Thrive

Version 1.5

by

BAMF

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Riley Kilgore, Jia Li, Janelle Dockter

1. Revision History

Date	Version	Description	Author
10/16/2019	1.1	Executive Summary	Johnathan Hewit
10/16/2019	1.1	Stakeholders	Hadassah Latchague
10/16/2019	1.1	Problem/Solution	Janelle Dockter
10/16/2019	1.1	Software Requirements Specifications	Scott Blake, Hadassah Latchague, David Mehedinti, Riley Kilgore, Jia Li, Janelle Dockter
10/16/2019	1.1	Domain Model	Johnathan Hewit
10/23/2019	1.2	Use Case - Account Registration	Johnathan Hewit
10/23/2019	1.2	Use Case - Signing In	Janelle Dockter
10/23/2019	1.2	Use Case - Setting Up Accessibility Settings	Hadassah Latchague
10/23/2019	1.2	Use Case - Selecting Payment Information	Scott Blake
10/23/2019	1.2	Use Case - Product Donation	Riley Kilgore
10/23/2019	1.2	Use Case - Product Purchase	Jia Li
10/23/2019	1.2	Use Case - User Messaging	David Mehendinti
10/23/2019	1.2	Use Case Diagram	Janelle Dockter
10/23/2019	1.2	Activity Diagram - Setting Up Accessibility Settings	Hadassah Latchague
10/23/2019	1.2	Activity Diagram - Account Registration	Johnathan Hewit
11/06/2019	1.3	Activity Diagram - Signing In	Janelle Dockter
11/06/2019	1.3	Activity Diagram - Selecting Payment Information	Scott Blake
11/06/2019	1.3	Activity Diagram - Product Donation	Riley Kilgore
11/06/2019	1.3	Activity Diagram - Product Purchase	Jia Li
11/06/2019	1.3	Activity Diagram - User Messaging	David Mehendinti
11/05/2019	1.3	Wireframes	Hadassah Latchague
11/06/2019	1.3	Wireframe Navigation Flow	Hadassah Latchague, David Mehendinti
11/15/2019	1.3	Robustness Diagram - Setting Up Accessibility Settings	Hadassah Latchague
11/15/2019	1.3	Robustness Diagram - Account Registration	Johnathan Hewit
11/15/2019	1.3	Robustness Diagram - Signing In	Janelle Dockter
11/15/2019	1.3	Robustness Diagram - Selecting Payment Information	Scott Blake

11/15/2019	1.3	Robustness Diagram - Product Donation	Riley Kilgore
11/15/2019	1.3	Robustness Diagram - Product Purchase	Jia Li
11/15/2019	1.3	Robustness Diagram - User Messaging	David Mehendinti
11/22/2019	1.3	Sequence Diagram - Setting Up Accessibility Settings	Hadassah Latchague
11/15/2019	1.3	Sequence Diagram - Account Registration	Johnathan Hewit
11/23/2019	1.3	Sequence Diagram - Signing In	Janelle Dockter
11/22/2019	1.3	Sequence Diagram - Selecting Payment Information	Scott Blake
11/23/2019	1.3	Sequence Diagram - Product Donation	Riley Kilgore
11/23/2019	1.3	Sequence Diagram - Product Purchase	Jia Li
11/23/2019	1.3	Sequence Diagram - User Messaging	David Mehendinti
11/22/2019	1.3	Data Flow Diagram	Riley Kilgore
11/23/2019	1.3	Sequence Diagram - Account Registration	Johnathan Hewit (update)
11/23/2019	1.3	Robustness Diagram - Account Registration	Johnathan Hewit (update)
11/25/2019	1.4	Glossary	Johnathan Hewit
11/29/2019	1.4	Class Diagram	Janelle Dockter
12/04/2019	1.5	Document Review	Computer Love
12/11/2019	1.5	Rebuttal	Hadassah Latchague, Scott Blake

2. Table of Contents

3. Business Proposal

3.1 Executive Summary

Thrive was initially conceived by its founders with the goal of assisting those with disabilities, or those who have relatives or dependents with disabilities. Today, there exists no easy method for the disposal or donation of medical equipment, frequently with the burden falling on the owner. Additionally, there exists a large community of those with disabilities who require medical equipment, but cannot afford the price that is associated with new equipment. This presents an unmet need for not only a convenient and simple process to donate unused medical equipment, but also to acquire it at an inexpensive rate.

The Thrive team has assumed our founders's goal as our mission, and we are committed to delivering a user-focused experience for those in need of a simplified solution for their medical equipment demands. Our web service and application will provide the convenience our users require in order to donate their equipment by connecting them to a network of recipients and removing the burden of cost and the inconvenience of delivery. Similarly, we will be providing an inexpensive alternative to purchasing the equipment by only charging the recipient the shipping and handling costs and a five percent processing fee.

Combining our founders's passion to serve the needs of the community with the Thrive team's vision of a convenient solution and vibrant community of users, we believe that Thrive will become an incredible resource for those in need.

3.2 Stakeholders

The stakeholders for the project include:

- Software developers
  - Develop and maintain the desktop and mobile browsers
- UI designers
  - Design user interface and test it
- Marketing team
  - Identify targeted audience to decide how to best market the product
- Client
  - Define requirements and constraints to ensure that the final product matches their vision
- Project manager
  - Oversees project and ensures final deliverable in ready on time

- End users/customers
    - Use the application service to exchange disability equipment

A team of at most 5 people will be sufficient to ensure all the roles are taken care of.

3.3 The Problem

Medical equipment is specialized and expensive, but the only official way people with disabilities currently have to get their equipment is buying new. Since this is the most expensive way to buy, it is unreasonable for many people, including those with growing children who are disabled. Many take to social networking sites such as Facebook to find a used item on a budget, but current social media is not designed to connect those with disabilities. A similar problem occurs when someone is finished with a piece of medical equipment: there is no designated method for reusing or giving these items away. The equipment will sit in storage and take up space without use.

3.4 The Solution

Thrive is a new way to receive needed medical equipment without breaking the bank. A user can log on to find any used piece of external equipment categorized by disability (paralysis, diabetes, etc) and type of equipment (walking aid, wheelchair, sealable parts for devices, etc). These items are free to anyone who needs them, though the receiver must pay any shipping fee required during the mailing process. Users can also post their own equipment on the site, interact with each other directly, ask advice on discussion boards, and set flags on certain equipment to be notified when someone posts an available item. These tasks are tailored specifically for those with disabilities or loved ones supporting someone with a disability.

4. Software Requirements Specification

4.1 Functional Requirements

4.1.1 Account Management Requirements

Req.ID	Requirement
FR-AM-01	User shall create an account to be able to save user information and make purchases or donations.
FR-AM-01.01	Profile shall be created using a valid email address.
FR-AM-01.02	User shall be able to track their orders.
FR-AM-02	User shall be able to edit user preferences.
FR-AM-02.01	System shall match users that have similar information and preferences.
FR-AM-02.02	User shall be able to receive reminders and notifications based on items they are interested in.
FR-AM-03	User shall be able to update profile information.
FR-AM-03.01	User shall be able to update their payment information.
FR-AM-03.02	User shall be able to update their address on file.
FR-AM-03.03	User shall be able to reset the account’s password.
FR-AM-04	User shall be able to recover their account given that they have forgotten their username or password.
FR-AM-04.01	System shall send password reset link to the user's email on file if they have forgotten their password.

FR-AM-04.02	System shall send a message containing the user’s username to their email on file.

4.1.2 Medical Equipment Catalog Requirements

Req.ID	Requirement
FR-MEC-01	User shall be able to add medical equipment to the catalog.
FR-MEC-01.01	User must add equipment’s picture and description to the catalog.
FR-MEC-01.02	System shall guide the user when donating equipment to the catalog.
FR-MEC-02	System shall update catalog each time equipment is added or removed.
FR-MEC-03	User shall be able to edit medical equipment they’ve added to the catalog.
FR-MEC-03.01	User shall be able to add the estimated shipping cost to medical equipment they’ve added to the catalog.
FR-MEC-03.02	System shall give shipping estimates based on the equipment in the equipment page.
FR-MEC-04	User shall be able to search for an item using keywords on equipment function, name, or brand.

4.1.3 Shopping Cart Requirements

Req.ID	Requirement
FR-SC-01	User shall be able to add medical equipment to their cart.
FR-SC-02	User shall be able to remove medical equipment from their cart.

FR-SC-03	User shall be able to purchase items from their cart.
FR-SC-04	Users shall be able to see suggested items based off the item that is in their shopping cart.
FR-SC-05	Users shall be able to see other equipment matching the same description from other users in their shopping cart to compare quality.

4.1.4 Message Service Requirements

Req.ID	Requirement
FR-MS-01	Users shall be able to create group messages.
FR-MS-02	Users shall be able to send audio, video, and images as attachments.
FR-MS-03	Users shall be able to send private messages to other users to communicate with buyers and donors privately.
FR-MS-04	Users shall be able to control whether or not to receive private messages from other users to avoid potential harassment.
FR-MS-05	Users shall be able to create discussion boards in regard to items and get feedback from others who have used specific brands.
FR-MS-06	Users shall be able to maintain an inbox of all messages, similar to email, to be able to look back through.

4.2 Non-Functional Requirements

4.2.1 Usability

Req.ID	Requirement

NF-US-01	Service shall run on web browsers and mobile applications.
NF-US-02	Website and application shall be designed with simplicity to streamline use.

4.2.2 Reliability

Req.ID	Requirement
NF-RL-01	The system shall have the same fast response time for all requests made.
NF-RL-02	System shall have a MTTF (mean time to failure) of 1000 hours.

4.2.3 Performance

Req.ID	Requirement
NF-PF-01	The system shall return API responses within one second.
NF-PF-02	The system shall take less than a minute to link to third party services.

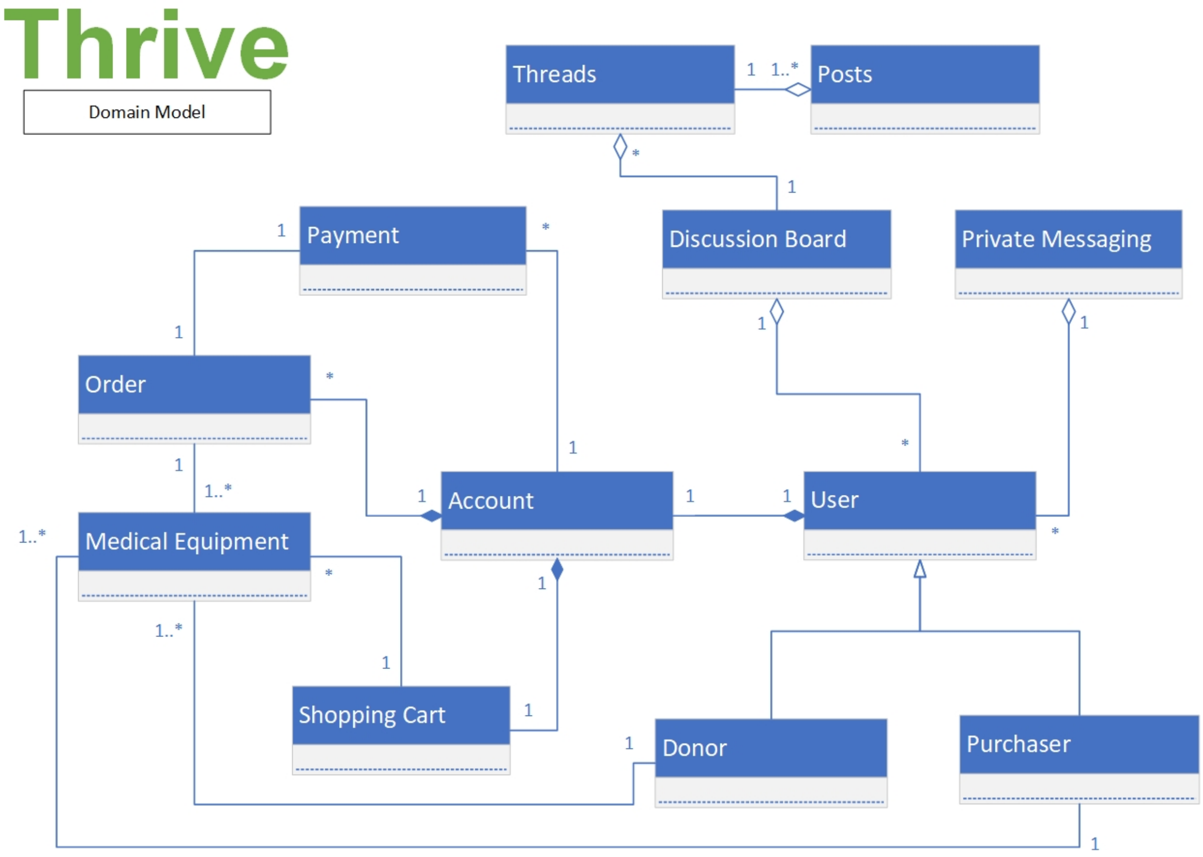
4.2.4 Security

Req.ID	Requirement
NF-SC-01	The system shall protect the user’s credentials from other users.
NF-SC-02	The service shall have protection for payment method processing.
NF-SC-03	The service shall protect and erase any information accessed through third party services.

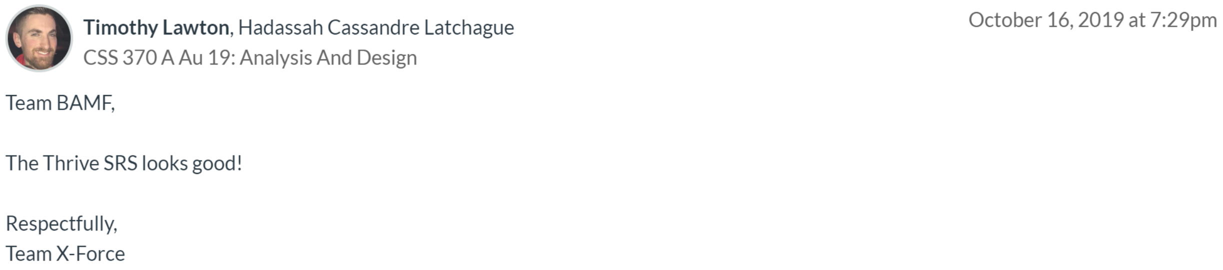
NF-SC-04	User accounts shall be protected by password authentication.
NF-SC-05	User account passwords shall be resettable through the user’s email.

5. Architecture Design

5.1 Domain Model



6. Business Team Approval



Timothy Lawton, Hadassah Cassandre Latchague
CSS 370 A Au 19: Analysis And Design

October 16, 2019 at 7:29pm

Team BAMF,

The Thrive SRS looks good!

Respectfully,
Team X-Force

7. Use Case Descriptions

UC1: Account Registration

Goal: User successfully registers a new account with Thrive.
Actor(s): New User
Preconditions: New User does not have an account and/or is not currently logged into a Thrive account.
Trigger: New User clicks the “Sign In” or “Register” button in the static user section in the top-right corner of the browser, touches the “Sign In” or “Register” icon under the “Account” header in the mobile application, or the New User is attempting to complete the Checkout scenario and selects the “Sign In” or “Register” button from the Cart.
Main Scenario:

- **1.** System loads a registration form with the required field for a Username, Email Address, First and Last Name, and two fields for a Password. System also has optional fields for Payment Information, Address, About Me, and a series of Checkboxes for Product Preferences.
- **2.** New User enters their information in the required fields.
- **3.** New User enters their information in the optional fields.
- **4.** New User clicks the “Submit” button to complete the registration.
- **5.** System sends New User a confirmation email.

Alternatives:

- **2a.** Invalid or incomplete information entered into the required fields by New User.
  - **2a1.** System displays appropriate error for incomplete or invalid entry.
  - **2a2.** New User corrects the information in fields where errors have occurred.
- **2b.** Duplicate information is entered into the required fields by New User.
  - **2b1.** System displays that the Username and/or Email Address has already been used.
  - **2b2.** New User chooses a new Username and/or Email Address.
  - **2b3.** New User chooses to log in to their existing account.
- **3a.** Invalid or incomplete information entered into the optional fields by New User.
  - **3a1.** System displays appropriate error for incomplete or invalid entry.
  - **3a2.** New User corrects or removes the information where the error has occurred.

End Condition: The New User’s account is successfully registered with Thrive.

UC2: Signing In

Goal: User has successfully logged into their account.
Actor(s): Current User
Preconditions: User already has an account and is not currently logged in.
Trigger: Current User clicks the “Sign In” or “Register” button in the static user section in the top-right corner of the browser, touches the “Sign In” icon under the “Account” header in the mobile application, or the Current User is attempting to complete the Checkout scenario and selects the “Sign In” button from the Cart.
Main Scenario:

- **1.** System loads a sign in form with the required field for a Username or Email Address, as well as a Password.
- **2.** Current User enters their information in the required fields.
- **3.** Current User clicks the “Submit” button to log in.
- **4.** System verifies login ID and password and logs the user into their account.
- **5.** System reroutes user to home page of Thrive.

Alternatives:

- **3a.** Invalid or incomplete information entered into the required fields by Current User.
    - **3a1.** System displays appropriate error for incomplete or invalid entry.
    - **3a2.** Current User corrects the information in fields where errors have occurred.
- **4a.** User inputs an email address as login ID.
    - **4a1.** System checks database for matching email address and password.
- **4b.** User inputs a username as login ID.
    - **4b1.** System checks database for matching username and password.

End Condition: The Current User is logged into their Thrive Account.

UC3: Setting Up Accessibility Settings

Goal: User sets up their accessibility settings.
Actor(s): User
Preconditions: User has already created an account with Thrive and is signed in via the browser (or mobile application)
Trigger: User selects “Accessibility Settings”
Main Scenario:

- **1.** User selects “Change Font Style & Size”.
- **2.** System presents a list of available font styles and sizes.
- **3.** User selects desired font style and size from list.
- **4.** System displays sample of font for validation by user.
- **5.** System updates user’s browser with desired font.
- **6.** User selects “Text-to-Speech”.
- **7.** System prompts user to activate the text-to-speech option.
- **8.** System updates user’s browser by activating text-to-speech.
- **9.** User selects “Change Color Contrast”.
- **10.** System displays color wheel for the user to choose the color of each element on their view of the browser.
- **11.** User selects colors from color wheel for each element.
- **12.** System displays sample of color contrast for validation by user.
- **13.** System updates user’s view of browser with desired color contrast.

Alternatives:

- **11a.** User inputs same background and text color.
    - **11a1**. System displays error message to prompt the user to change one of the colors.
    - **11a2**. User corrects their input in one of the fields until system validates..

End Condition: User has set up their accessibility settings and returns to the home page.

UC4: Selecting Payment Information

Goal: User successfully selects or updates payment information.
Actor(s): Current User
Preconditions: Current User has and is logged into their Thrive account. User already has an account and either has no payment information on account or needs to change payment information already attached to the account.
Trigger: Current User clicks the "Update Payment Information" button in "User Settings" or Current User clicks on "Update Payment Information" when attempting to make a purchase.
Main Scenario:

- **1.** System generates a form to update billing information for the Current User.
- **2.** Current User enters information into required fields.
- **3.** Current User clicks the "Submit" button to complete the update.
- **4.** System updates information for the user in the database.

Alternatives:

- **2a.** Invalid or incomplete information entered into the required fields by Current User.
    - **2a1.** System displays appropriate error for incomplete or invalid entry.
    - **2a2.** Current user corrects the information that they have provided.

End Condition: The Current User's account information is successfully updated.

UC5: Product Donation

Goal: Current User successfully posts an item for donation.
Actor(s): Current User
Preconditions: Current User has and is logged into their Thrive account.
Trigger: Current User accesses the “Thrive Donation Page” through the Thrive website or through the mobile app.
Main Scenario:

- **1.** System loads a donation form with the required fields for photos, a description, and the weight of the item. System also loads optional fields for dimensions, and category of the item.
- **2.** Current User enters the information in all required fields.
- **3.** Current User enters the information in desired optional fields.
- **4.** New User clicks the “Submit” button to upload their donation.
- **5.** System returns information to user for validation.
- **6.** Current User validates the information within the form.
- **7.** System sends an email confirmation to the Current User.

Alternatives:

- **5a.** Invalid or incomplete information entered into the required fields by Current User.
    - **5a1.** System displays appropriate error for incomplete or invalid entry.
    - **5a2.** Current User corrects the information in fields where the errors occurred.
- **5b.** Invalid information entered into the optional fields by Current User.
    - **5b1.** System displays appropriate error for incomplete or invalid entry.
    - **5b2.** Current User corrects or removes the information where the errors occurred.
    - **5b3.** Step 5 occurs.
- **6a.** User invalidates the information provided by the System.
    - **6a1.** System returns to step 1 with form populated by cached information.

End Condition: The Current Users donation is posted.

