

**Goods Donation Facilitating System  
Requirements Specification**

**Version 2.3.1**

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## 1. Executive Summary

### 1.1 *Project Overview*

With the rise of attention to the discrepancies and shortcomings of our current economic system and its effects on the environment, consumers have become more critical of their role in this system and the global scene as a whole. This has been shown in their efforts in trying to distance themselves from waste production, campaigning and protesting for businesses to join in their efforts, and declining trust in charity organizations, particularly local ones, as corruption scandals give rise to donation hesitance.

In response to this, we have developed a web service that enables and encourages the growth of a circular economy by simplifying the distribution and donation of excess/leftover products between individuals, businesses, and charities.

Our program allows people and businesses to communicate with each other and charities by listing their surplus products and distributing them to interested users. Individuals can post a product picture alongside a pick-up location, and converse with others on the application to give away or receive for free an item that would have otherwise been wrongly thrown away from disuse.

Businesses are able to list the surplus stock they have (or expect to have in the case of food-related businesses) with a heavily discounted price, giving them the ability to profit from products that before would have been considered losses. This new reach of customers, coupled with the 8% of the revenue from sales being automatically donated to a random charity on our service, aids in building a broader customer base based on trust.

In addition to these donations, these entities can offer their products to charities, who can establish their presence and raise awareness towards their causes on our software. Charities can sort and manage these donations, and recruit users as volunteers. Like with donations, volunteer listings can be controlled and applications can be approved based on the user's volunteering history on the app.

Moreover, our service supports simple management operations (viewing, editing, deleting) regarding listings, donations, and business orders, profit visualization, and the generation of donation records for tax deduction purposes.

As the donation process is simplified and made safer through users' ratings and reportings of dangerous, harmful activity, our application allows individuals and businesses to reduce their waste and encourage sustainability as they assist each other and charities in a more hands-on approach that builds strong community relations.

### 1.2 *Purpose and Scope of this Specification*

The objective of this specification is to evaluate the product design as it stands right now and to record the development process based on research of our intended audience and design deliberations and constrictions.

This specification covers requirements regarding the application environment and its actors. As a result, in this scope, we address the following:

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- Detailed documentation of the product's features
- Technical synopsis of system processes and perspectives
- User and system Requirements
- Components & functional/non-functional requirements
- Product usage explanation
- Dependences and restrictions

The following are some aspects that not included in this scope:

- The product's legislative requirements
- Product auditing and financial factors

## 2. Product/Service Description

Our web service aims to promote a circular economy; we want to connect the people with each other, local businesses, and charity organizations in order to fight hyperconsumerism and improve the overall condition of the community as a whole.

Each user will be able to list products that lack utility for them to give away or claim such products from other users in their vicinity. They will also be able to offer their products directly to charities.

Businesses can list the surplus stock they have with a noticeably discounted price. This would allow them to still collect a profit over items that would have otherwise been thrown away. A percentage of the price will be sold will also get donated to one of the charities available in our service.

Charities can raise awareness through our services but also manage donations and recruit users as volunteers.

### 2.1 *Product Context*

This service aims to enable communication between the community, its businesses, and charities in order to facilitate the process of “giving away” for everyone. Similar systems exist in the market, however their focus resides on capital accumulation, instead of the peer-to-peer charital aspect which we aim to follow.

The software simplifies the transactional process of in-kind donating by utilizing GIS software to boost awareness on a user's offers and connect them with charities, incorporating a messaging gateway for individuals to achieve verbal cooperation efficiently, and utilizing payment gateways to further streamline the interaction with businesses in a way that is most familiar to the users. This accessibility-based approach aids in attracting and motivating participation in this simulation of a sharing economy.

### 2.2 *User Characteristics*

Individual

- Create/edit/delete a product listing
- Filter public listings based on product category
- Place a request on a product/volunteer listing

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- Accept/reject a request on their listing
- Communicate with a listing's owner through in-app messaging
- Pay for a business order in the application
- Receive a digital receipt for an accepted order
- Offer a donation to a charity
- Generate donations record
- Report users

### Business manager

- Create/edit/delete a product listing
- Temporarily cancel a listing
- Reject an order within a 2-hour timeframe
- Offer a donation to a charity
- Generate donations record
- Generate listing- or period-specific revenue statistics

### Charity organization manager

- Approve/reject in-app donations
- Filter donations by pick-up or drop-off option
- Create/edit/delete a volunteer listing
- Access a volunteer applicant's in-app volunteering activity
- Filter volunteers by duty or job timeframe
- Rate volunteer

### Platform administrator

- Handle user reports
- Moderate listings
- Regulate business operations and transparency
- Ban business-based users
- Approve charity accounts

## 2.3 Assumptions

- It is assumed that the users are familiar with the English language.
- The users are assumed to have a device with internet access in order to connect to the web service (laptop, PC, tablet, mobile phone, etc.).
- The users are assumed to have a basic knowledge of computer skills in order to access and use the web service.
- For moderation purposes, it is assumed that platform administrators have access to the data of businesses and individuals related to compliance reports.
- It is assumed that the rating system will be used to reward good work, and will also serve as a more accurate measurement of performance and trustworthiness.

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- It is assumed that only administrators are able to add other administrators and can ban users based on their unbiased evaluation of user reports.

### 2.4 Constraints

- The user is required to be logged in the system to access the application.
- The individual is required to have location permissions turned on to access local public listings.
- The charity manager is required to submit their verification letter in order to sign up.
- The user must own a credit card supported by Paypal in order to perform monetary transactions.

