arrange the meeting and remove obstacles to the process

4. V-Model



I. Requirement Analysis

a) Kick-off meetings
b) Identify the Stakeholders
   - Meet the Stakeholders
c) Gather and document the requirements.
d) Acceptance test design planning

II. Architecture Design

a) List of Technical requirements

1. Hardware Requirement
- Processor: Minimum 2 GHz, i5
- Ethernet connection (LAN) or a wireless adapter (WI-FI)
- Minimum free storage space: 20GB
- Memory (RAM); Minimum 4GB

2. Software Requirement
- Axure
- Visual Studio Code
- XAAMP
- MySQL Workbench 8.0.30
- Angular

3. Database Requirement
- MySQL Workbench
- PhpMyAdmin
- MySQL Server

III. Design

a) Create,
- Wireframes
- Storyboards
- Prototypes

(Home Page, Login Page, Registration Page, Forgot Password Page, Forgot Password Confirmation, Page, Forgot Password Thank You Page, Verification Email Page, Registration Thank You Page, User Profile Page, User Profile Update Page, Search User Page etc.)

b) Business process Diagram
Create a diagram that depicts a directed flow of activities that are specified by using a subset of Business Process Modelling Notation

c) Database Design
- ERD (Entity Relational Diagram)
- EERD (Enhanced Entity Relational Diagram)
- Relational Schema

IV. Implementation

a) Develop the source code

V. Unit Testing

d) Prepare and Review the UT
e) Make Test cases and Scripts
f) Test Source codes

VI. Integration Testing

a) Prepare the test plan
b) Design test cases, test scenarios, use cases and scripts
c) Run tests after unit integration
d) Detect, report and fix errors.
e) Retest functionalities after fixing bugs
f) Repeat the process until all bugs are found and fixed

VII. System Testing

a) Setup test environment
b) Generate Test cases
c) Generate testing data
d) Execute test cases
e) Defect Reporting
f) Regression testing
g) Log defects
h) Retest

VIII. Acceptance Testing

a) Business Requirement Analysis
b) Design Acceptance Test Plan
c) Design and review acceptance test
d) Acceptance test bed set up
e) Acceptance test data set up
f) Acceptance test execution
g) Business decision

Advantages and Disadvantages of SDLC Models

SDLC Model	Advantages	Disadvantages
Waterfall Model	• Easy to understand • Easy to manage • Has fewer production issues • Better budget management	• It is not flexible • Does not handle unexpected risk well • Not good for complex or long-term projects • Difficult to capture all requirements upfront
Spiral Model	• Risk Handling • Flexible in Requirements • Customer Satisfaction	• Expensive • Too much dependable on Risk Analysis • Difficulty in time management
Agile Model	• Save time and Money • Flexible and Adaptable • It reduces total development time	• Planning can be less concrete • Documentation can be neglected
V-Model	• Simple and easy to use • Protective defect tracking	• Poor resource allocation • Need crystal clear requirements

SDLC Chosen Method = Spiral Method

When the word 'risk' comes to mind first then, the best methodology for developing a website is the 'Spiral Model' because the critical benefit of the spiral model is the risk assessment and analysis that are also necessary for this system and the prototype that will be an excellent approach to convey the system's expectations. According to the project requirements it is a small project with limited time period while the cost is not that much great to go with SDLC model like agile and V-Shaped. Agile is used for vast enterprise application where things are updating on daily basic.

Assignment 2 **Chathushi Jayarathna**

Technologies:

- Front-End Tech: ReactJS
- Back-end Tech.: Spring boot.
- Database: MySQL
- IDEs: Spring Tool Suite, Visual Studio Code

System Requirements

- **Operating System**
  - Windows 7 or above
  - Android 7 or above
  - Mac 9 or above
  - iOS 12 or above

- Hardware Requirements
  - Intel Xeon 6^{TH} Gen or Newer CPU
  - Ram - 16 GB
  - Rom - 1 TB (OS)
  - Rom – 16 TB (Data)
  - Monitor
  - Mouse and Keyboard

- Software Requirements
  - Programming Language – Java 11
  - Database – MySQL
  - Web Server - Tomcat