UC6: Product Purchase

Goal: User purchased desired product
Actor(s): User

Pre-Condition: User logged into their account, payment information set up and information of the medical equipment(s) they are looking for.
Trigger: User placed item in cart
Main Scenario:

- **1.** User input the equipment name into search bar
- **2.** Once found desired item, user add item(s) to the shopping cart.
- **3.** User click check out button
- **4.** User input shipping address
- **5.** User input contact information
- **6.** User select payment option for shipping
- **7.** User review summary of the order
- **8.** User click “Place Order”

Alternatives:

- **3a.** User placed wrong item in cart
  - 3a1. User select cancel and goto steps 1-2 again
- **4a.** User input invalid shipping address
  - 4a1. System display error message and prompt user missing/incorrect fields
  - 4a2. User correct fields according to error messages
- **5a.** User input invalid or incorrect email address or phone number
  - 5a1. System display error message for the invalid input
  - 5a2. User will make changes accordingly

End Condition: User successfully purchased their item from Thrive

UC7: User Messaging

Goal: User and Product owner have a conversation
Actor(s): User, Product Owner
Precondition: User is logged in, and is on a product page
Trigger: User selects “message owner”
Main Scenario:

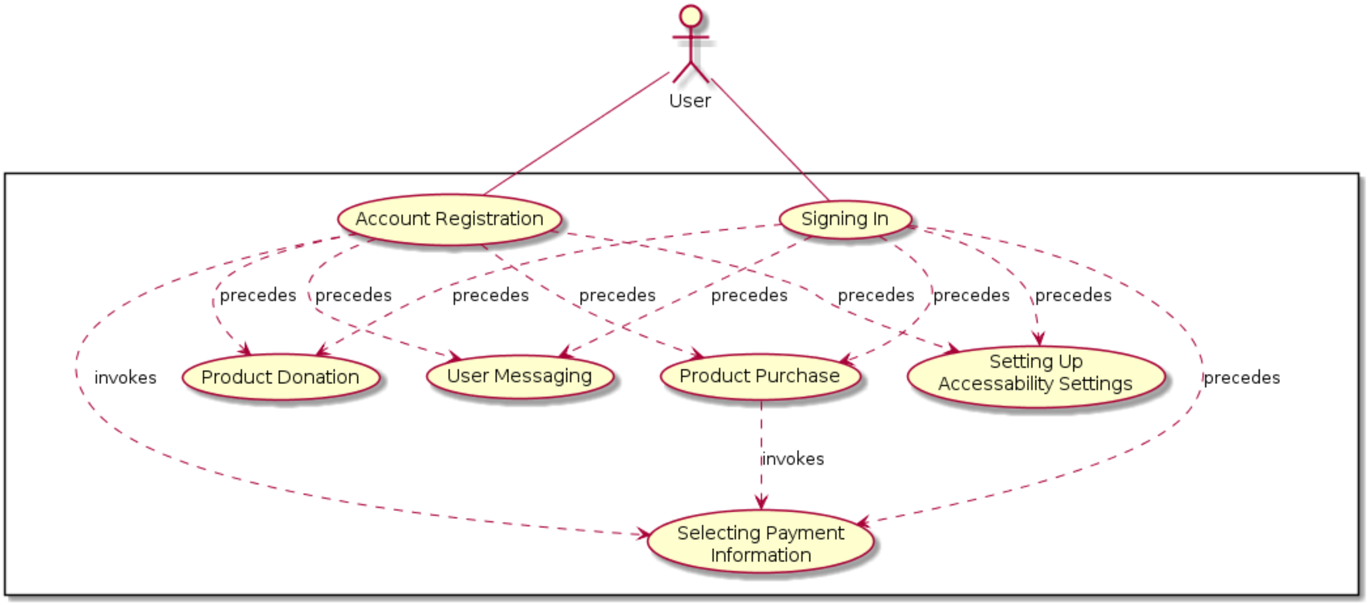
- **1)** A message field appears
- **2)** User types message into the message field
- **3)** User sends the message
- **4)** Message is received by the product owner
- **5)** Product Owner reads message
- **6)** Process steps from 2 - 4 repeats where user and Product Owner switch roles

Alternatives:

- **3a)** User/Product Owner sends a photo
- **3b)** User/Product Owner sends a link

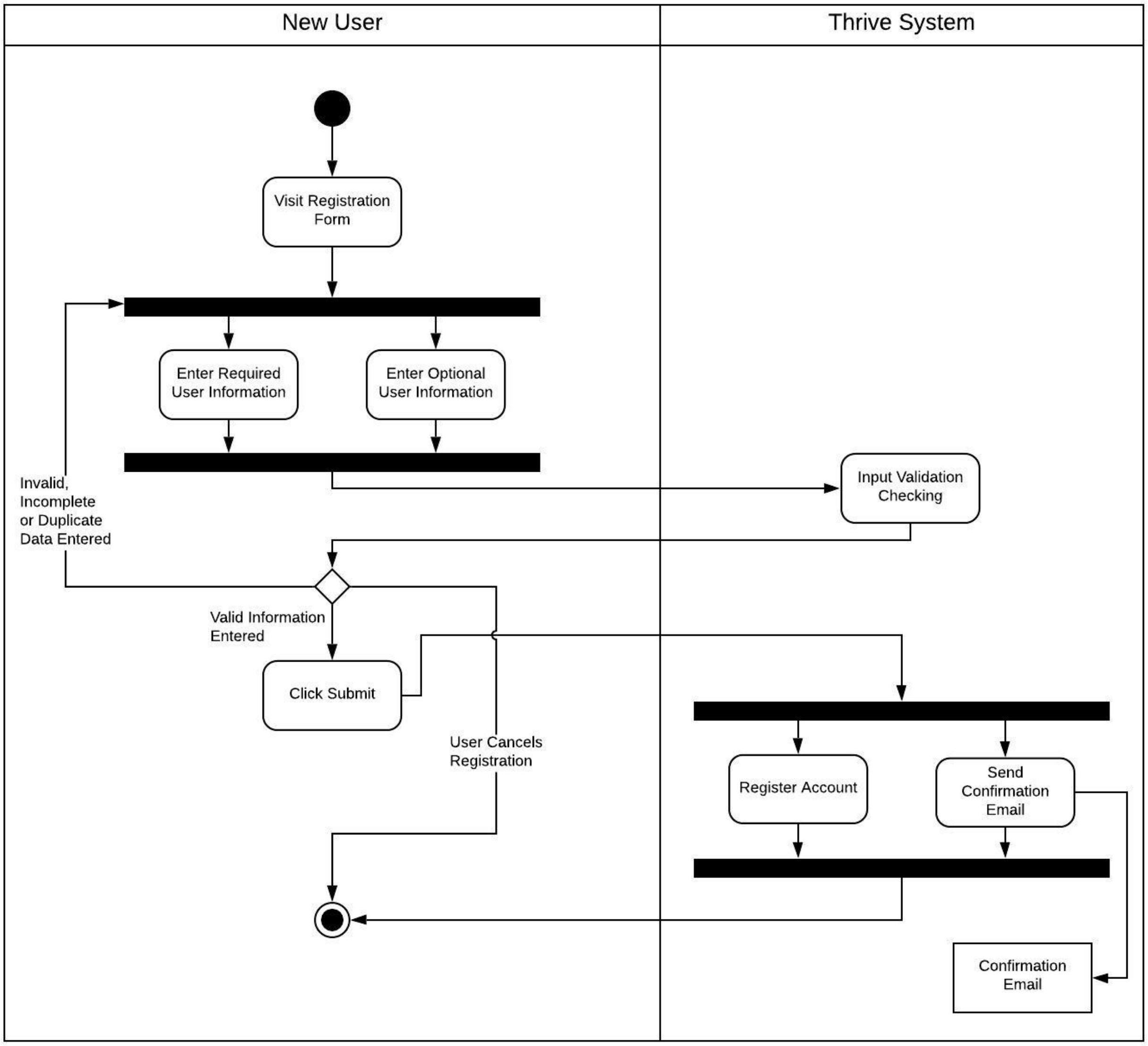
End Condition: User has a conversation with Product Owner indefinitely

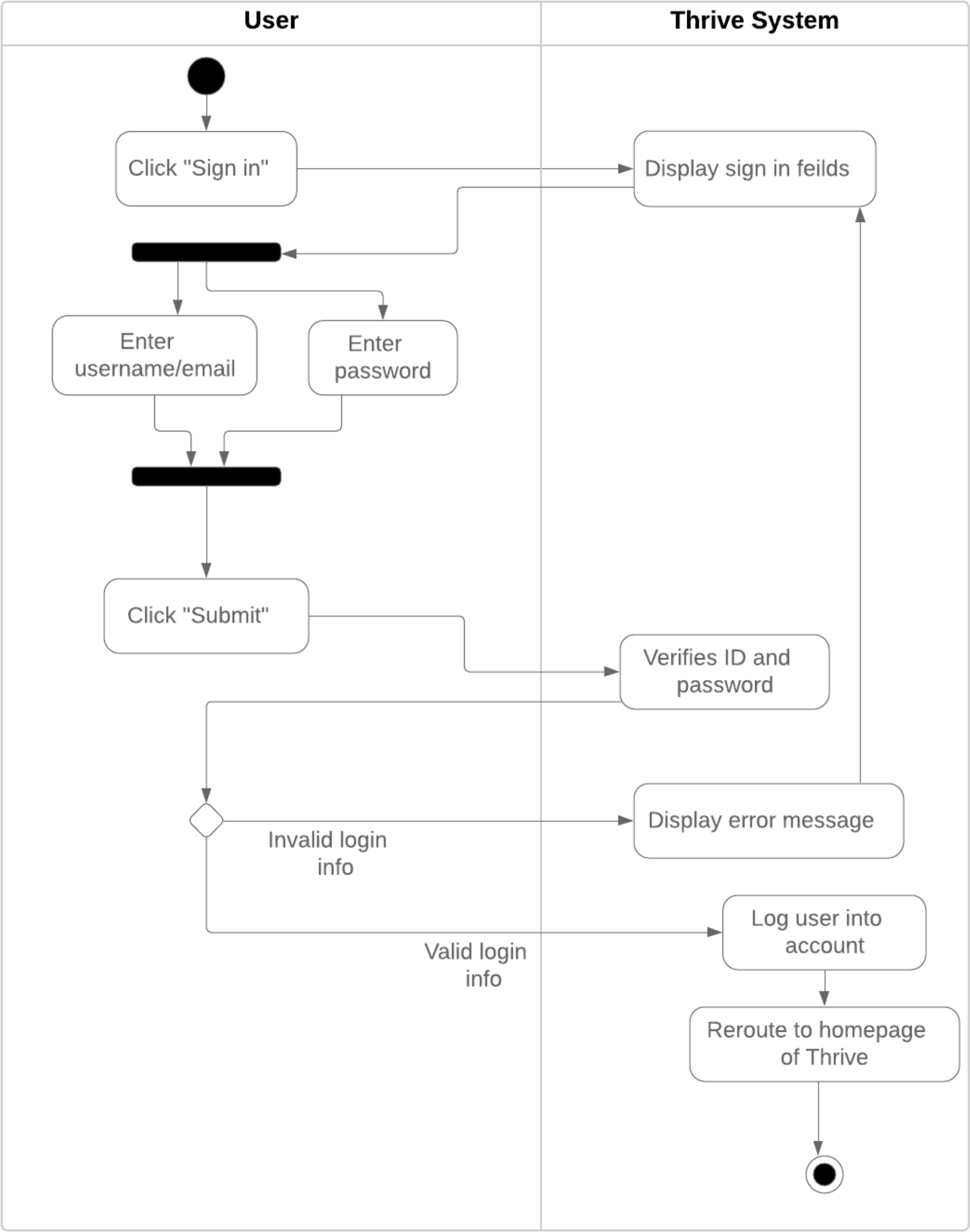
8. Use Case Diagram



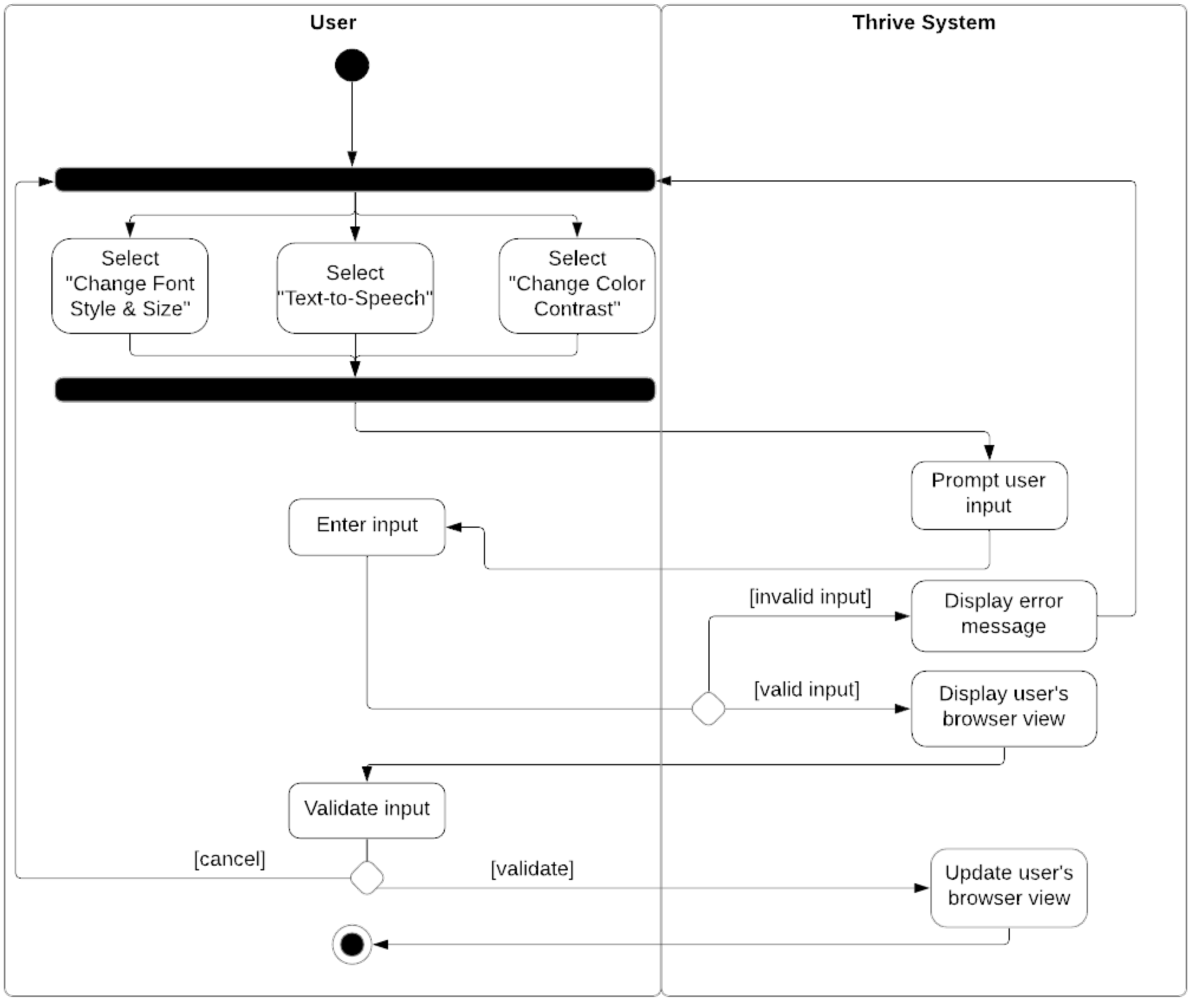
9. Activity Diagrams

AD1: Account Registration

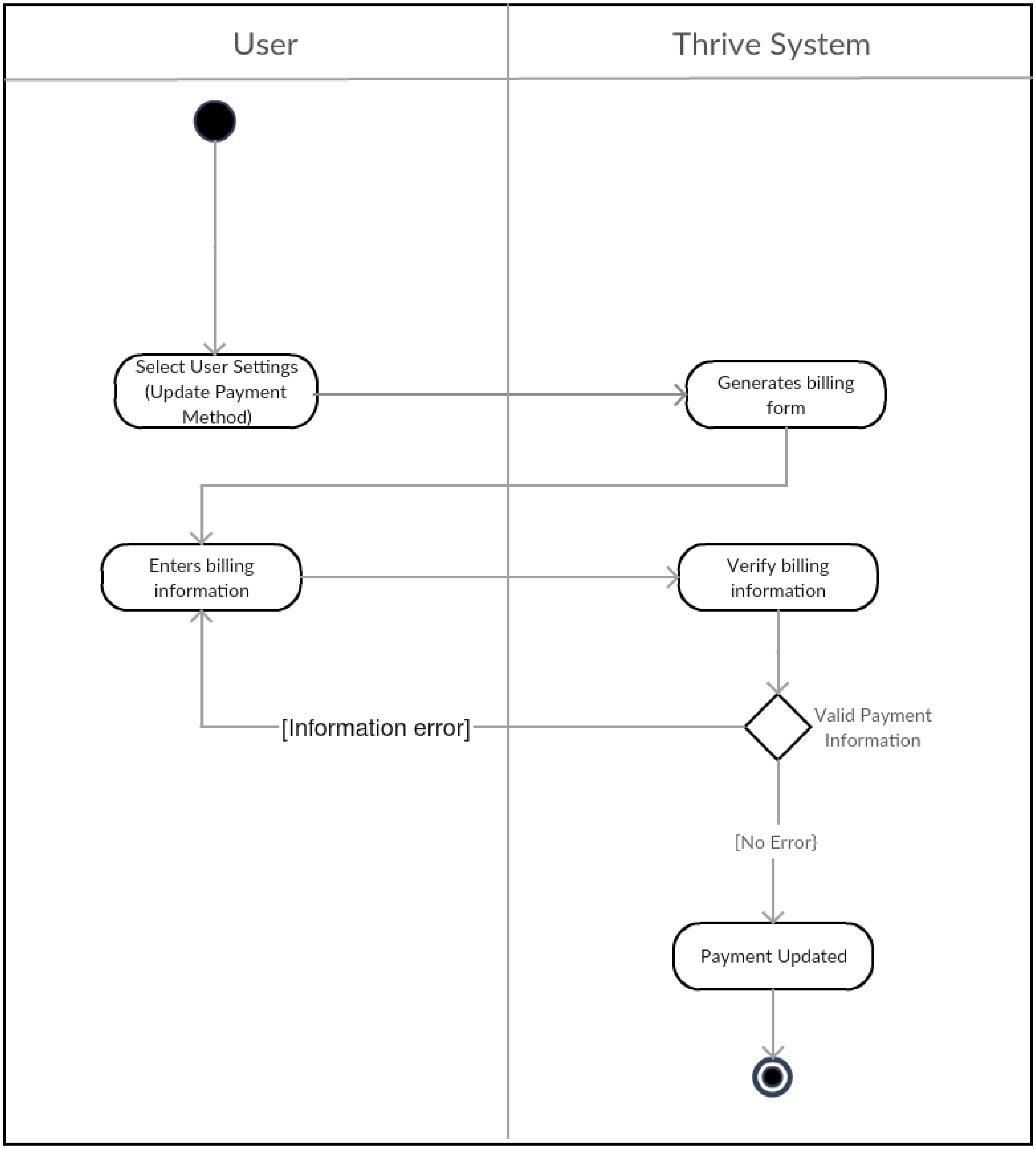

New User
Thrive System
Visit Registration Form
Enter Required User Information
Enter Optional User Information
Input Validation Checking
Invalid, Incomplete or Duplicate Data Entered
Valid Information Entered
Click Submit
User Cancels Registration
Register Account
Send Confirmation Email
Confirmation Email