### 2.5 Dependencies

- The individual's request on a listing must be accepted before they can leave a rating on the owner user.
- The individual cannot message another individual unless they've placed a request on their listing.
- A donation receipt cannot be generated until the donation is accepted by the charity.
- The charity's verification form must be approved by administrators before the manager can complete their registration.
- The charity manager cannot access a volunteer's email address without accepting their volunteering request.
- The charity manager can rate a volunteer only if their task timeframe has ended.
- Moderation-related actions that result in a ban require a written reason behind the activity from the responsible administrator.

## 3. Requirements

### 3.1 Functional Requirements

| Req#  | Requirement   | Comments   | Priority | Date reviewed | SME reviewed/approved   |
|-------|---|--|----------|---------------|---|
| BR_01 | The system should offer different interfaces for different user roles.            | Based on the user role, the homepage and the personal listings view will change. | 1        | 24.03.2023    | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_02 | User should be able to create a product listing accompanied by a product photo, a | Attributes like expiration date should be disabled for non-food-based items.     | 1        | 24.03.2023    | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid                     |

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|       | description, listing timespan, pick-up location, and an expiration date.  |   |   |            | Lleshaj, Servi Lila   |
| BR_03 | Business-based user should be able to create a product listing accompanied by a product photo, description, price, and pick-up timeframe.               | If the business is food-centric, the listing should include a section regarding the ingredients and allergens present in the product.     | 1 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_04 | Business-based user should be able to create a pantry box listing accompanied by the possible items the order can have, price, and a pick-up timeframe. | BR_03 extension.<br><br>Some businesses, like restaurants and bakeries, experience fluctuating surplus that cannot be properly predicted. | 1 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_05 | Users should be able to edit and delete their listings.   |   | 1 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_06 | Individual-type users should be able to view all public listings, separated into different interfaces based on owner user type.                         | Listings are automatically filtered based on user location with a 35 km radius. The system will require location permission.              | 1 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_07 | Individual-type users can filter public listings based on product category.   | Categories include: clothing, food, miscellaneous items.  | 3 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_08 | The system should provide a view for the requests placed on a user's  | Each request should be accompanied by the listing photo,  | 1 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi                                      |

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|       | listings.  | the message (if any) from the requester, and an accept button.  |   |            | Parllaku, Henrid Lleshaj, Servi Lila  |
| BR_09 | User should be able to send a request to a product listing.                  | The system should also prompt the user to send a message with the request, although it's optional.  | 1 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_10 | User should be able to send a request to a volunteer listing.                | The system should automatically send the user's email to the charity's manager for further communication.                                   | 1 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_11 | User should be able to message the owner of an individual's listing.         | This allows for the listing's owner to reject/accept a request as they converse with the requester regarding the pick-up location and time. | 1 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_12 | User should be notified of their listing request resolution.                 | The user should be informed if a request has been accepted or rejected.   | 1 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_13 | Individual-type user should be able to accept a request on their listing.    | When a user accept a request, all remaining requests for that listing should be automatically deleted.                                      | 1 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_14 | Individual-type user should be able to place an order on a business listing. |   | 1 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_15 | Business-based user should be  | This is to accommodate  | 1 | 24.03.2023 | Viktoria Bashari, Lorna Gjidia, David   |



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|       | able to reject an order within 2 hours.  | businesses whose surplus stock fluctuates and products may not be available. |   |            | Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila   |
| BR_16 | Business-based user should be able to temporarily cancel a listing for a specified number of days.               |  | 1 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila |
| BR_17 | System should automatically reject orders of a cancelled listing.  |  | 1 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila |
| BR_18 | The system should generate a an OTP for an order, visible to both the business and the individual.               | This is to maintain security for order pick-ups.                             | 1 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila |
| BR_19 | The system should perform the payment transaction of an order automatically when the pick-up time window begins. | The system will keep trak of a business listing's pick-up beginning time.    | 1 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila |
| BR_20 | The system should perform payment of 8% of an order payment to a randomly selected charity.                      |  | 1 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila |
| BR_21 | Business-based user should be able to generate revenue statistics.   | The system should show period- and listing-specific statistics.              | 2 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila |
| BR_22 | Charity-based user should be able to   | The form should include the  | 1 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David   |

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|       | create a volunteer listing.   | duty/task, description, number of people they are looking for, and the timeframe of the duty.              |   |            | Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila   |
| BR_23 | The user's in-app volunteering history should be accessible by charity-based users.             | The history should show the duty performed, and the rating received.                                       | 2 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila |
| BR_24 | System should reject other requests when the volunteer number capacity is filled for a listing. |  | 2 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila |
| BR_25 | Charity-based user can filter accepted volunteers by timeframe.                                 |  | 3 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila |
| BR_26 | Charity-based user should be able to rate accepted volunteers.                                  | This applies to volunteers whose job timeframe has ended.  | 2 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila |
| BR_27 | User should be able to offer a donation to charity profiles in the application.                 | The donation form includes a product photo, product category option, a choice between pick-up or drop-off. | 1 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila |
| BR_28 | User should be able to delete a charity donation offer.   |  | 1 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila |
| BR_29 | User can choose to have their rejected charity  | This option is highly likely to be selected by users,  | 3 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian  |

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|       | donation automatically posted as a listing.  | maintaining the circular economic model, and retaining their engagement in the application.                                    |   |            | Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila   |
| BR_30 | System should save the donation information for record generation after it's accepted.                           |  | 2 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila    |
| BR_31 | Charity-based user should be able to accept/reject a donation.   |  | 1 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila    |
| BR_32 | Charity-based user can filter donations by pick-up or drop-off.  |  | 3 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila    |
| BR_33 | Individual- and business-based users should be able to get the donation receipt of a selected accepted donation. | Donation records are offered as a user benefit for tax purposes, and they are used to incentivize engagement with the service. | 2 | 24.03.2023 | Viktoria Bashari,<br>Lorna Gjidia, David<br>Osoja, Kristian<br>Gjinopulli, Arbi<br>Parllaku, Henrid<br>Lleshaj, Servi Lila    |
| BR_34 | Platform administrator should be able to view all listings.  |  | 1 | 27.03.2023 | Viktoria Bashari,<br>Kristian Gjinopulli,<br>Lorna Gjidia, David<br>Osoja,<br>Arbi Parllaku,<br>Henrid Lleshaj,<br>Servi Lila |
| BR_35 | Administrator should be able to terminate listings and users.  | Administrator has to provide a reason with the removal, which will be sent in an email to the offending user.                  | 1 | 27.03.2023 | Viktoria Bashari,<br>Kristian Gjinopulli,<br>Lorna Gjidia, David<br>Osoja,<br>Arbi Parllaku,<br>Henrid Lleshaj,<br>Servi Lila |

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| BR_36 | Individual-based user should be able to report a user or a listing.   | User has to provide a reason for the report.  | 1 | 27.03.2023 | Viktoria Bashari, Kristian Gjinopulli, Lorna Gjidia, David Osoja, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_37 | Individual-based user should be able to rate a user after their listing request has been accepted.  |   | 2 | 1.04.2023  | Viktoria Bashari, Kristian Gjinopulli, Lorna Gjidia, David Osoja, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_38 | Administrator should be able to accept or reject user reports.  | After 3 reports, the system bans the user.  | 1 | 27.03.2023 | Viktoria Bashari, Kristian Gjinopulli, Lorna Gjidia, David Osoja, Arbi Parllaku, Henrid Llesha, Servi Lilaj |
| BR_39 | Administrator should be able to view the business-users, their last compliance report check, and their total number of negative report results. | Compliance reports are to ensure business transparency & honesty regarding pricing and products listed. | 1 | 27.03.2023 | Viktoria Bashari, Kristian Gjinopulli, Lorna Gjidia, David Osoja, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_40 | Administrator should be able to update reports by uploading the PDF of the latest report, and the resulting conclusion.                         | The result of the report is indicated through a positive or negative button.                            | 1 | 1.04.2023  | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_41 | Administrator should be able to ban a business-user.  | The option to ban a business becomes available after three non-compliances.                             | 1 | 1.04.2023  | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_42 | The system should alert the   |   | 2 | 27.03.2023 | Viktoria Bashari, Kristian Gjinopulli,  |

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|       | administrator of compliance reports that were conducted 1 year.                        |  |   |            | Lorna Gjidia, David Osoja, Arbi Parllaku, Henrid Lleshaj, Servi Lila  |
| BR_43 | The system highlights compliance reports that were conducted longer than 6 months ago. |  | 3 | 27.03.2023 | Viktoria Bashari, Kristian Gjinopulli, Lorna Gjidia, David Osoja, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_44 | Administrator should be able to add a new administrator.                               | The administrator has to provide an email and a password.  | 1 | 27.03.2023 | Viktoria Bashari, Kristian Gjinopulli, Lorna Gjidia, David Osoja, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_45 | Administrator should be able to view all charity verification forms.                   | These are required during charity manager sign up.   | 1 | 28.03.2023 | Viktoria Bashari, Kristian Gjinopulli, Lorna Gjidia, David Osoja, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_46 | Administrator should be able to reject or accept a charity verification form.          |  | 1 | 28.03.2023 | Viktoria Bashari, Kristian Gjinopulli, Lorna Gjidia, David Osoja, Arbi Parllaku, Henrid Lleshaj, Servi Lila |
| BR_47 | System should keep track of the administrator's operations.                            | For accountability purposes.<br><br>Keeping track of the edits they commit, the bans they issue, the new administrators they enter, etc. | 2 | 02.04.2023 | Viktoria Bashari, Lorna Gjidia, David Osoja, Kristian Gjinopulli, Arbi Parllaku, Henrid Lleshaj, Servi Lila |

## 3.2 *Non-functional requirements*

### 3.2.1 Product requirements

#### 3.2.1.1 User interface requirements

The user interface of our application is divided into 4 different main interfaces which depend on the role of the user.

- Signed-out interface

This interface is the first thing the user will see when opening the page. They will either have the option to log in using an existing account by filling the text boxes (email and password) or sign up into a new account where they will define their role in our application (individual, business, charity organization) and create a new account following our instructions (inserting name, username, organization name, etc.) on a basic form format.

- Individual Interface

The user will have a sidebar with a home icon for the “Browse” view, which is the first view shown to the user, a donation icon for the “Donations” view, a message icon for the “Requests” view, a user icon for the “Profile” view, and a plus icon to add a listing.

In the “Browse” view the users will be able to select between three choices in the top navigation bar:

1. Listings: users can see what other users are giving away and submit a request to claim the item through a button on that particular listing’s own page. Users can then contact them through a messaging interface to discuss details such as pickup location or availability.
2. Business listings: users will be able to browse items that businesses are selling. In the page of a particular business listing, accompanying the listing’s information will be a button to place an order on the item.
3. Charity listings: users can view temporary volunteering jobs. Users can select a particular listing, which will show a separate page with the listing’s information and a button to submit a volunteering request.