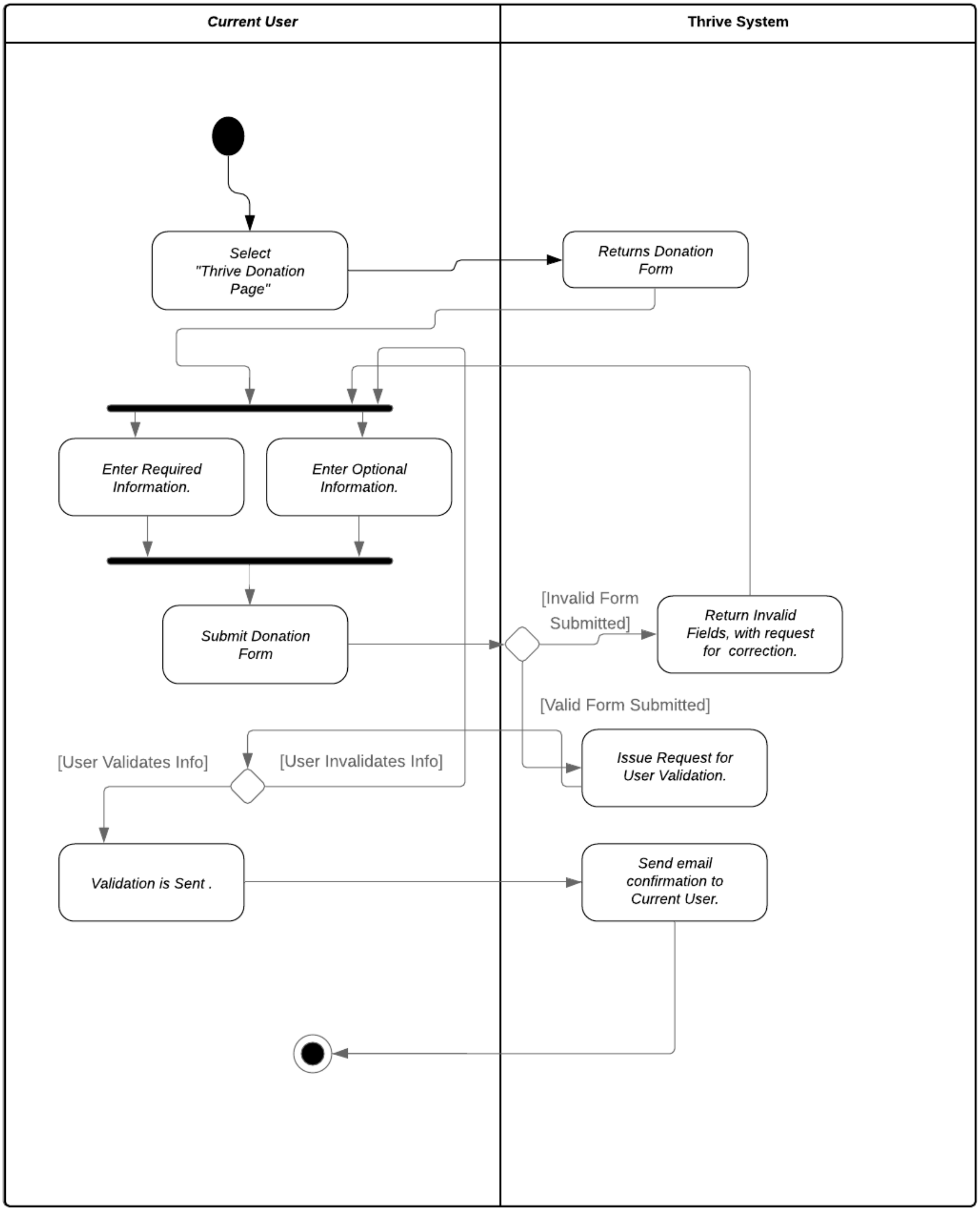
AD3: Updating Accessibility Settings

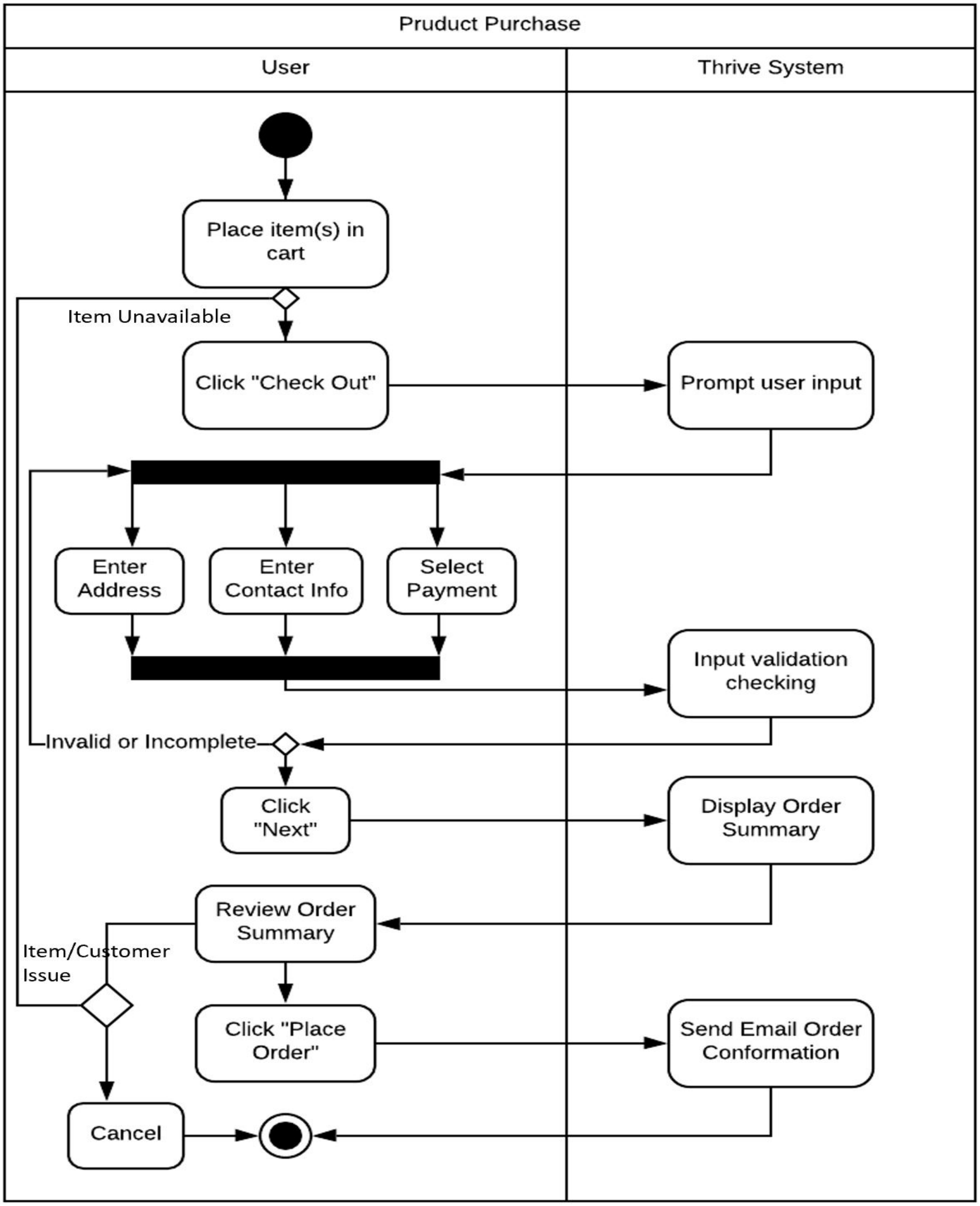

User
Thrive System
Select "Change Font Style & Size"
Select "Text-to-Speech"
Select "Change Color Contrast"
Prompt user input
Enter input
[invalid input]
Display error message
[valid input]
Display user's browser view
Validate input
[cancel]
[validate]
Update user's browser view

AD4: Payment Method Update

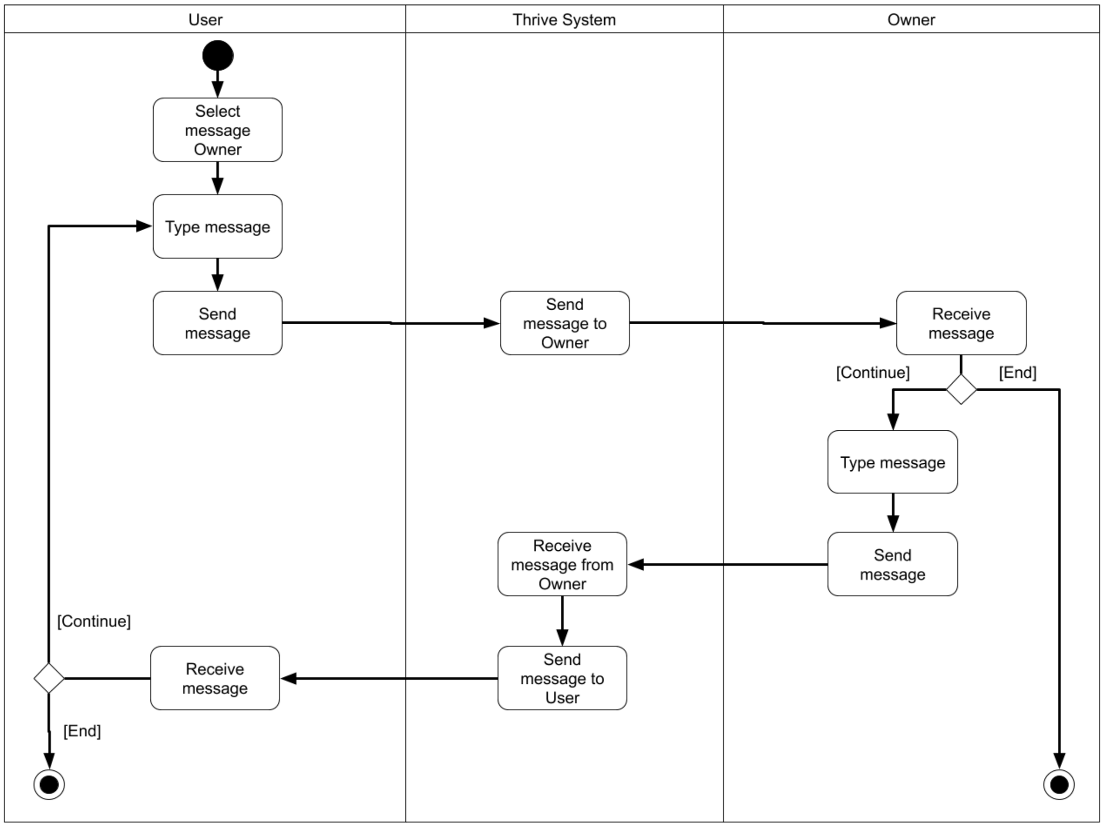

User
Thrive System
Select User Settings (Update Payment Method)
Generates billing form
Enters billing information
Verify billing information
Valid Payment Information
[Information error]
[No Error}
Payment Updated

AD5: Product Donation


Current User
Thrive System
Select "Thrive Donation Page"
Returns Donation Form
Enter Required Information.
Enter Optional Information.
Submit Donation Form
[Invalid Form Submitted]
Return Invalid Fields, with request for correction.
[Valid Form Submitted]
Issue Request for User Validation.
[User Validates Info]
[User Invalidates Info]
Validation is Sent .
Send email confirmation to Current User.



AD7: User Messaging

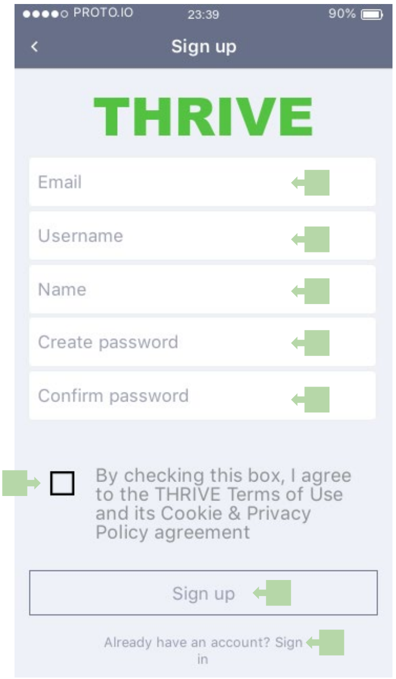

User
Thrive System
Owner
Select message Owner
Type message
Send message
Send message to Owner
Receive message
[Continue]
[End]
Type message
Send message
Receive message from Owner
Send message to User
Receive message
[Continue]
[End]

10. Wireframes:

10.1 Create Account Wireframes

WF1: Create Account Home

Wireframe ID	Wireframe Description
WF 1.1	Text field for user to enter email
WF 1.2	Text field for user to enter username
WF 1.3	Text field for user to enter first and last name
WF 1.4	Text field for user to enter password
WF 1.5	Text field for user to re-enter password for confirmation
WF 1.6	Checkbox for user to agree to THRIVE's Terms of Use
WF 1.7	Sign Up push button to submit the information and create account
WF 1.8	Sign In push button for users who already have an account to get redirected to the sign in page

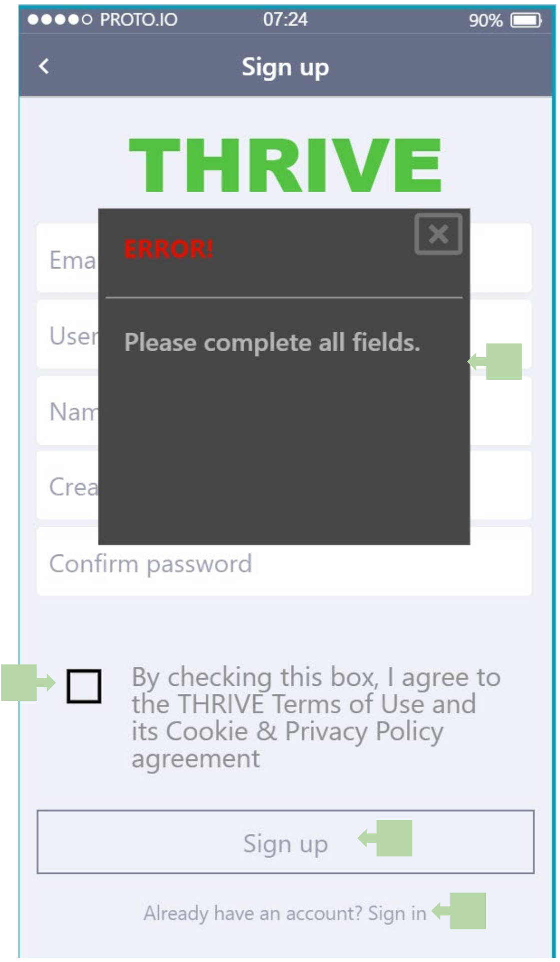


□ By checking this box, I agree to the THRIVE Terms of Use and its Cookie & Privacy Policy agreement

Already have an account? Sign in

WF2: Create Account Alternative - Fields Incomplete

Wireframe ID	Wireframe Description
WF 2.1	Error window, indicating that all fields must be completed, with [x] button to dismiss
WF 2.2	Checkbox for user to agree to THRIVE’s Terms of Use
WF 2.3	Sign Up push button to submit the information and create account
WF 2.4	Sign In push button for users who already have an account to get redirected to the sign in page



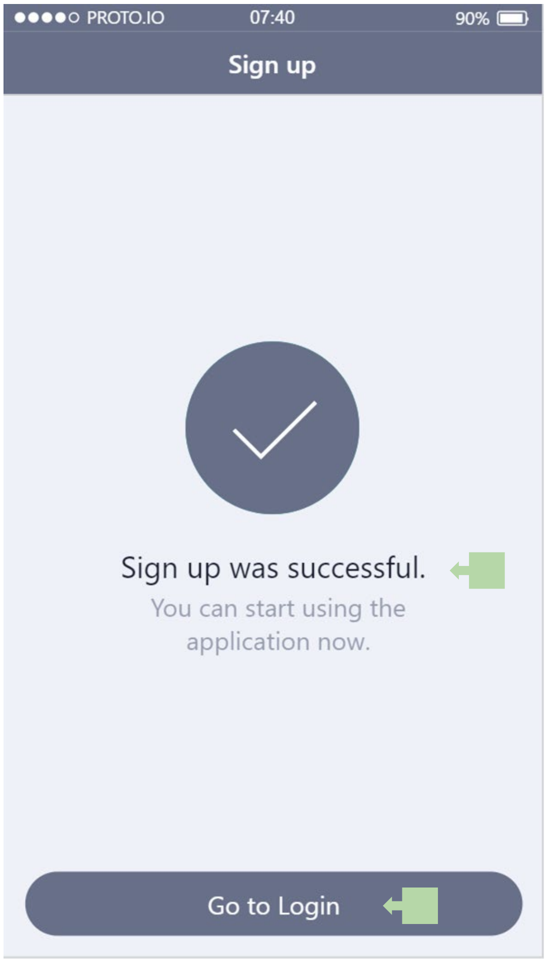
ERROR!

Please complete all fields.

□ By checking this box, I agree to the THRIVE Terms of Use and its Cookie & Privacy Policy agreement

WF3: Create Account - Successful Account Registration

Wireframe ID	Wireframe Description
WF 3.1	Message to let user know they have successfully created their THRIVE account.
WF 3.2	Go To Login push button to take the user back to the login page



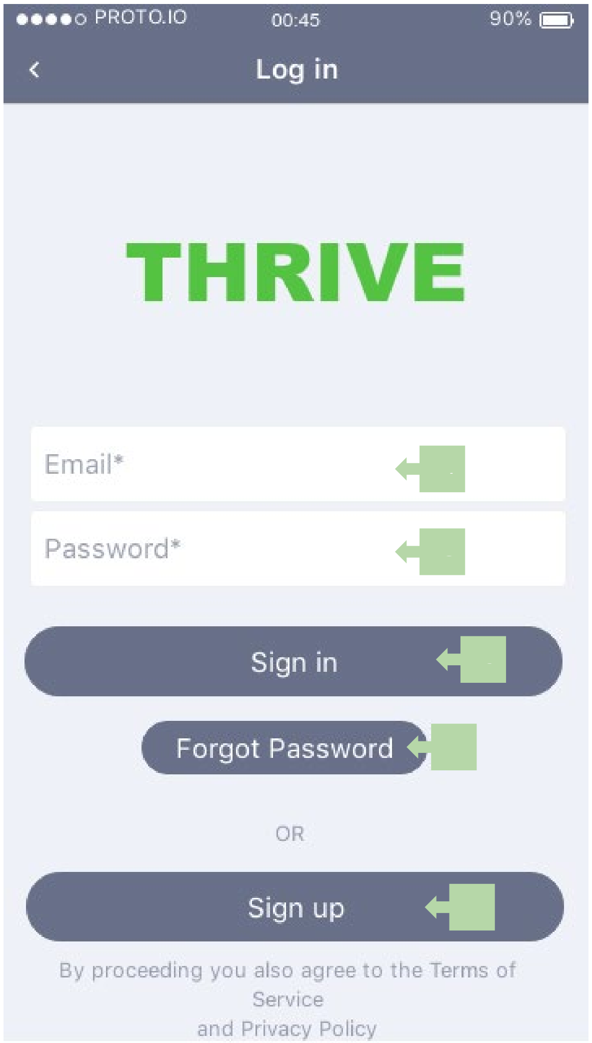
Sign up was successful.

You can start using the application now.

10.2 Log In Wireframes

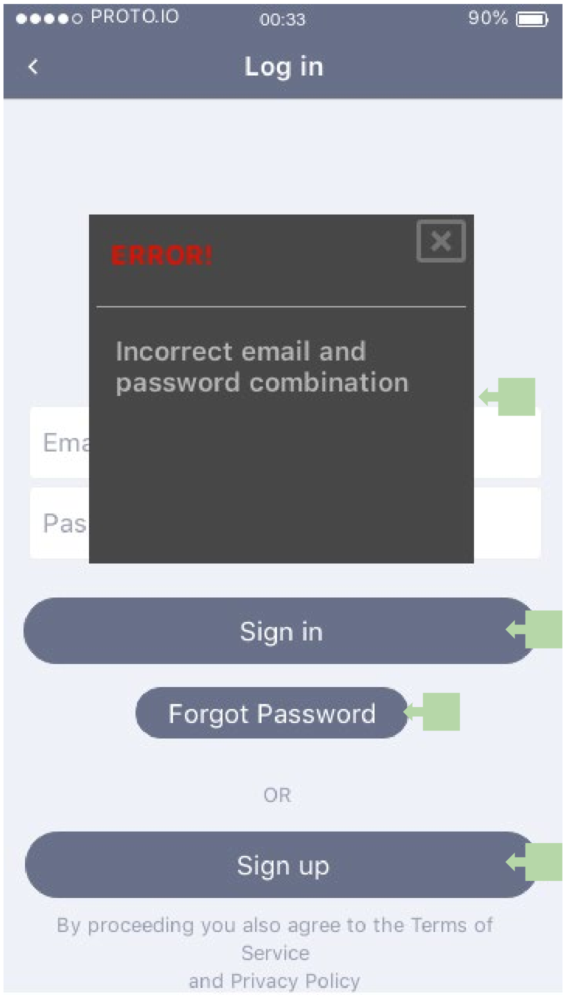
WF1: Log In Home

Wireframe ID	Wireframe Description
WF 1.1	User email entry field
WF 1.2	User password entry field
WF 1.3	Sign in button
WF 1.4	Forgot password reset button
WF 1.5	Sign up button for new users



WF2: Log In Alternative - Incorrect Information

Wireframe ID	Wireframe Description
WF 2.1	Error window, indicating that the information entered is incorrect, with [x] push button to dismiss
WF 2.2	Sign in push button
WF 2.3	Forgot password reset button
WF 2.4	Sign up button for new users



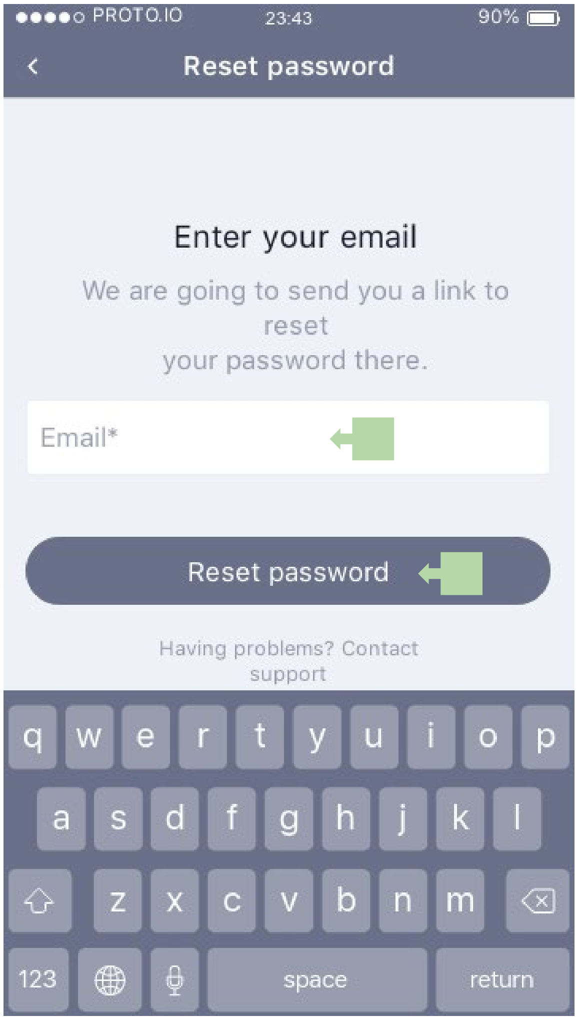
ERROR!