In the “Donations” view, a list of cards displaying all charities in the app with small accompanying information will be shown. Each card will have a button to create a donation to that particular charity.

Clicking on the button will pull a separate view, with a standard form to fill in the donation details and a button to finalize and send the donation offering.

In the “Requests” view, the user will be shown all the requests placed by other users on their listings. These requests will be shown in the form of cards, which when clicked will pull up the messaging interface between the user and the requester. If the requester has sent a message, it will be shown with a red dot on the corner of the card.

At the bottom of the card will be two buttons to reject & accept respectively the listing.

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In the “Profile” view, the user will be shown their account’s username & email in a small card, under which will be a menu with the following options:

1. “My listings”, which will show the user’s listings in a waterfall card layout with the listing’s title and picture. Clicking on it will show users a separate view with a form, prefilled with the listing’s information, a submission button to register changes to the listing, and a deletion button.
2. “My donations”, which will show the user’s donations in a waterfall card layout with the donation’s title and picture. Clicking on it will show users a separate view with a read-only form filled with the donation’s information. If the donation is accepted, it will also show a deletion button, and a “Generate receipt” button. If rejected, the card will be colored a red hue, and it will show a deletion button and a “Turn into listing” button. If not evaluated yet, it will only show the deletion button.
  - a. The “Turn into a listing” button will show a separate view with a form, prefilled with the donation’s information, and a submission button.
3. “My profile”, which shows the user a form prefilled with their account’s information, and a submission (for updating their account information) and deletion button. When pressed, the deletion button will show a warning pop-up box with a rejection and acceptance button.

The view for adding a listing is a basic form format, with a submission button.

- Business manager interface

The user will have a sidebar with a home icon for the “Homepage” view, which is the first view shown to the user, a donation icon for the “Donations” view, a bill icon for the “Listings” view, and a user icon for the “Profile” view, and a plus icon to add a listing.

In the “Homepage” view, the user will be shown bar charts for the cumulative revenue statistics, and line charts for the monthly and yearly statistics.

The “Donations” view follows the same design as that of the individual’s.

The “Listings” view will show a top navigation bar with two options:

1. Listings, which will show the business’ listings in a waterfall card layout, with the listing’s title and photo. Each card will have a cancellation button which will pull an overlay with a number input box and a submission button. If cancelled, the card will be shown with a grey overlay. When clicked, the card will show a separate view with a form prefilled with that listing’s information, a submission and a deletion button.
2. Orders, which will show in a waterfall card layout, with the order’s listing title and OTP. Each card will have a delete button.

The “Profile” view will show a card with the manager’s username, name, email, and business’ name. Underneath it will be a menu with “My donations” and “My profile” options, both of which follow the same design as that of the individual’s.

## Goods Donation Facilitating System Requirements Specification

The view for adding a listing is a basic form format, with a submission button.

- Charity manager interface

The user will have a sidebar with a donation icon for the “Donations” view, which is the first view shown to the user, a bill icon for the “Listings” view, a people icon for the “Volunteers” view, and a user icon for the “Profile” view.

In the “Donations” view, all donations are shown in a waterfall card layout, with the donation’s photo and title. At the top of the page, will be a donation type filter (pick-up or drop-off).

Clicking on a card will show a separate page with the donation’s information, a rejection and acceptance button.

In the “Listings” view, all the user’s volunteering listings will be shown in a waterfall card layout, with the listing’s title and description. Clicking on a card will show a separate view with a form, prefilled with the listing’s information, a submission (for applied changes) and deletion button.

At the top of the “Listings” view will be a button to add a new listing, which will show a separate view with a form and a submission button.

The “Volunteers” view will show a top navigation bar with two options:

1. Requests: all unevaluated volunteer requests will be shown in a waterfall card layout, with the requester’s username, rating, and the listing’s title. Each card will have a button to show the requester’s in-app volunteering history (which will pull an overlay with the user’s past volunteering, duty name and rating), an accept and reject button. When clicked, the accept button will bring up the Gmail interface with the requester’s email.
2. Volunteers: all accepted requests will be shown in a waterfall card layout, with the requester’s username, and duty name. Each card will have a rating and deletion button.

The “Profile” view will show a card with the manager’s username, name, email, and organization’s name. Underneath it will be a menu with the “My profile” option, which follows the same design as that of the individual’s.

- Administrator interface

The user will have a sidebar with a magnifying glass icon for the “Moderation” view, the default view shown to the user, a gavel icon for the “Regulation” view, and a user icon for the “Profile” view.

The “Moderation” view will have a top navigation bar with two options:

1. “Reports”: user reports will be shown in a carousel format, with a skip, accept, and reject button at the bottom of the screen. Each user report will show the user’s account information and the report reasoning.
2. “Feed”: shows the latest listings in a carousel format, with a skip and remove button at the bottom of the screen.



## Goods Donation Facilitating System Requirements Specification

The “Regulation” view will have a top navigation bar with two options:

1. “Businesses”: all businesses are shown in a list with their name, the date of their last compliance report check, and their total number of negative report results.  
If the business’ number of negative report result is greater than 3, it displays a “Ban” button next to their name. When clicked, an overlay with a password text box and a confirmation button will be shown.  
Next to each business name is an “Add compliance report” button, which shows a file-upload overlay, and a “Positive” and “Negative” button.
2. “Charities”: all charity verification forms are shown in a list, with the charity and manager’s names. Clicking on a form will show a separate view with that form’s information on the charity and manager, and a reject and accept button.