Incorrect email and password combination

By proceeding you also agree to the Terms of Service
and Privacy Policy

WF3: Log In Alternative - Password Reset

Wireframe ID	Wireframe Description
WF 3.1	Text field to enter email
WF 3.2	Reset Password button to send email to user so they can change their password.



Enter your email

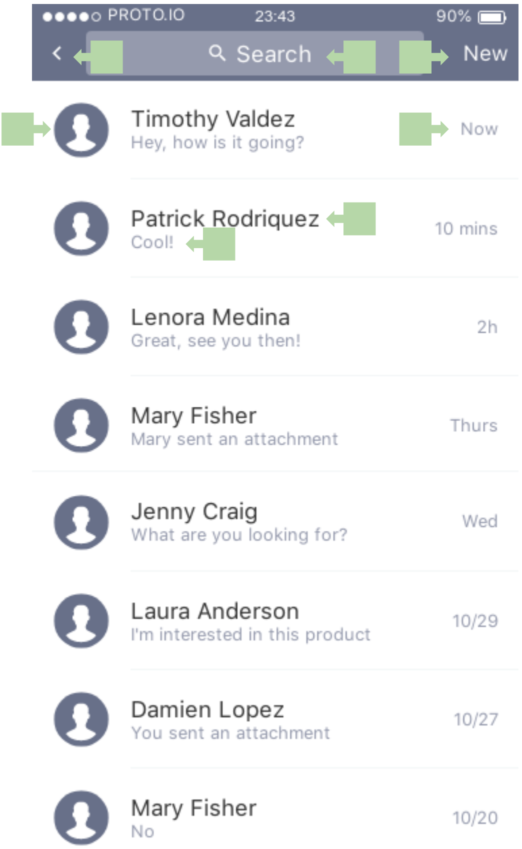
We are going to send you a link to reset your password there.

Having problems? Contact support

10.3 Messaging Wireframes

WF1: Messages

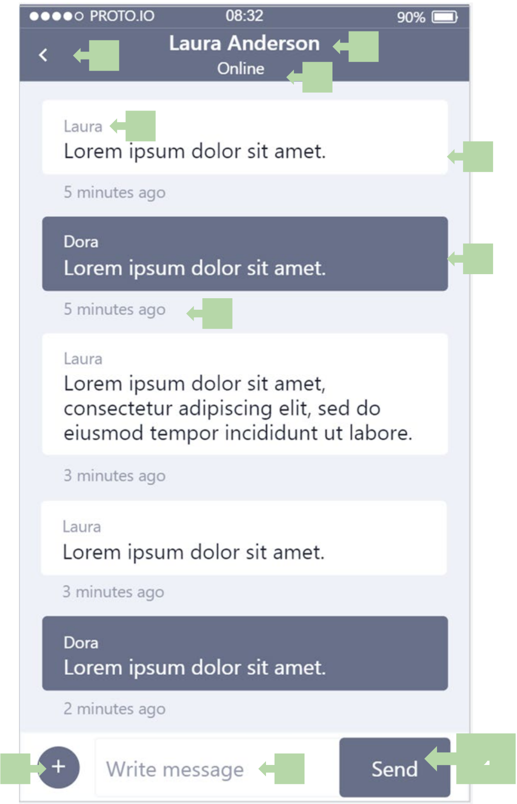
Wireframe ID	Wireframe Description
WF 1.1	Search bar to look for specific message given keyword within text messages or other user's name
WF 1.2	New push button to create a new message
WF 1.3	Displays user's profile picture if they have one
WF 1.4	Date or time when the message was received
WF 1.5	Name of other user
WF 1.6	Preview of last message received or sent
WF 1.7	Back arrow to go back to THRIVE's home page



Timothy Valdez	Hey, how is it going?	Now
Patrick Rodriquez	Cool!	10 mins
Lenora Medina	Great, see you then!	2h
Mary Fisher	Mary sent an attachment	Thurs
Jenny Craig	What are you looking for?	Wed
Laura Anderson	I'm interested in this product	10/29
Damien Lopez	You sent an attachment	10/27
Mary Fisher	No	10/20

WF2: Message with Other User

Wireframe ID	Wireframe Description
WF 1.1	Name of other user that the user is having a conversation with
WF 1.2	Other user’s status
WF 1.3	Back arrow to go back to Messages page
WF 1.4	Name of user sending message
WF 1.5	Light colored box for other user’s messages
WF 1.6	Dark colored box for user’s messages
WF 1.7	Time or date when the message was sent
WF 1.8	+ push button that opens with option to include a picture attachment
WF 1.9	Text field for user to write the message
WF 1.10	Send push button to send the message



Laura
Lorem ipsum dolor sit amet.
5 minutes ago

Dora
Lorem ipsum dolor sit amet.
5 minutes ago

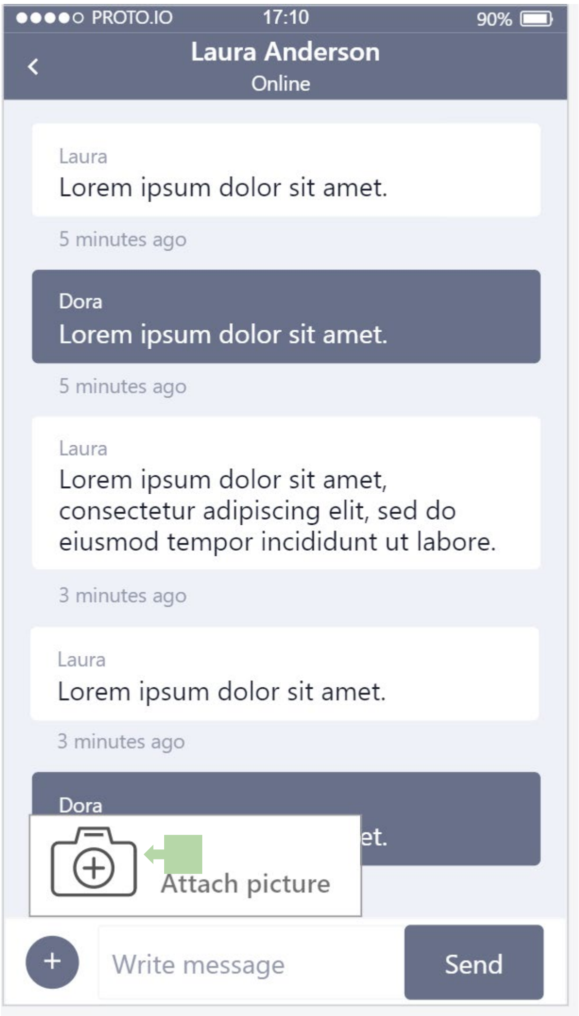
Laura
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore.
3 minutes ago

Laura
Lorem ipsum dolor sit amet.
3 minutes ago

Dora
Lorem ipsum dolor sit amet.
2 minutes ago

WF3: Message with Other User: Add Picture

Wireframe ID	Wireframe Description
WF 3.1	Attach picture to message



Laura
Lorem ipsum dolor sit amet.
5 minutes ago

Dora
Lorem ipsum dolor sit amet.
5 minutes ago

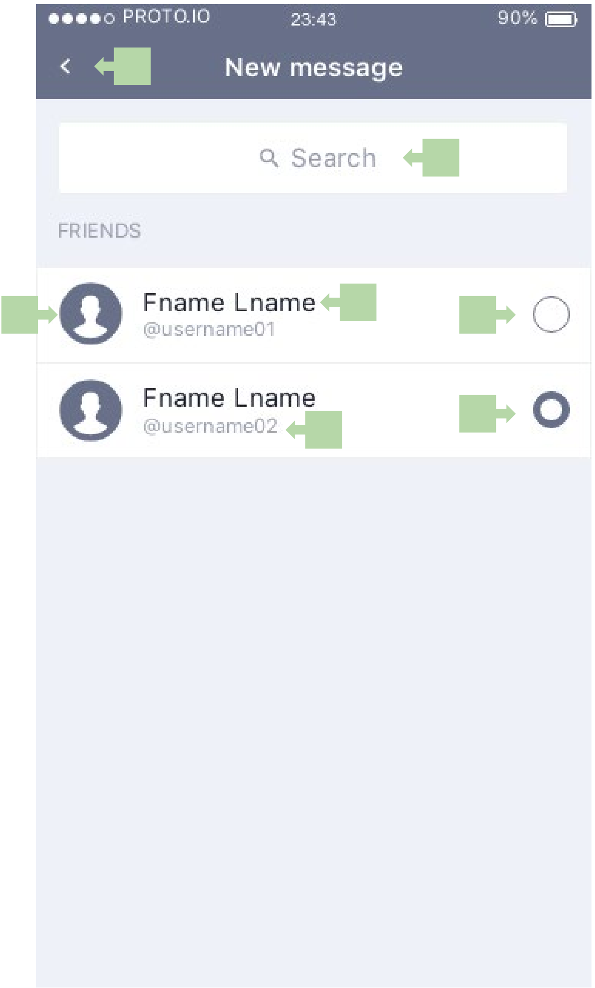
Laura
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore.
3 minutes ago

Laura
Lorem ipsum dolor sit amet.
3 minutes ago

Dora
et.

WF4: Create New Message

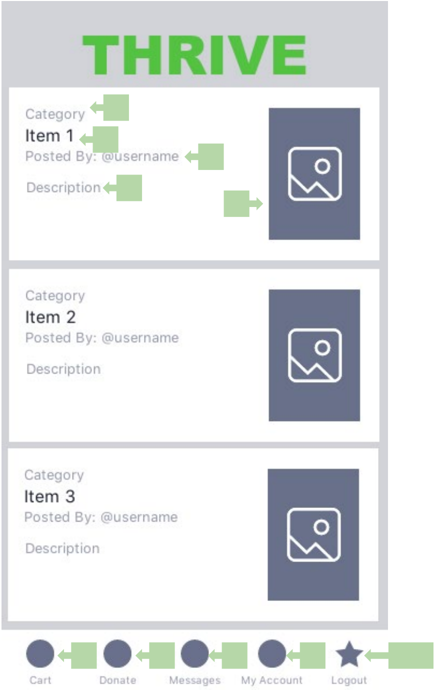
Wireframe ID	Wireframe Description
WF 4.1	Back button to go back to Messages page
WF 4.2	Search for user to message by a username or user's name
WF 4.3	Displays user's profile picture if they have one
WF 4.4	Other user's name
WF 4.5	Unchecked meaning they are not creating the new message for that user
WF 4.6	Other user's username
WF 4.7	Checked meaning this is the user they want to message



10.4 Cart Wireframes

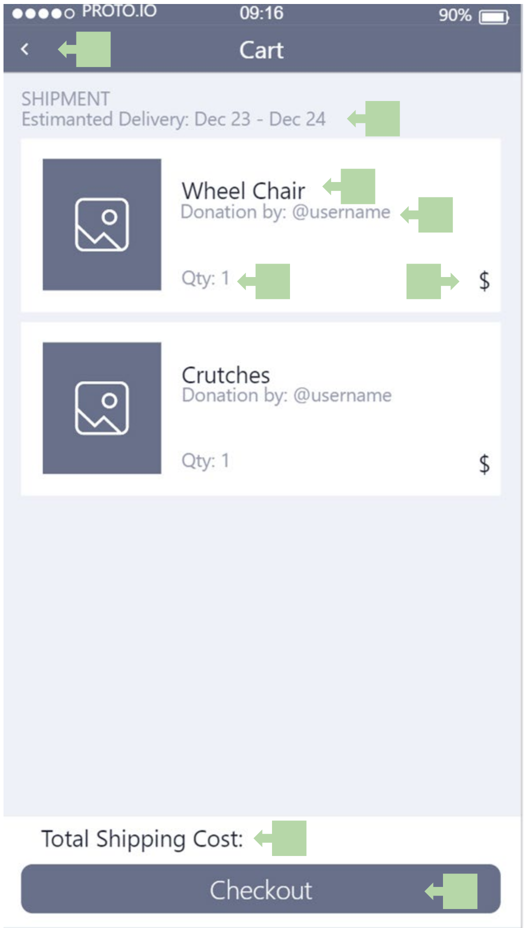
WF1: THRIVE's Catalog Feed

Wireframe ID	Wireframe Description
WF 1.1	Category of item to be donated
WF 1.2	Name of item to be donated
WF 1.3	Username of user donating the item
WF 1.4	Description of the item to be donated
WF 1.5	Picture of item to be donated
WF 1.6	Cart push button for user to look at the cart's contents
WF 1.7	Donate push button for user to create a new donation item post
WF 1.8	Messages push button for user to open the messages place
WF 1.9	My Account push button to open settings
WF 1.10	Logout push button to log out of the account



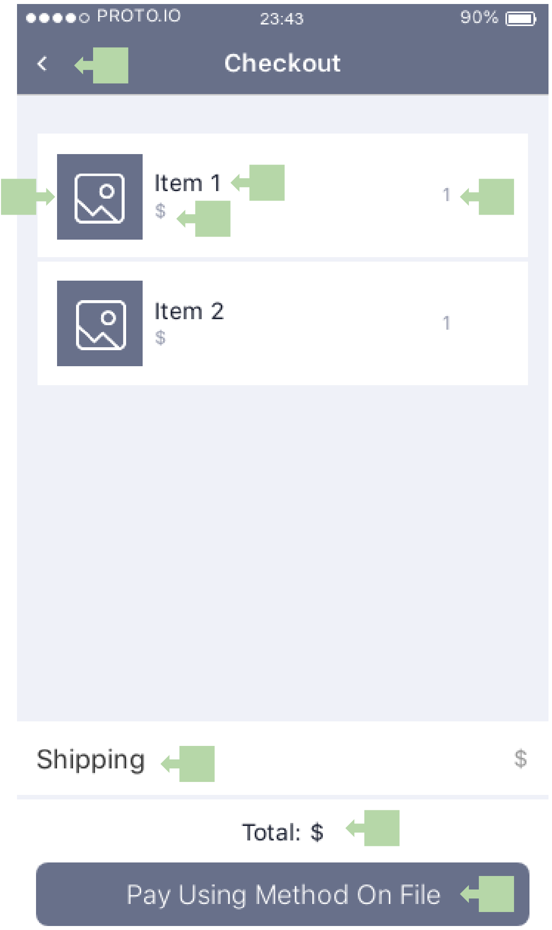
WF2: Cart Page

Wireframe ID	Wireframe Description
WF 2.1	Back arrow button to return to THRIVE's home page
WF 2.2	Estimated delivery based on donating user's entry for the item
WF 2.3	Name of item
WF 2.4	Donating user's username
WF 2.5	Quantity of item
WF 2.6	Shipping price for item based on donating user's entry
WF 2.7	Total shipping cost
WF 2.8	Checkout push button to checkout items in the cart



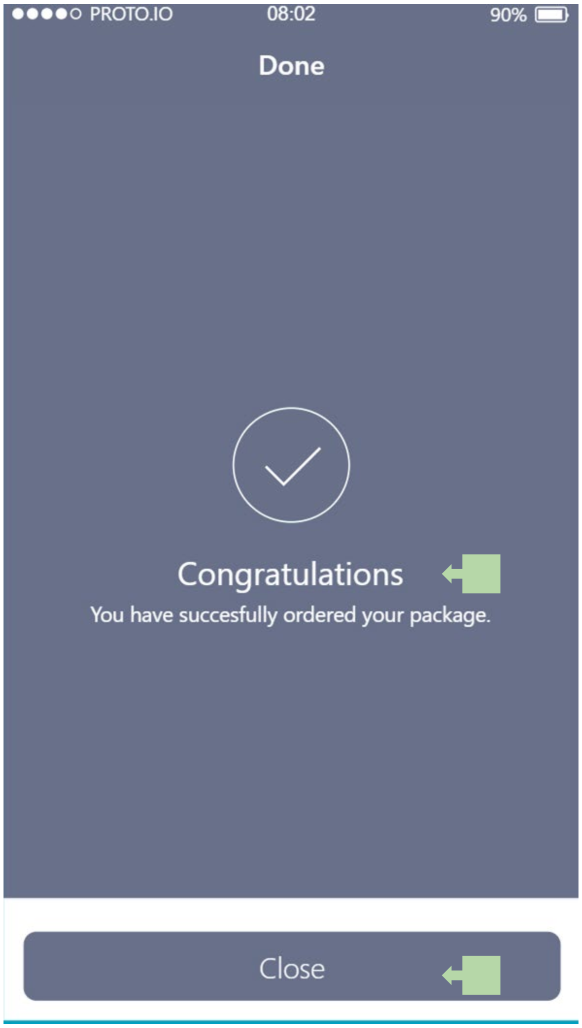
WF3: Checkout Page

Wireframe ID	Wireframe Description
WF 3.1	Back arrow button to return to the Cart page
WF 3.2	Name of item
WF 3.3	Shipping price of item
WF 3.4	Picture of item
WF 3.5	Quantity of item
WF 3.6	Shipping cost
WF 3.7	Shipping cost + 5% THRIVE fee
WF 3.8	Pay Using Method On File push button to finalize payment



WF4: Order Confirmation

Wireframe ID	Wireframe Description
WF 4.1	Congratulations message to let user know their order was successful
WF 4.2	Close push button to go back to THRIVE's home page



●●●●○ PROTO.IO 08:02 90%

Done

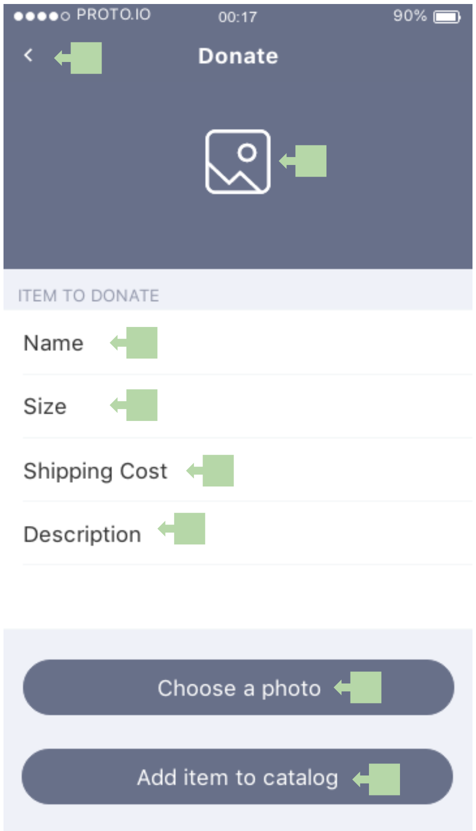
Congratulations

You have succesfully ordered your package.