The “Profile” view shows a card with the user’s username and email, underneath which is a menu bar with the “My profile”, which follows the same design as the individual’s, “Add new administrator”, which shows a separate view with a form, and “View operation history” which pulls a separate view of list ordered operation text made by the user.

### 3.2.1.2 Usability

#### **Accessibility:**

The app should be available to all the users as long as internet is available. Some features may be limited if the user has not allowed the application to access its location.

#### **Responsiveness:**

App will be highly responsive in both database and design in order to facilitate the users’ usage of application, make their experience better and also facilitate the process of transaction.

#### **Flexibility:**

The software’s design will follow an extensible architecture so as to allow for easy insertion of updates and leave adequate room for straightforward expansions. The structure’s configuration should be focused on prioritizing resources for high-volume requests, and swift error handling.

#### **Effectiveness:**

The app should be easy to use and understand by all users, both in its design and in its error outputting. It should also easily facilitate the administrators work on keeping order in the community of the application.

#### **Efficiency:**

User actions should be handled with swift ease by the application, and preserved by any possible exceptions. It should also make the communications and transactions between users as easy and simple as possible, by following popular market designs so as to maintain a low learning curve for the users.

## Goods Donation Facilitating System Requirements Specification

### 3.2.1.3 Efficiency

#### 3.2.1.3.1 Performance requirements

- The software will be web based for all users including admins.
- Internet is required for the user to access the web service.
- Location is not mandatory however a handful of features of the web service cannot be accessed without it.
- All individual and manager operations should operate in less than a second.
- The system should support approx. 5000 visitors at the minimum.

#### 3.2.1.3.2 Space requirements

Based on the minimum expected number of users, and their multiple multi-form operations, the site will require 25 GB.

### 3.2.1.4 Dependability

#### Availability:

The application should be available 24/7 from any geographic location when in the presence of an internet connection.

#### Reliability:

Verification and validation techniques to ensure that system-failure errors are caught should be implemented to maintain a low probability of Failure on Demand (POFOD).

#### Monitoring:

All CRUD functionalities will be infused with validation techniques so ensure data compatibility and conformity with the database requirements and standards.

#### Maintenance:

Users will be able to report error messages in case of faulty system behavior, allowing developers to keep track of bugs and their importance hierarchy.

#### Integrity:

- All data transmitted through the server will be subjected to asymmetric encryption for maximum security.
- All administrative operations are logged with a timestamp and the administrator's username.
- Only existing administrators can add new administrators.

### 3.2.1.5 Security

- User registration is accompanied by email verification so as to authenticate all accounts.
- All charity registrations have to be confirmed by an administrator before the charity's account is created.

## **Goods Donation Facilitating System Requirements Specification**

- All processed orders are given a unique OTP to allow businesses to authorize order pick-ups.

### **3.2.2 Organizational requirements**

#### **3.2.2.1 Environmental requirements**

The software itself is cloud-based and prioritizing efficiency at all times, conserving energy. No hazardous materials are allowed to be promoted on the web service through the form of product and business listings.

#### **3.2.2.2 Operational requirements**

- Email verification before user registration finalization.
- Charity verification before manager registration verification.
- Email verification for log-in's.
- CRUD functionality on listings, requests, and orders.
- CRUD functionality on users.
- Messaging interface between individual-type users.
- Conversion of data to match that of the scope data is sent to (e.g.: an order from the perspective of an individual vs. the perspective of a business manager)

#### **3.2.2.3 Development requirements**

- Internet connection is required for service access
- Firebase will be used for the implementation of the messaging interface

### **3.2.3 External requirements**

#### **3.2.3.1 Regulatory Requirements**

The conduct of our application will adhere to the guidelines provided by the General Data Protection Regulation (GDPR) regarding the collection of users' registration and demographic data, the Payment Card Industry Data Security Standard (PCI DSS) to ensure the proper safety of in-app transaction processing. All data sent or received from our application is delivered in an encrypted format so as to prevent access from third parties.

These regulations, in addition to their relevant supplementary laws, will be reflected in our privacy policy.

#### **3.2.3.2 Ethical Requirements**

Users' personal data will not be utilized, sold, or traded with other organizations for marketing purposes. The circumstances in which this data will be utilized by the application are:

1. The management of their account, alongside their requests and orders.
2. To perform relevant functions, such as the generation of nearby stores available on the app, or user specific feed suggestions

## **Goods Donation Facilitating System Requirements Specification**

3. For facilitating the connection of volunteering users with charities: the choice to apply for a volunteering service is accompanied by the waive of consent to share the user's email with the relevant charities.

Outside of the scope of the application environment, user's data will also be disclosed under the instance of legal obligations.

In adherence to our commitment to transparency and user safety, our application will steer clear of bias in algorithmic user feed suggestions. We may utilize properties like reviews and ratings in the generation of such data, however attributes such as number of sales will never be taken into account so as to maintain community objectivity.

### **3.2.3.3 Legislative Requirements**

When first signing up, users will have to read and confirm the terms and conditions, with information on the data that will be used, and the way it will be used within the website. Additionally, it will detail the legal responsibilities of users, both individuals and businesses, regarding the safety of their products, particularly food-based products, which have to comply with base food standards, such as the inclusion of ingredients and allergens present in the product's description.

In accordance with data privacy policies, the users' information will not be shared with undisclosed third parties nor will it be used outside the website. As required by the EU Cookie Law, we will have a dedicated cookie policy and get consent from users before personal information is stored or retrieved on their devices.

In addition to data privacy policies, the website will meet the accessibility, copyright, plagiarism, and anti-spam laws.

### **3.2.3.4 Accounting requirements**

The system records and processes in-app payments for each order placed through a business listing. Payment processing is automated by the system in accordance with business pick-up schedules. Regarding businesses, revenue streams are calculated based on in-app sales. A monthly donation roll-out payment is also calculated and distributed to charities, with approximately 8% of each order payment distributed to a randomly selected organization.

To ensure accurate accounting of these transactions, PCI DSS compliance will be followed by both the application and Payment Service Providers apart of the software.

### **3.2.3.5 Security requirements**

To effectively ensure that only designated individuals, such as administrators, have access to the internal application and information, Privileged Access Management (PAM) technologies will be utilized. In addition to this, all procedures, commands, and access obtained to the central system of the application is traced so as to ensure the compliance of administrators.

## Goods Donation Facilitating System Requirements Specification

In compliance with the GDPR, data safety is largely based on incryption and input filtering/validation. This will ensure that all transmissions of information to and from the application remain secure from external parties (such as users' private information) and that our databases are not compromised

### 3.3 Domain requirements

Our application operates in the niche networking and commerce environment, providing communities the opportunity to shift towards more ecological and humanitarian practices, with the focus on goods exchanges based on the gift economy model, supporting environmentally-friendly business selling procedures, and broadcasting charities' voices.

For this, users are required to have access to an internet connection. The application must facilitate user information security through encryption, in-app communication between individuals for pick-up meet-ups, and in-app payment processing by implementing Payment Service Providers.

Individuals have the ability to choose the recipient of their product. Businesses are able to sell on discount their surplus, to manage order input (cancelling orders before the pick-up timeframe) in compliance with their surplus availability, and to obtain revenue statistics. Charities can receive in-kind donations, put up temporary volunteering jobs, and accept/reject volunteering requests.

## 4. Software Design

### 4.1 User scenarios

#### Individual

##### US\_I\_01: Individual registers on the platform

1. User clicks on "Sign up" button.
2. User clicks on "Personal use" option.
3. User writes in username, full name, email, password, and confirmation password.
4. User confirms the registration by clicking "Submit" button.
5. System validates the input and sends an account verification email.
6. User clicks link in verification email.
7. User is directed to homepage, and registration is completed.

##### US\_I\_02: Individual logs in

1. User clicks on "Sign in" button.
2. User writes in their email and password.
3. User clicks "OK" button.
4. System verifies credentials.
5. User is directed to the homepage.

##### US\_I\_03: Individual views available listings

1. User clicks on homepage button on navigation bar.

## **Goods Donation Facilitating System Requirements Specification**

2. System presents an activity feed with “Personal”, “Businesses”, “Charities” as different perspectives for listings.
3. User can click on “All”, “Food”, “Clothes”, “Books”, “Miscellaneous” options to filter product listings, and select dates to filter volunteer listings by timeframe.

### **US\_I\_04: Individual sends a request to a product listing**

1. User clicks on a listing.
2. System shows the listing’s photo, description, and other potential attributes.
3. User clicks on “Send request” button.
4. System shows a messaging interface between the user and the listing owner.
5. User can send message to listing owner.

### **US\_I\_05: Individual sends a request to a volunteer listing**

1. User clicks on homepage.
2. User selects the “Charities” perspective.
3. User clicks on a listing.
4. System shows the listing’s information (duty to be performed, and timespan of the task).
5. User clicks “Send request” button.

### **US\_I\_06: Individual creates a product listing**

1. User clicks on upload button on navigation bar.
2. User fills in form with inputs for product photo, title, description, listing timespan, and pick-up location.
3. User selects the product category
4. User clicks on “Submit” button.

### **US\_I\_07: Individual edits a product listing**

1. User clicks on profile button on navigation bar.
2. User clicks on “My listings” option.
3. User clicks on a listing.
4. User clicks on “Edit” button.
5. System shows the listing creation form, with the fields auto-populated with the current data.
6. User changes data.
7. User clicks on “Submit” button.

### **US\_I\_08: Individual deletes a product listing**

1. User clicks on profile button on navigation bar.
2. User clicks on “My listings” option.
3. User clicks on a listing.
4. User clicks on “Delete” button.
5. System shows an alert asking for confirmation through an “OK” button.
6. User presses “OK” button.

## **Goods Donation Facilitating System Requirements Specification**

### **US\_I\_09: Individual gets a request on their listing**

1. User clicks on requests button on navigation bar.
2. User selects the listings perspective.
3. User clicks on a message.
4. System shows messaging interface between requester and user.
5. System shows “Accept” and “Deny” buttons.

### **US\_I\_10: Individual sends donation offer to charity**

1. User clicks on donate button on navigation bar.
2. User selects a charity.
3. User fills in form with inputs for product photo, title, description.
4. User selects between drop-off or pick-up.
  - a. If drop-off is selected, user selects one of the charity’s drop-off locations.
  - b. If pick-up is selected, user selects pick-up location.
5. User presses the “Submit” button.

### **US\_I\_11: Individual’s donation offer to a charity is rejected**

1. User clicks on profile button on navigation bar.
2. User clicks on “Donations” option.
3. User clicks on donation with red dot.
4. System shows an alert asking if the user wants to list the product on the app.
5. If the user clicks “OK”, they’re taken to listing creation, with the form auto-populated with the existing information.
6. If the user clicks “Cancel”, the donation is removed.

### **US\_I\_12: Individual’s volunteer request is accepted**

1. User receives a push notification with the name of the listing and the positive status.

### **US\_I\_13: Individual’s business order is rejected**

1. User receives a push notification with the with the name of the product listing and its negative status.

### **US\_I\_14: Individual reports a user**

1. User clicks on the profile picture of a user on a listing or message conversation.
2. System shows the other user’s profile.
3. User clicks on the flag button in the header.
4. User selects reporting reason.
5. User clicks “Submit” button.