10.5 Donate Wireframes

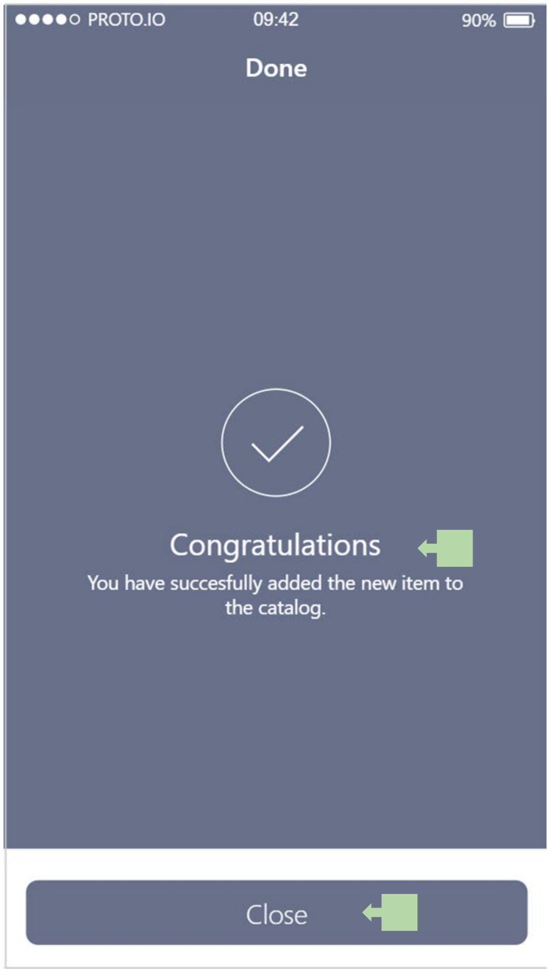
WF1: Donate Page

Wireframe ID	Wireframe Description
WF 1.1	Back arrow push button to return to THRIVE’s home page
WF 1.2	Picture of the item
WF 1.3	Text field for user to enter item’s name
WF 1.4	Text field for user to enter item’s size
WF 1.5	Text field for user to enter shipping cost
WF 1.6	Text field for user to enter description
WF 1.7	Choose a Photo push button to add picture of item
WF 1.8	Add Item to Catalog push button to add the item to the catalog



WF2: Donation Confirmation

Wireframe ID	Wireframe Description
WF 2.1	Congratulations message to let the user know they have successfully added an item to the catalog
WF 2.2	Close push button to go back to THRIVE's home page



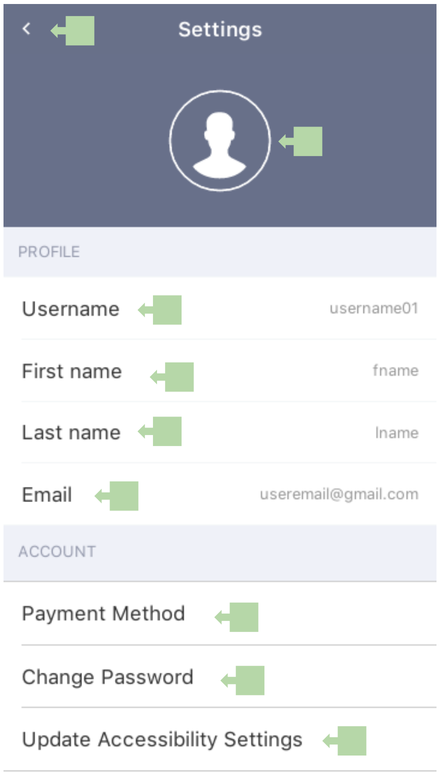
Congratulations

You have succesfully added the new item to the catalog.

10.6 Settings Wireframes

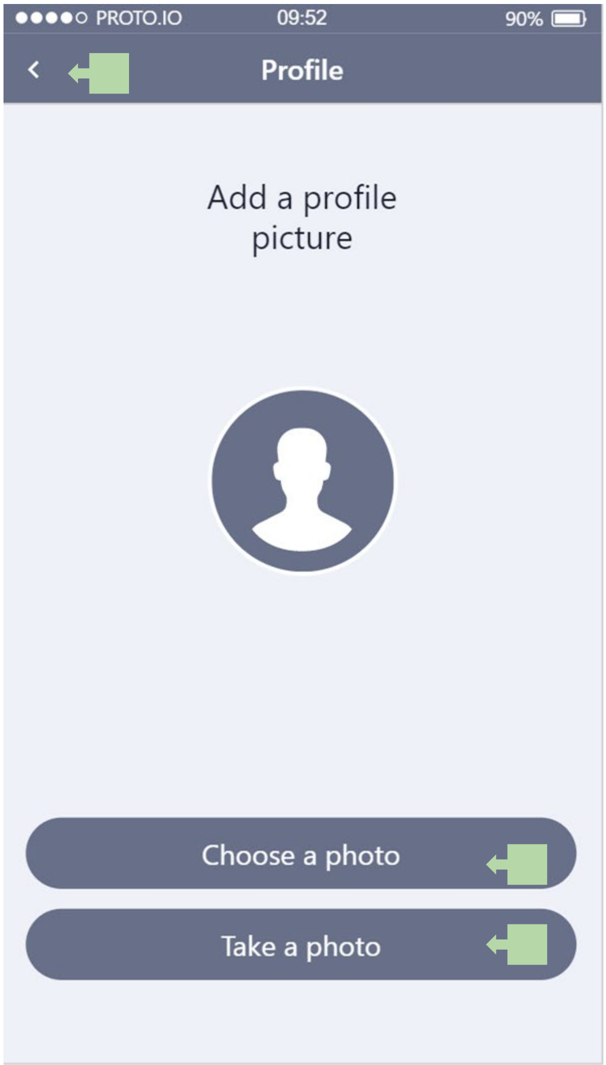
WF1: Settings Page

Wireframe ID	Wireframe Description
WF 1.1	Back arrow push button to return to THRIVE’s home page
WF 1.2	User’s profile picture is a push button that user clicks to add profile picture
WF 1.3	Text field for user to change their username
WF 1.4	Text field for user to change their first name
WF 1.5	Text field for user to change their last name
WF 1.6	Text field for user to change email
WF 1.7	Payment Method push button to go to Payment Method page
WF 1.8	Change Password push button to go to Change Password page
WF 1.9	Update Accessibility Settings push button to go to Accessibility page



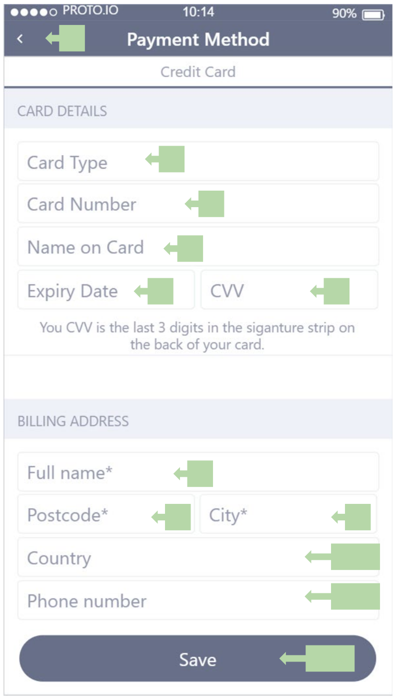
WF2: Add/Change Profile Picture

Wireframe ID	Wireframe Description
WF 2.1	Back arrow push button to return to Settings page
WF 2.2	Choose a Photo button let's user pick picture from their photo album to add as their THRIVE profile picture
WF 2.3	Take a Photo push button let's user take picture to add as their THRIVE profile picture



WF3: Update Payment Method

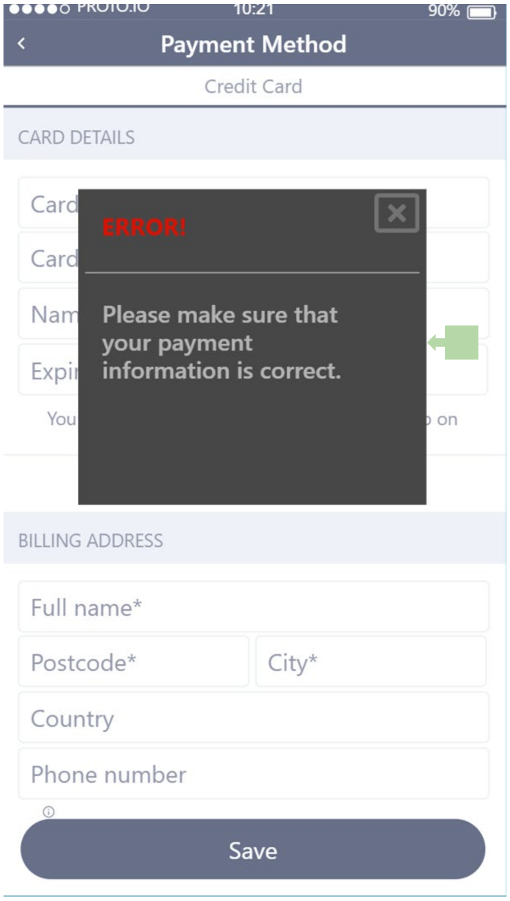
Wireframe ID	Wireframe Description
WF 3.1	Back arrow push button to return to Settings page
WF 3.2	Text field for user to enter card type
WF 3.3	Text field for user to enter card number
WF 3.4	Text field for user to enter cardholder’s name
WF 3.5	Text field for user to enter card’s expiration date
WF 3.6	Text field for user to enter card’s CVV
WF 3.7	Text field for user to enter full name associated with billing address
WF 3.8	Text field for user to enter postal code of billing address
WF 3.9	Text field for user to enter city of billing address
WF 3.10	Text field for user to enter country of billing address
WF 3.11	Text field for user to enter phone number associated with billing address
WF 3.12	Save push button for user to save information entered



You CVV is the last 3 digits in the siganture strip on the back of your card.

WF4: Update Payment Method Alternative - Wrong Information

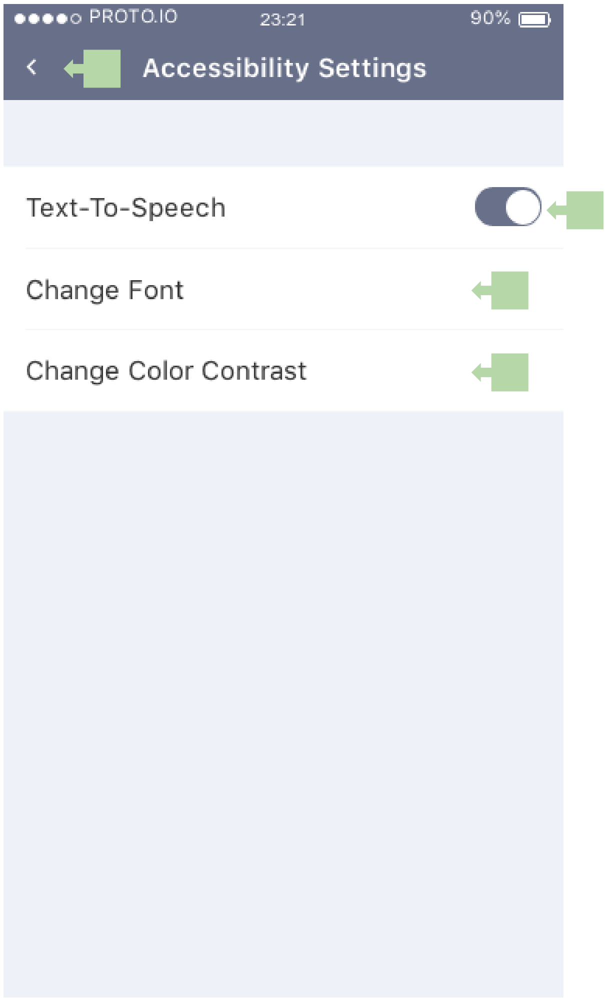
Wireframe ID	Wireframe Description
WF 4.1	Error window, indicating that the information entered is incorrect, with [x] push button to dismiss



Please make sure that your payment information is correct.

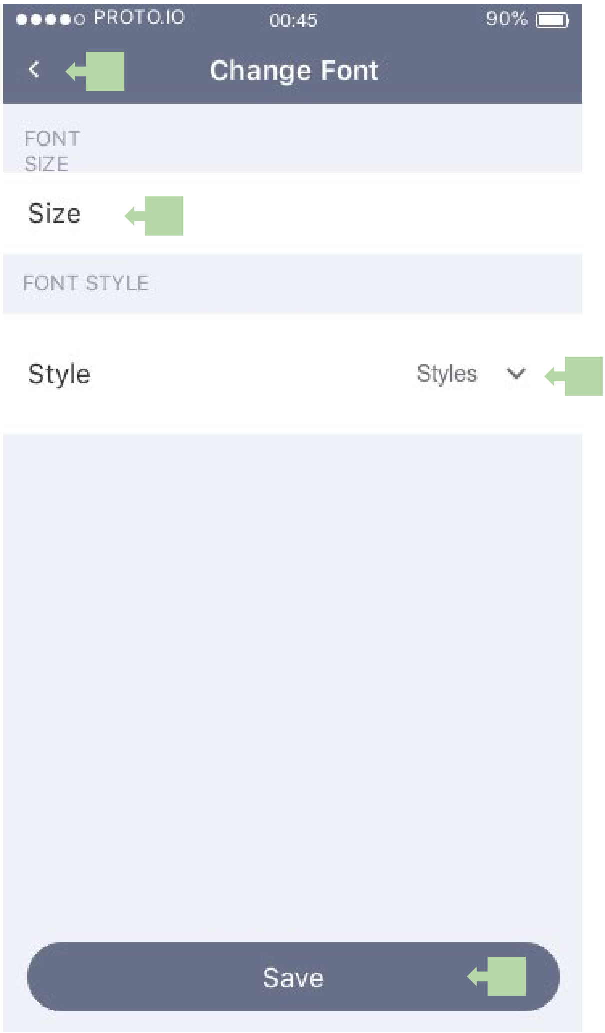
WF5: Accessibility Settings Page

Wireframe ID	Wireframe Description
WF 5.1	Back arrow push button to return to Settings page
WF 5.2	Text-To-Speech button, pushed to the right turns feature on, pushed to the left turns feature off
WF 5.3	Change Font push button to go to Change Font page
WF 5.4	Change Color Contrast push button to go to Change Color Contrast page



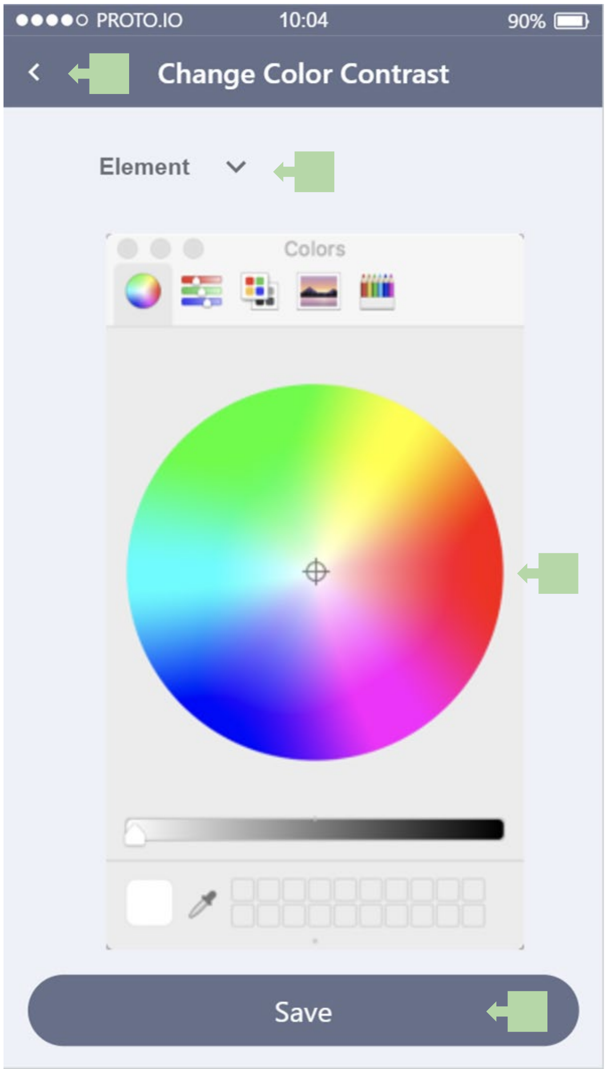
WF6: Accessibility Settings - Change Font

Wireframe ID	Wireframe Description
WF 6.1	Back arrow push button to return to Accessibility Settings page
WF 6.2	Text field for user to input desired font size
WF 6.3	Drop down Styles menu that gives user options for font styles to pick from
WF 6.4	Save push button to save the user's desired font



WF7: Accessibility Settings - Change Color Contrast

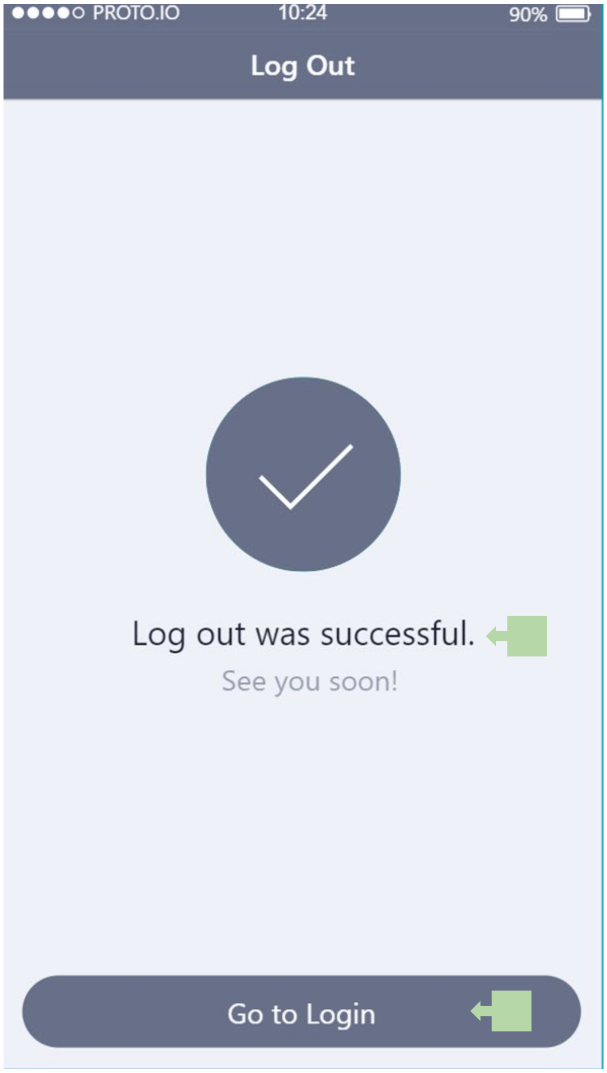
Wireframe ID	Wireframe Description
WF 7.1	Back arrow push button to return to Accessibility Settings page
WF 7.2	Drop down menu with different elements to change each item's color
WF 7.3	Color wheel button to decide on the element's color
WF 7.4	Save push button to save the user's desired color contrast



10.7 Logging Out Wireframe

WF1: Logging Out

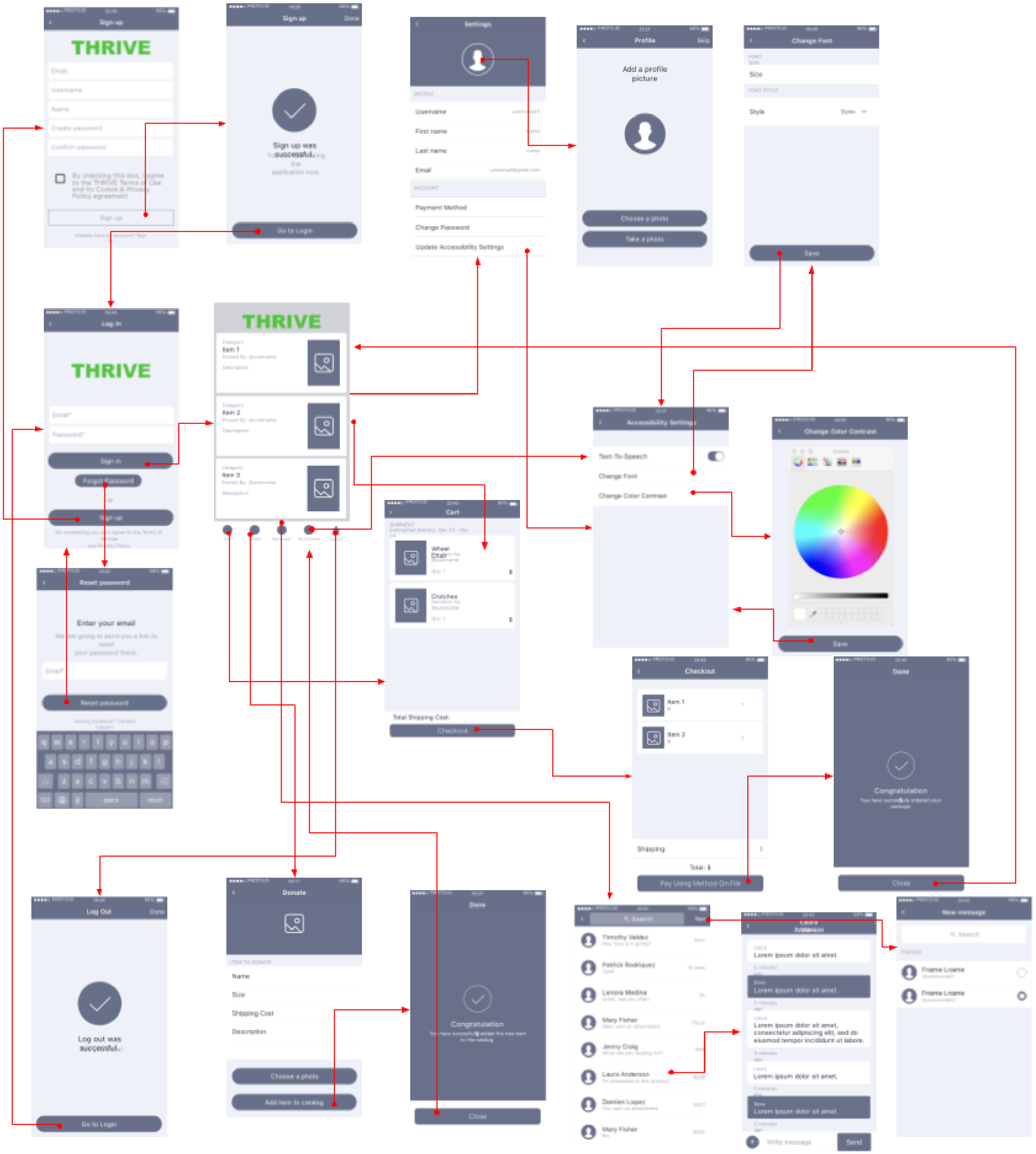
Wireframe ID	Wireframe Description
WF 1.1	Message to let user know that they successfully logged out of their THRIVE account
WF 1.2	Go to Login push button to return user to Login page



Log out was successful.