### **US\_I\_15: Individual reports a listing**

1. User clicks on a listing.
2. User clicks on the flag button in the header.
3. User selects reporting reason.
4. User clicks “Submit” button.

## **Goods Donation Facilitating System Requirements Specification**

### **US\_I\_16: Individual rates a user**

1. User clicks on the profile picture of a user on a listing or message conversation.
2. User leaves a rating based on a 5-star rating scale.

### **US\_I\_17: Individual gets a donation's receipt**

1. User clicks on profile button on navigation bar.
2. User clicks on "Donations" option.
3. System shows the donations received by the user.
4. User clicks on the download button of a donation that's been received.
5. System pushes a download of a PDF file of the donation receipts generated by each accepted donation.

### **Business manager**

#### **US\_BM\_01: Manager registers business in the app**

1. Manager clicks on "Sign up" button.
2. Manager clicks on "Business" option.
3. Manager writes in their business name, phone number, email.
4. Manager confirms the registration by clicking "Submit" button.
5. System sends an account verification email.
6. Manager clicks link in verification email.
7. System directs manager to homepage, and prompts user to enter the business' location.
8. Manager fills in the information, and registration is completed.

#### **US\_BM\_02: Manager logs in**

1. Manager clicks on "Sign in" button.
2. Manager writes in their business email and password.
3. Manager clicks "OK" button.
4. System verifies credentials and sends an email with a temporary login code.
5. Manager enter the login code.
6. Manager is directed to the homepage.

#### **US\_BM\_03: Manager creates a product listing**

1. Manager clicks on upload button on navigation bar.
2. Manager fills in form with inputs for product photo, description, and pick-up timeframe.
3. If the product is food-based, manager checks the "Food" option, and fills in the ingredients and allergens.
4. Manager clicks on "Submit" button.

#### **US\_BM\_05: Manager cancels a listing**

1. Manager clicks on listing button on navigation bar.
2. Manager clicks on a listing.
3. Manager clicks the "Cancel" option.
4. Manager selects the number of days to temporarily disable listing.



## **Goods Donation Facilitating System Requirements Specification**

### **US\_BM\_06: Manager receives an order**

1. Manager clicks on the red bell button on the right of the header.
2. Manager clicks on new order notification.
3. Manager is directed to the “Requests” perspective of the listings section.
4. Manager sees new order with the listing name, and order OTP.

### **US\_BM\_07: Manager rejects an order**

1. Manager clicks on listing button on navigation bar.
2. Manager selects requests perspective.
3. Manager clicks on an order.
4. System shows alert box, asking for rejection confirmation.
5. Manager clicks “Confirm”.

### **US\_BM\_08: Manager sends donation offer to charity**

1. Manager clicks on donate button on navigation bar.
2. Manager selects a charity.
3. Manager fills in form with inputs for product photo, title, description.
4. Manager selects between drop-off or pick-up.
  - a. If drop-off is selected, manager selects one of the charity’s drop-off locations.
  - b. If pick-up is selected, manager selects pick-up location.
5. Manager presses the “Submit” button.

### **US\_BM\_09: Manager’s donation offer to a charity is rejected**

1. Manager clicks on profile button on navigation bar.
2. Manager clicks on “Donations” option.
3. Manager clicks on donation with red dot.
4. System shows an alert asking if the manager wants to list the product on the app.
5. If the manager clicks “OK”, they’re taken to listing creation, with the form auto-populated with the existing information.
6. If the manager clicks “Cancel”, the donation is removed.

### **US\_BM\_10: Manager gets a donation's receipt**

1. Manager clicks on profile button on navigation bar.
2. Manager clicks on “Donations” option.
3. System shows the donations received by the user.
4. Manager clicks on the download button of a donation that’s been received.
5. System pushes a download of a PDF file of the donation receipts generated by each accepted donation.

### **US\_BM\_11: Manager views revenue statistics**

1. Manager clicks on homepage button on navigation bar.
2. System shows total revenue, and most popular listings.
3. Manager can select “Yearly” or “Monthly” filters to see revenue statistics.

## **Goods Donation Facilitating System Requirements Specification**

### **Charity organization manager**

#### **US\_COM\_01: Manager creates an account**

1. Manager clicks on “Sign up” button.
2. Manager clicks on “Charity” option.
3. Manager writes in their organization name, phone number, email, and organization verification form.
4. Manager confirms the registration by clicking “Submit” button.
5. System sends an account verification email.
6. Manager clicks link in verification email and is directed to a form.
7. Manager fills input for organization location, pick-up locations, and EIN number.
8. Manager clicks “Ok” button, is directed to homepage, and registration is completed.

#### **US\_COM\_02: Manager logs in**

1. Manager clicks on “Sign in” button.
2. Manager writes in their organization email and password.
3. Manager clicks “OK” button.
4. System verifies credentials and sends an email with a temporary login code.
5. Manager enter the login code.
6. Manager is directed to the homepage.

#### **US\_COM\_03: Manager views donation offer**

1. Manager clicks on donations button on navigation bar.
2. Manager can click on “Pick-up” or “Drop-off” options to filter donation offers.

#### **US\_COM\_04: Manager accepts a donation offer**

1. Manager clicks on donations button on navigation bar.
2. Manager clicks on a donation.
3. System shows the information of the product offered (photo and description), along with an “Accept” and “Reject” option.
4. Manager clicks “Accept”.