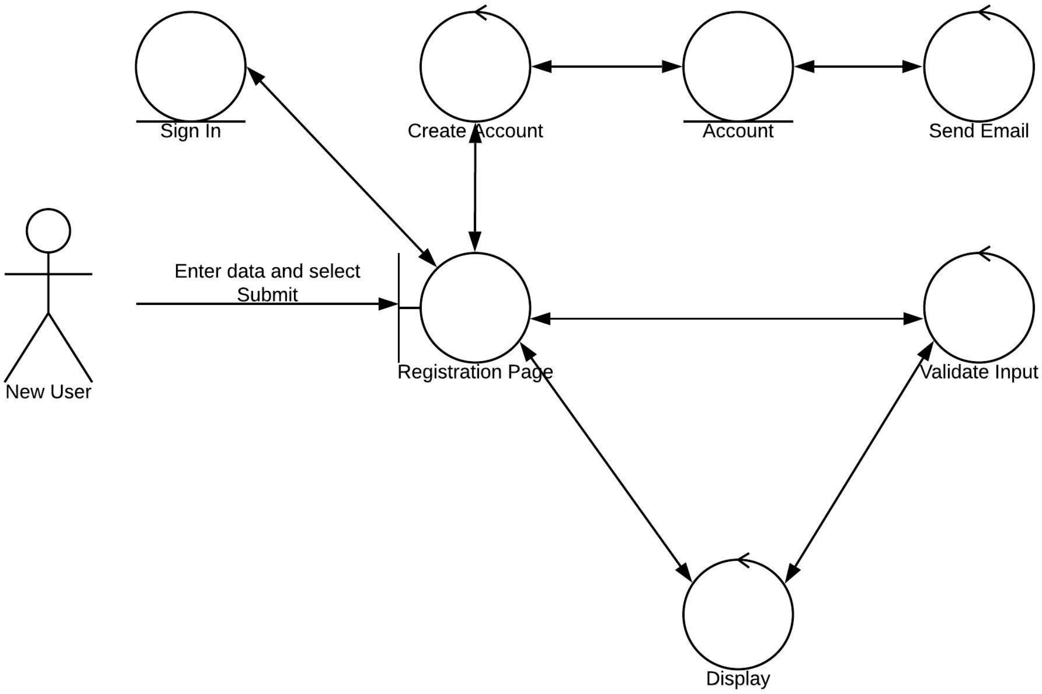
See you soon!

11. Wireframes Navigation Flow:

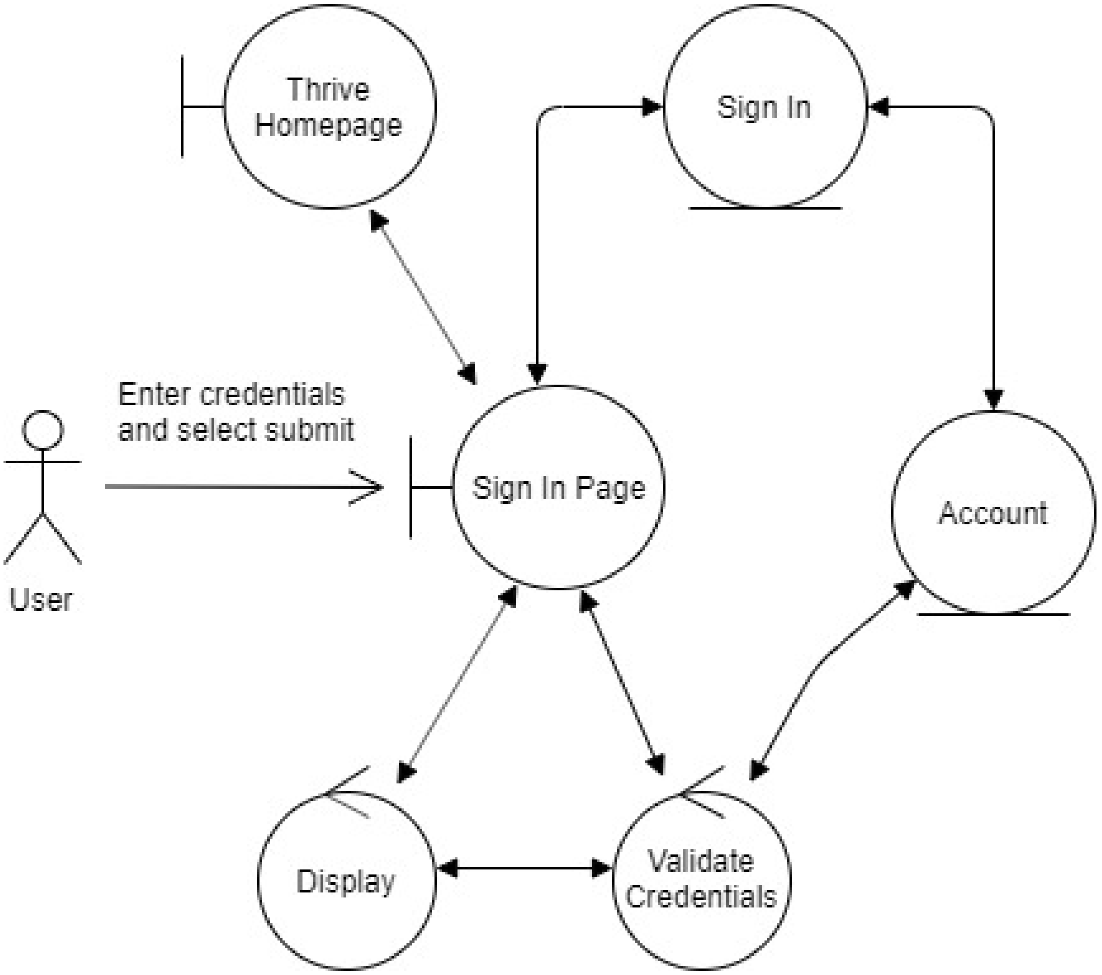


12. Robustness Diagrams:

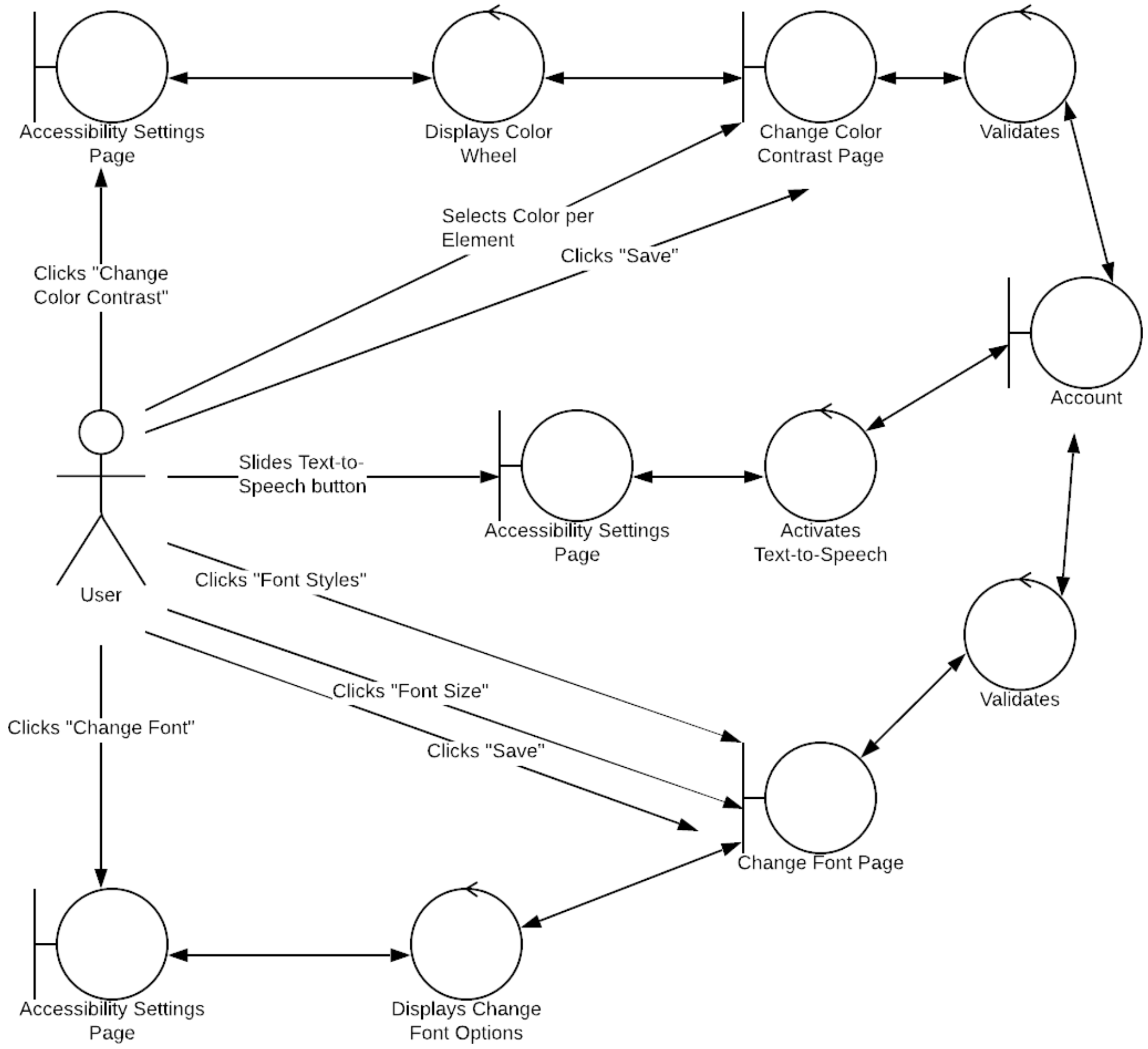
RB1: Account Registration



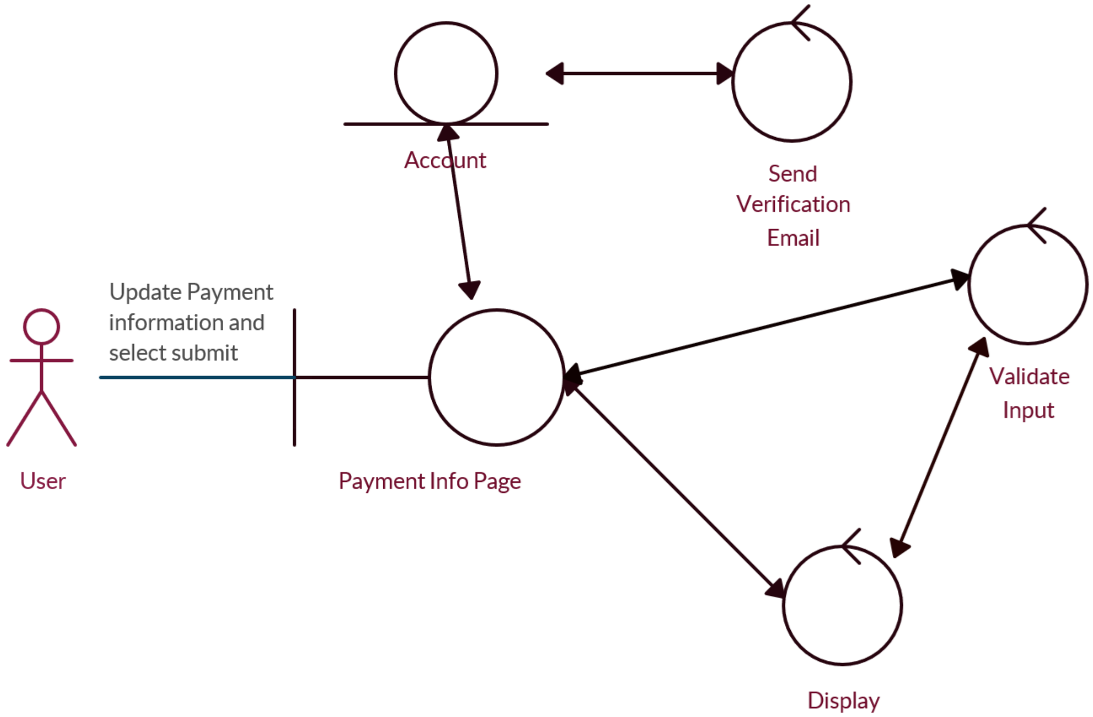
RB2: Signing In



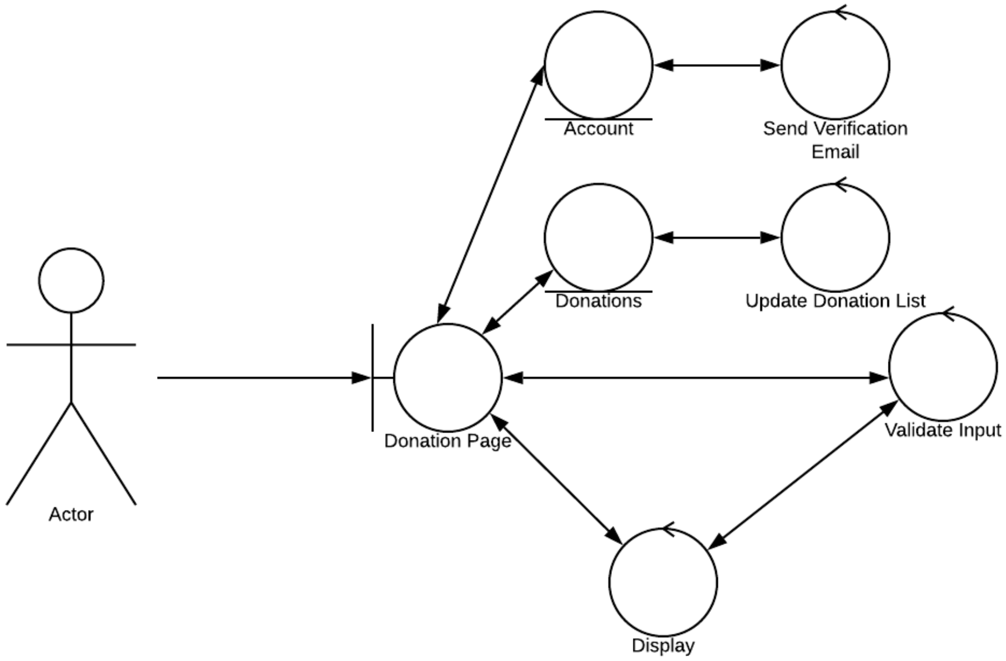
RB3: User Accessibility Settings


Accessibility Settings Page
Displays Color Wheel
Change Color Contrast Page
Validates
Selects Color per Element
Clicks "Save"
Clicks "Change Color Contrast"
Account
Slides Text-to-Speech button
Accessibility Settings Page
Activates Text-to-Speech
User
Clicks "Font Styles"
Validates
Clicks "Font Size"
Clicks "Change Font"
Clicks "Save"
Change Font Page
Accessibility Settings Page
Displays Change Font Options

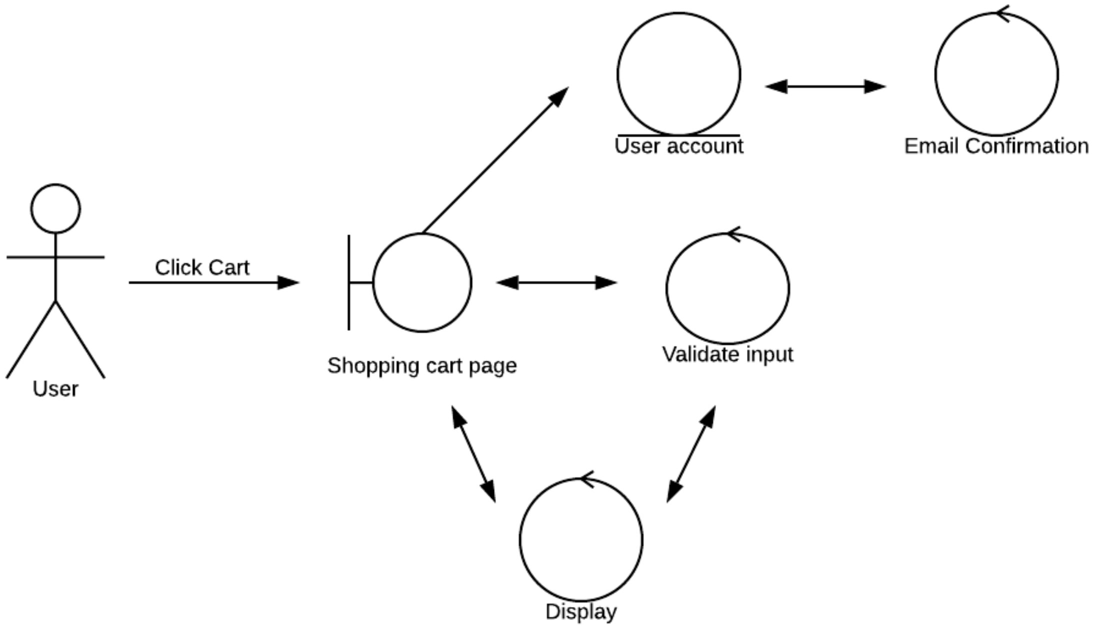
RB4: Payment Method Update



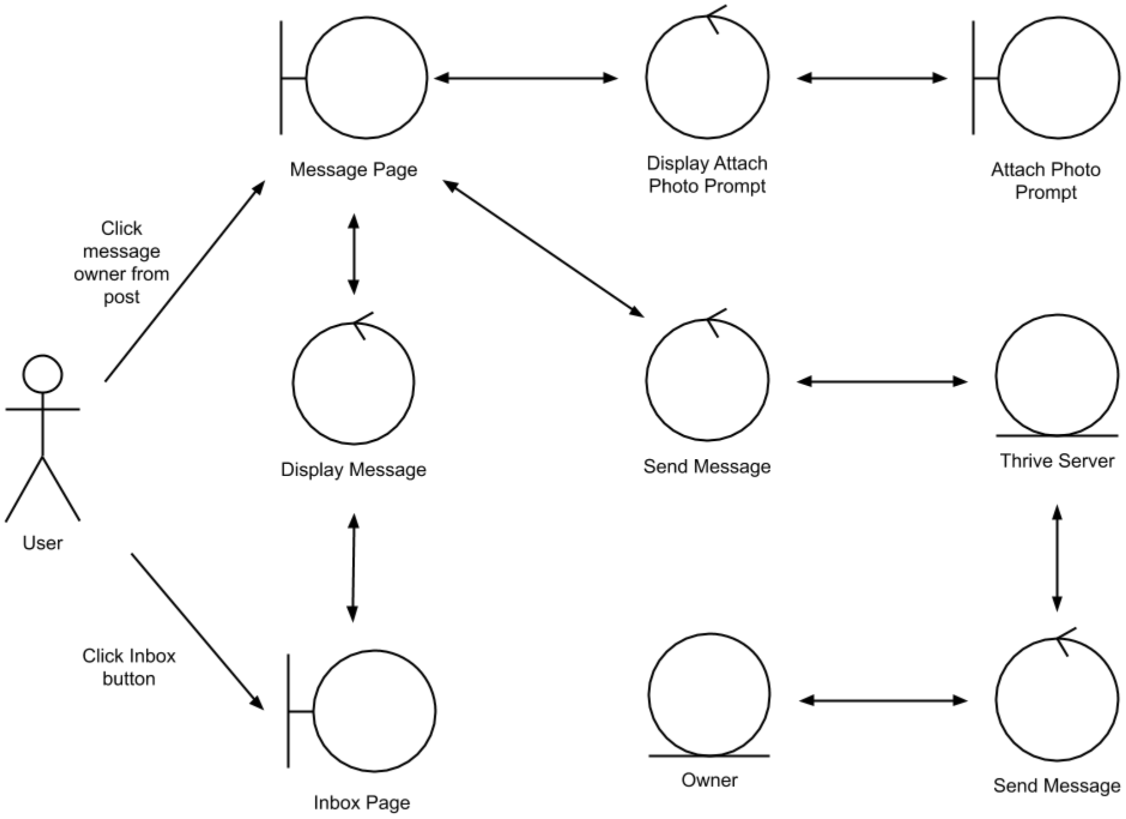
RB5: Product Donation



RB6: Product Purchase

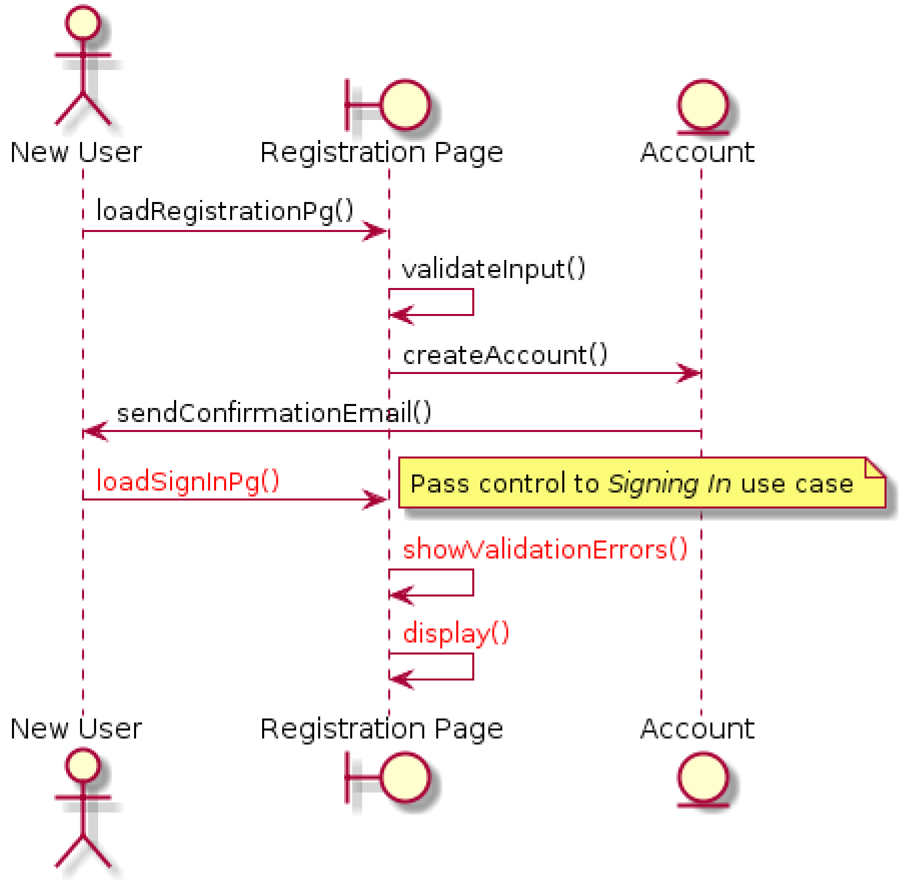


RD7: User Messaging

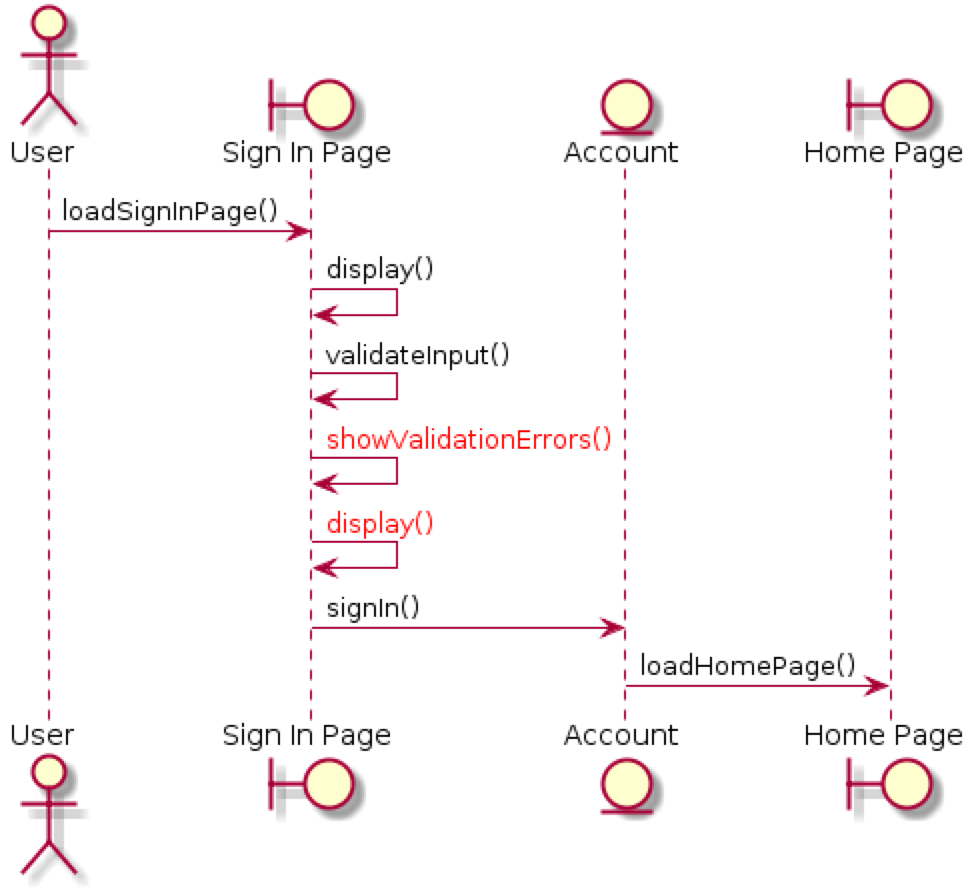


13. Sequence Diagrams

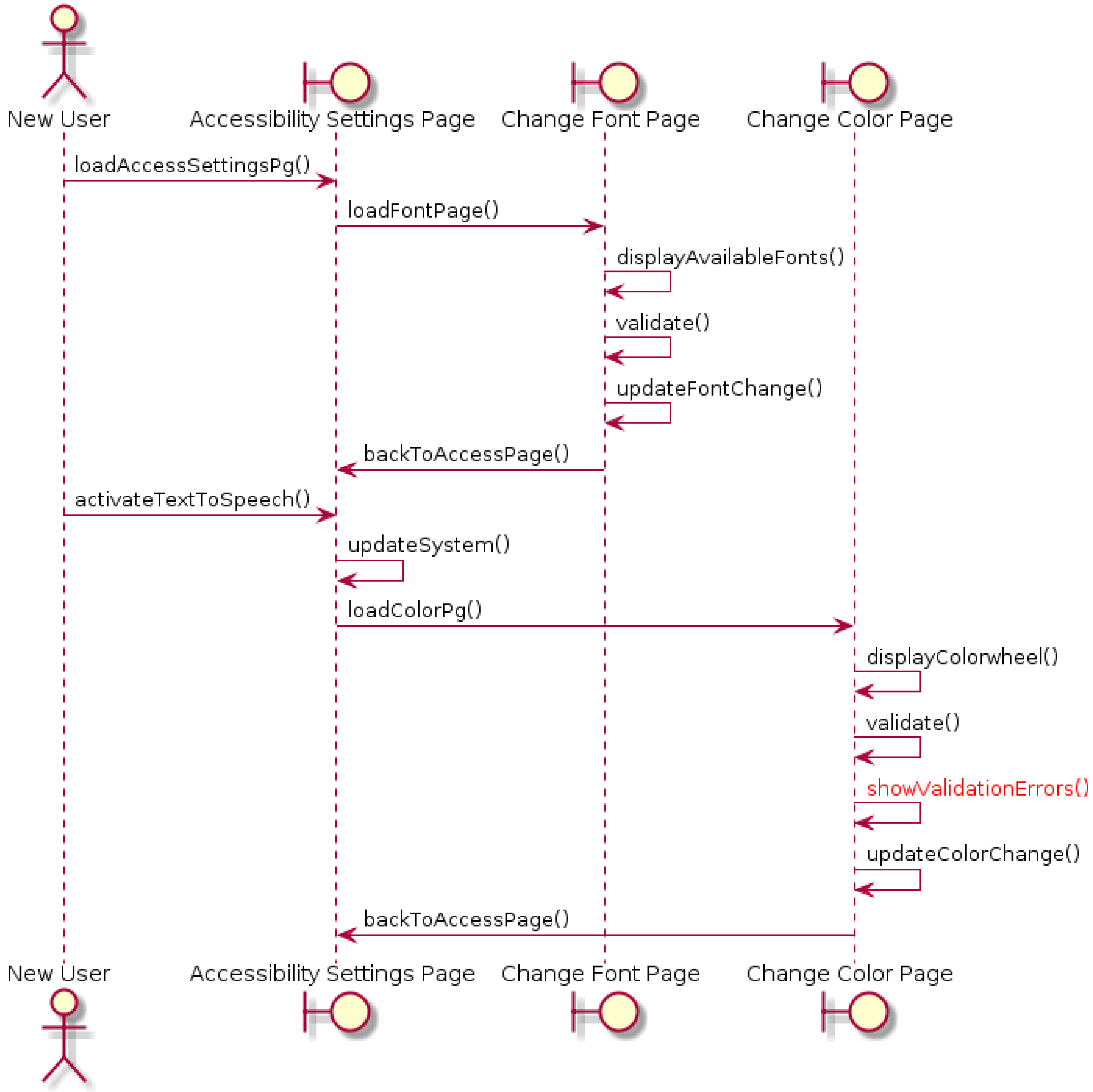
SD1: Account Registration



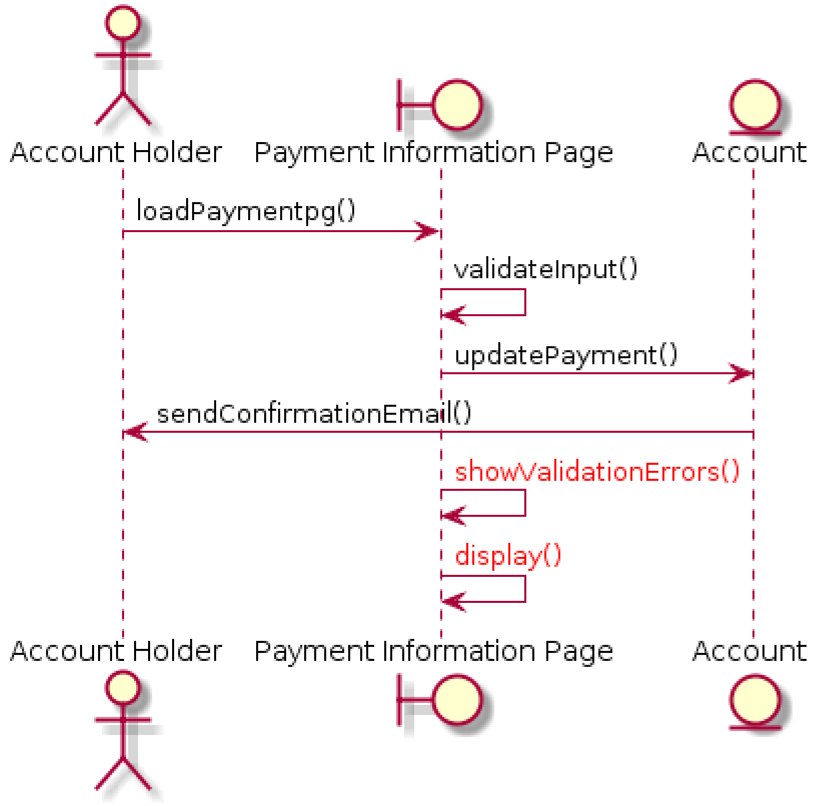
SD2: Signing In



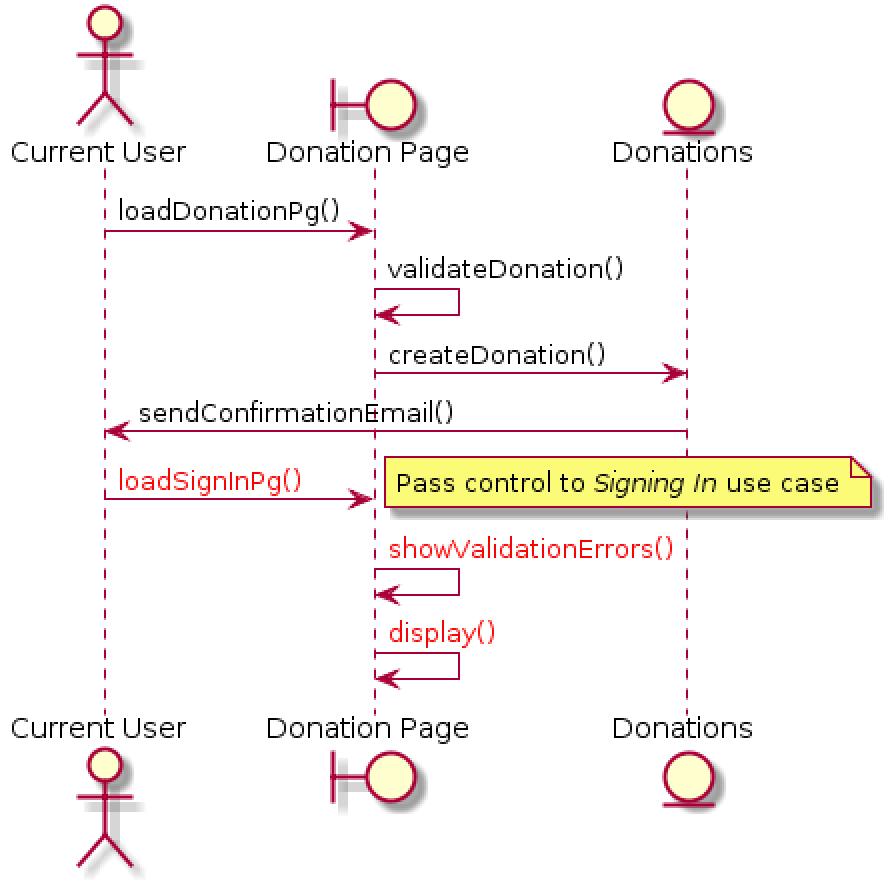
SD3: Accessibility Settings



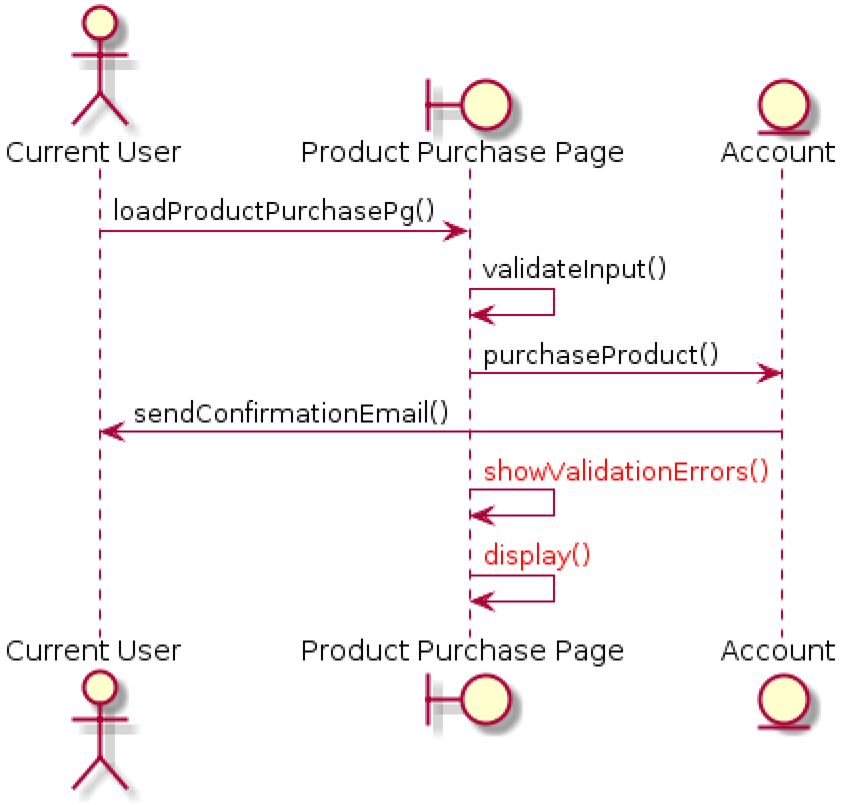
SD4: Updating Payment Information



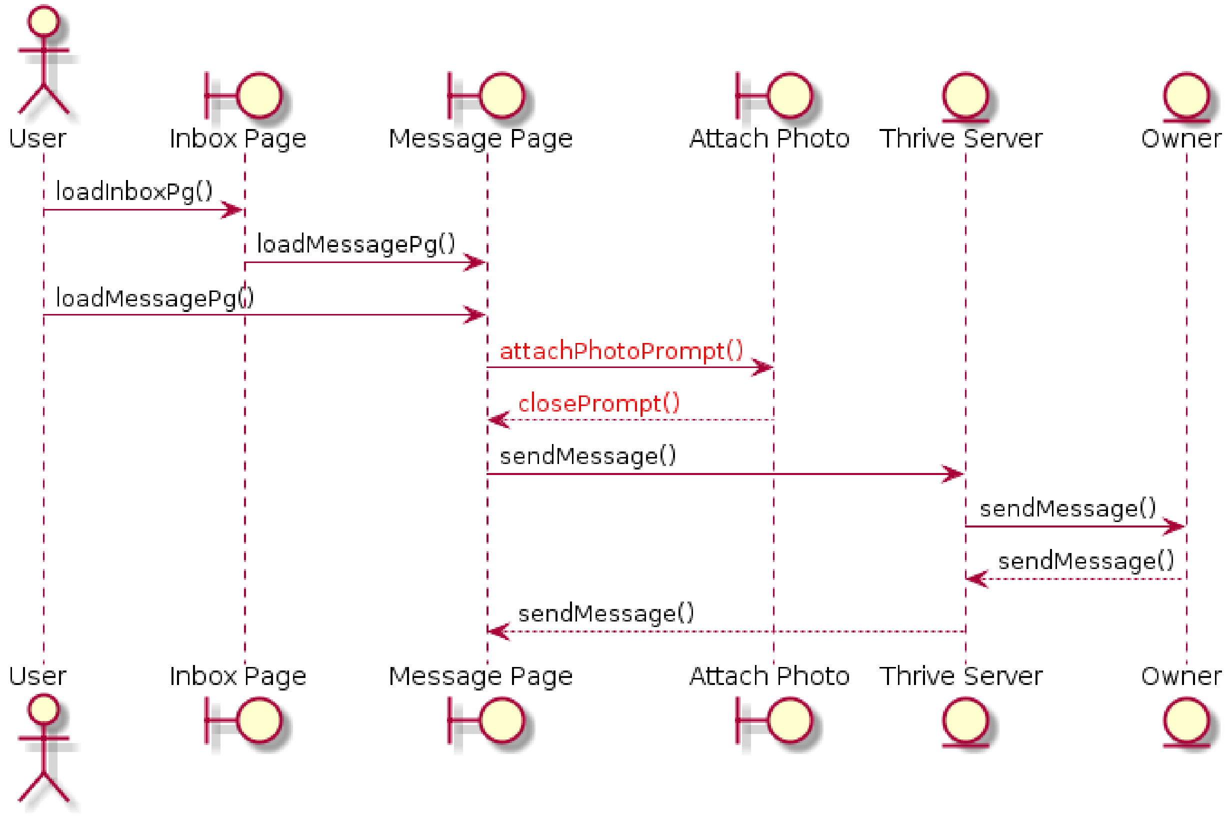
SD5: Product Donation



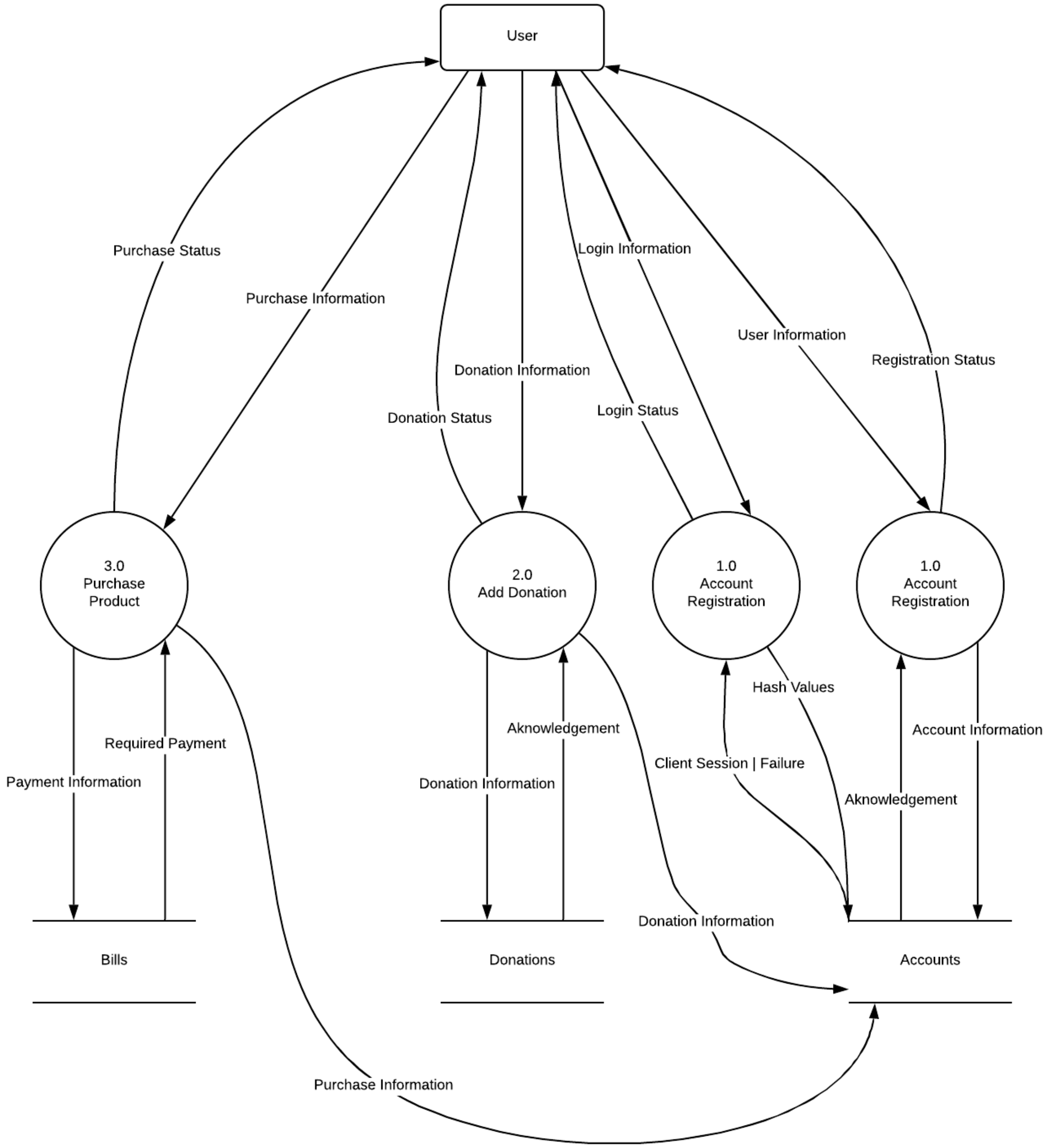
SD6: Product Purchase



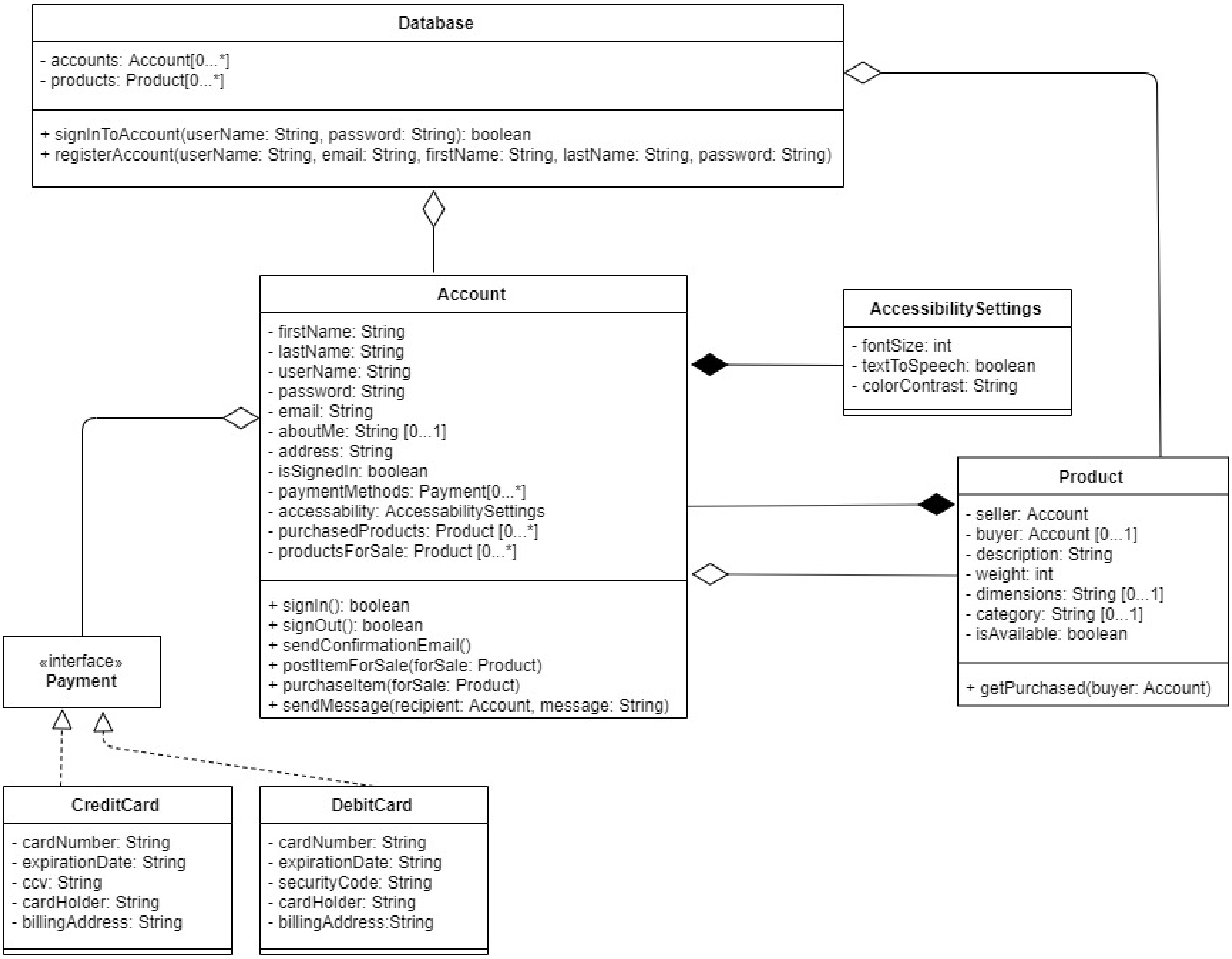
SD7: User Messaging



14. Data Flow Diagram



15. Class Diagram



16. Document Review by Computer Love

16.1 Consensus

Team BAMF has provided our team (Computer Love) with an extensive document outlining the Thrive system. After reviewing the documentation, our team (Computer Love) is willing to bid with conditions for this project, as long as the changes outlined below are made.

16.2 Feedback

16.2.1 Business Proposal

The business proposal is solid. It describes the background and reasoning for the Thrive system, which gives us an understanding of the expectations this project was intended to meet.

16.2.2 Software Requirements Specification

The software requirements are well-defined. This will give us a good idea of what the system should do. There are just a few minor issues that need fixing.

In section 4.1.2 Medical Equipment Catalog Requirements on requirement FR-MEC-03.01, it states that the donor can add the shipping cost to the equipment they are adding (donating) to the catalog. Shipping rates tend to vary based on the shipping company and distance shipped, which is hard to determine ahead of time before a sender's destination address is identified. Is this shipping cost a set fee added by the donor? If so, it would make sense to rename this cost to “donor fee” or something similar.

In section 4.2.2 Reliability in requirement NF-RL-01, the term “fast response time” is not a specific value. It would be helpful to know the exact minimum time the Thrive system must respond to user interactions.

16.2.3 Domain Diagram

Overall the domain model looks well-constructed. Some of the connections between objects are missing a specific relationship (aggregation, composition, or inheritance). For example, the relationship between Payment and Order are unknown, but we are assuming it is some sort of “has-a” relationship. It would helpful to make these unknown relationships explicit.

16.2.4 Use Cases

The use case diagram looks well designed, and the relationships between use cases make sense. In general, the use cases have a decent structure, but there are some modifications that could be made to make the use cases more explicit. After these use cases are updated, the activity diagrams, robustness diagrams, and sequence diagrams will also need to be updated for consistency.

UC1: Account Registration

The corresponding activity diagram (AD1) has an option for when the user cancels the registration. The corresponding sequence diagram has an alternative option for when the user decides to sign in with an existing account. The use case should be updated to include these options as alternatives.

UC3: Setting Up Accessibility Settings

The corresponding activity diagram (AD3) has an option for when the user cancels their setting selection. The use case should be updated to include this option as an alternative.

UC4: Selecting Payment Information

The corresponding activity diagram (AD4) has an extra step performed by the system to “verify billing information”. The use case should be updated to include this step.

UC5: Product Donation

In step 4, the term “new user” is used, while the rest of the use case uses “current user”. It would be useful to change “new user” to “current user” for consistency. The sequence diagram (SD5) includes an alternative for when the user chooses to sign in. This use case should be updated to include this alternative option.

UC6: Product Purchase

Steps 1 and 2 seem out of scope for the current use case. These steps describe the actions taken by the user to get to this use case, and should not be included in the use case. After step 3, there should be a step where the system should display some input form for the user to enter their shipping address, contact information, and payment option. Before step 7, there should be a step where the system validates the input fields entered by the user, since the alternatives hint that some validation of input values is needed. In the use case diagram in section 8, it shows that this use case invokes the “Selecting Payment Information” use case. Step 6 in this use case should be updated to make this invoke explicit, such as “invoke Selecting Payment Information use case”. The sequence diagram (SD6) includes an alternative option for when the user chooses to sign in. This use case should be updated to include this alternative option.

UC7: User Messaging

The term “product owner” is used, while the domain diagram uses the term “donor”. This use case should be updated to be consistent with the domain diagram. After step 3, there should be a step where the system delivers the message to the donor. There should also be an alternative option for when the user or donor decides to end the conversation.

16.2.5 Activity Diagrams

The basic structure of the activity diagrams looks good. There are a few adjustments to be made that would increase the clarity of these activity diagrams.

AD1: Account Registration

There should be a step for when the system displays the registration form, as mentioned in the corresponding use case (UC1). The decision diamond for checking registration input should be on the Thrive System side, since the Thrive System is the one that validates the input. In addition, there should be a step for when the system displays an error message for invalid input (as stated in UC1 alternative options). In addition, what is the box called “confirmation email” for? Does this represent the email object that is sent to the user? If so, it might be better to omit this from the activity diagram, which focuses on the flow of actions (not data).

AD2: Signing In

The decision diamond that validates user login information should be on the Thrive System side, since the Thrive System is the one that validates the login information.

AD3: Updating Accessibility Settings

The decision diamond that validates user input should be on the Thrive System side, since the Thrive System is the one validating user input.

AD5: Product Donation

What is the “validation is sent” step for? If it is to display a confirmation message, it would be helpful to rename it to “display ‘validation is sent’ message” and put it on the Thrive System side, since it is the one doing the displaying.

AD6: Product Purchase

Not all outgoing arrows from decision diamonds have condition guards labeled. It would be helpful to label these condition guards so that we can determine which condition triggers a particular flow of action. The decision diamond that checks user purchase information should be on the Thrive System side, since it is the one doing the validation. The “review order summary” action has two outgoing arrows which go to two different flows. It might be clearer to have an extra decision diamond that checks whether the user clicked “place order” or chose one of the options in the other decision diamond (which also does not have labeled condition guards).

AD7: User Messaging

The “owner” actor should be renamed to “donor” to be consistent with the domain diagram. After the “select message owner” step, there should be a step where the Thrive System displays a message field, as mentioned in the corresponding use case (UC7). There should also be alternative steps if the user chooses to attach a link or photo (as mentioned in UC7).

16.2.6 Wireframes

The way the wireframes are laid out is very informative, especially with having a table explaining what each aspect of the page is. Some aspects between the other diagrams and the wireframes are a little inconsistent which may lead to confusion.

There seems to be a missing wireframe/page for when the user is ready to purchase the items they have added to the cart, as described in UC6. This missing page should include an input form for the user to input their shipping address, contact information, and payment option.

10.1 Create Account Wireframes - WF1: Create Account Home

WF 1.6 is a checkbox that is not described in the activity diagram meaning there is no way to tell what this function does. Is WF 1.7 available only after selecting WF 1.6? The functionality provided by WF 1.6 should be incorporated into the Account Registration use case, activity diagram, robustness diagram, and sequence diagram.

10.4 Cart Wireframes - WF2: Cart Page

For WF 2.2, it speaks about delivery date as if for a single equipment being ordered, but how would the estimated delivery time be changed if multiple items are being purchased with different delivery dates.

16.2.7 Robustness Diagrams

The robustness diagrams need some work, but the basic idea is there. Some modifications will need to be made to make the robustness diagrams more clear and consistent with the use cases and activity diagrams.

It would be helpful to use the actual page names from the wireframes section for the boundary objects in the robustness diagrams. For example in RB1, the “Registration Page” boundary object can be renamed to “Create Account Home” which is the title of the equivalent page in section WF1.

What does the “Sign In” entity object do? It is not mentioned in the domain diagram or sequence diagrams. If it performs sign in validation, it might be clearer to use the Account object for that.

Boundary objects cannot talk to entity objects. They can only talk to controllers. It would be helpful to fix the diagrams that have this mistake. For example in RB4, the “Payment Info Page” boundary object talks directly to the “Account” entity object. It would make more sense for the “Validate input” controller to talk to the “Account” object, since it will probably need to update the payment info setting in the user’s account.

Since the wireframes have named pages for errors situations (such as Create Account Alternative - Fields Incomplete), it would be helpful to include these error message pages into the robustness diagrams (for handling the alternative options in the use cases). For example in

RB1, if user input is invalid, the system displays the “Registration Page” again. It would make more sense for the system to display the “Create Account Alternative - Fields Incomplete” page, and then route back to displaying the “Registration Page”.

There are a lot of double-sided arrows, which indicate flows in both directions. Not all arrows need to be double-sided, and removing unnecessary double-sided arrows will clear up the program flow. For example in RB1, the double-sided arrow from the “Display” controller to the “Registration Page” boundary object only needs a one-sided arrow pointing to the “Registration Page”. The “Display” controller only displays the “Registration Page” and does not do anything else, so it does not make sense that the program could flow from the “Registration Page” back to the “Display” controller. Another example in RB1 uses double-sided arrows between the “Registration Page” and “Validate input” controller and between the “Registration Page” and the “Create Account” controller. It would make more sense for there to be a one-directional arrow from the “Registration Page” pointing to the “Validate input” controller, and then have the “validate input” controller have a one-directional arrow pointing to the “Create Account” controller (assuming the input is valid). This makes more sense, since the “validate input” controller does not need to display the “Registration Page” again before calling the “Create Account” controller.

RB2: Signing In

The “thrive homepage” entity object seems like it would be a better fit as a boundary object. There should be a controller (such as “display”) between the sign in page and the thrive homepage.

RB3: User Accessibility Settings

There are “validates” controllers, but there is no flow controllers for when input is invalid.

RD7: User Messaging

The title “RD7” is misspelled. Maybe it should be “RB7” to be consistent with the rest of the robustness diagram titles. Maybe the single “Display” controller should be split into two controllers for clarity--one for the “Message Page” and another for the “Inbox Page”.

16.2.8 Sequence Diagrams

The sequence diagrams need some work, but the basic idea is there. Some modifications are needed for better clarity and consistency.

It would be helpful to use the actual page names from the wireframes section for the boundary objects in the sequence diagrams. This was the same problem encountered with the robustness diagrams.

In general for each sequence diagram, it would be helpful to show the user action that triggered the system to display a new page (or validate input, etc.). This is best done by including the page the user was previously at before the use case events (and pages) were triggered. For example in SD1, the user could be at the home page (thus the sequence diagram would have a boundary object for the home page). The user then clicks on the “sign in” button on the home page (thus there would be an arrow pointing to the home page object stating that the user clicked the “sign in” button). Then, there would be an arrow from the home page object to the “Registration Page” object with the method “loadRegistrationPg()”.

For alternative options, it would be helpful to include a little note (comment) next to the alternative (red) arrows that describes the alternative option being handled.

There are a bunch of “display()” methods that start and return to the same page. These seem unnecessary, since the system does not leave the original page. For example in SD1, the “display()” method on the very bottom arrow (for the invalid input alternative) seems unnecessary, since the system has not left the “Registration Page”. This “display()” method would make sense if the “showValidationErrors()” method displayed an error page (which was recommended for the robustness diagrams). Then, the “display()” method would start from the error page and point to the “Registration Page”.

SD3: Accessibility Settings

There are no methods for the alternative options mentioned in the corresponding use case (UC3)--such as when user input is invalid.

SD7: User Messaging

There should be arrows for alternate options when the user or donor decide to end the conversation. In addition, the term “owner” should be updated to “donor” to be consistent with the domain diagram.

16.2.9 Data Flow Diagram

The data flow diagram looks pretty good. However, there are two processes named the same “Account Registration”. It would be helpful to give one of those processes a different name, such as “Account Login” for the process that handles account login information.

16.2.10 Class Diagram

The class diagram looks good, and will be helpful when implementing the Thrive system. Classes are well organized and class relationships are logical. One odd thing was that there are two relationships between “product” and “account”. We are assuming this means the relationship is complex, but this understandable and syntactically correct, since a “product” will have “donor” and “buyer” accounts, and “account” would have purchased “products” and “products” for sale. However, from the development team perspective, It might be easier to just use one relationship (and explain the complex relationships in a separate comment).

17. Rebuttals: Implementation Team’s Revision

While some of the revisions suggested by the implementation team were applied to our final document, due to time constraints, we were unable to meet all of their requests.

17.1 Rebuttal for Wireframes

To do the wireframes, we chose to use the software called ProtoIO, which is only free for a given period of time. Since we have exceeded the free trial period, we no longer have access to the wireframes to make any changes. The only way to make all the changes requested by the implementation team would be to recreate them all one-by-one, so due to time constraints, we will not be making these changes.

17.2 Rebuttal for Requirements

FR-MEC-03.01
Added terminology “estimated shipping cost” because weight and dimensions of item can be used to estimate shipping costs.

17.3 Rebuttal for Use Cases and Diagrams

After review of requested changes and conference with development team, it has been decided that current Use Cases and all subsequent diagrams sufficiently describe all aspects of conduct on Thrive platform.

18. Glossary

- **API (Application Programming Interface)** – Refers to an interface or communication protocol between dependent systems or components. It exposes a number of functions or methods using one of a number of industry API standards.
- **Catalog** – Refers to a digital catalog comprised of categorized lists of products available for purchase.
- **Credentials** – Refers to a user's username and password combination.
- **Donor** – Refers to a user that posts medical equipment for donation.
- **Medical Equipment** – Refers generally to medical equipment related to disabilities including, but not limited to: wheelchairs (powered and non-powered), crutches, joint braces, and prosthetics.
- **MTTF (Mean Time To Failure)** – Refers to the predicted elapsed time between inherent failures of THRIVE during normal system operation.
- **Notifications** – Communication provided in the form of pop-ups, emails, or mobile OS notifications (mobile application only). Can include marketing communication from THRIVE, profile updates, user-to-user messaging, discussion board updates, and item-specific notifications.
- **Shopping Cart** – Refers to the digital shopping cart found within THRIVE that allows one or multiple items to be stored for the user to purchase.
- **System** – Refers to one or more individual components of THRIVE or the system as a whole.
- **Third Party Services** – Refers to any of THRIVE's partners including, but not limited to, its payment institution partners, shipping operators, and digital platforms as a service (PAAS) partners.