#### **US\_COM\_05: Manager creates a volunteer listing**

1. Manager clicks on listings button on navigation bar.
2. Manager clicks “Add” button.
3. Manager fills in form with inputs for duty title, description, timeframe, and number of people they are looking for.
4. Manager clicks “Ok”.

#### **US\_COM\_06: Manager views volunteer requester’s in-app volunteering history**

1. Manager clicks on volunteers button on navigation bar.
2. Manager selects “Requests” perspective.
3. Manager clicks on a request.

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4. System shows requester's username, email, past in-app volunteering experiences along with their individual rating

### **US\_COM\_07: Manager accepts volunteer request**

1. Manager clicks on volunteers button on navigation bar.
2. Manager selects "Requests" perspective.
3. Manager clicks on a request.
4. Manager clicks "Accept" button.
5. Manager is directed to requester's email address for further communications.

### **US\_COM\_08: Manager views in-app volunteers**

1. Manager clicks on volunteers button on navigation bar.
2. Manager selects "Volunteers" perspective.
3. Manager can select "Ongoing" or "Finished" to filter results.

### **US\_COM\_09: Manager rates a volunteer (only ones that have finished)**

1. Manager Manager clicks on volunteers button on navigation bar.
2. Manager selects "Volunteers" perspective.
3. Manager clicks on a volunteer whose marked as "Finished".
4. Manager leaves a rating based on a 5-star rating scale.

## **Platform administrator**

### **US\_PA\_01: Administrator logs in (describe the ui essentially, add totals of rev from shop sales)**

1. Administrator clicks on "Sign in" button.
2. Administrator writes in their organization email and password.
3. Administrator clicks "OK" button.
4. System verifies credentials and sends an email with a temporary login code.
5. Administrator enter the login code.
6. Administrator is directed to the homepage.

### **US\_PA\_02: Administrator adds another administrative user.**

1. Administrator clicks profile button on navigation bar.
2. Administrator selects "Add administrator" option.
3. System sends the user an OTP email, and prompts the user to enter their password and the OTP for confirmation.
4. Administrator fills the prompt and selects "Ok".
5. System verifies the information and shows the user a form.
6. Administrator fills in form input for new user's email and password.

### **US\_PA\_03: Administator evaluates a user report**

1. Administrator clicks on moderation button on navigation bar.
2. Administrator selects the "Reports" perspective.
3. Administrator clicks on a report.

## Goods Donation Facilitating System Requirements Specification

4. System shows the reporting user's username, their reason for the report, and the offending user's username.
5. Administrator can select "Accept" or "Reject".

### US\_PA\_04: Administrator moderates listings

1. Administrator clicks on moderation button on navigation bar.
2. Administrator selects the "Feed" perspective.
3. Administrator is shown the latest unmoderated listing.
4. Administrator selects "Accept" or "Reject", and is shown a new listing.

### US\_PA\_05: Administrator checks in a new compliance report

1. Administrator clicks on regulation button on navigation bar.
2. Administrator selects the "Business" perspective.
3. System shows the businesses registered on the app, the date of their last compliance report check, and their total number of negative report results.
  - a. If the business' number of negative report result is greater than 3, it displays a "Ban" option next to their name.
4. Administrator clicks a business.
5. System shows the business' name, a link to their last compliance report, their total number of negative report results, and a form.
6. Administrator fills in form input for new report PDF file, enters date of report, and selects "Positive" or "Negative" depending on the result of the report.
7. Administrator clicks "Submit".

### US\_PA\_06: Administrator bans a business-based user

1. Administrator clicks on regulation button on navigation bar.
2. Administrator selects the "Business" perspective.
3. Administrator clicks the "Ban" option next to a business' name.
4. System prompts the user to enter their password.
5. Administrator enters their password.
6. System verifies the input, and bans the business if the input is correct.

### US\_PA\_07: Administrator approves a charity verification form

1. Administrator clicks on regulation button on navigation bar.
2. Administrator selects the "Charity" perspective.
3. Administrator clicks on one of the forms.
4. Administrator selects "Accept".

## 4.2 Use cases

|         |   |
|---------|---|
| UC Name | <i>UC_I_01: Send request</i>  |
| Summary | <i>Individuals can send requests to other individuals' litings.</i> |

## Goods Donation Facilitating System Requirements Specification

|                                  |  |
|----------------------------------|--|
| Actors                           | <b>User, System, Listing owner</b>   |
| Preconditions                    |  |
| Description of the Main Sequence | <ul style="list-style-type: none"> <li>• Step 1: User clicks on a listing.</li> <li>• Step 2: System shows the full information of the listing.</li> <li>• Step 3: User clicks “Send request”.</li> <li>• Step 4: System opens messaging interface, and creates a channel between user and listing owner.</li> </ul> |
| Non functional requirements      | <i>Messaging security</i>  |
| Postconditions                   | <i>The user has placed their request for the listing.</i>  |

|   |  |
|---|--|
| UC Name                                 | <b>UC_I_02: Evaluate request</b>   |
| Summary                                 | <i>Individual can accept or reject requests on their listings.</i>   |
| Actors                                  | <b>Listing owner, System, requester</b>  |
| Preconditions                           | <i>The listing owner has at least one listing.</i><br><i>The listing has at least one request.</i>   |
| Description of the Main Sequence        | <ul style="list-style-type: none"> <li>• Step 1: The listing owner selects a request.</li> <li>• Step 2: System opens the messaging channel between the owner and the requester.</li> <li>• Step 3: The listing owner selects “Accept”.</li> <li>• Step 4: System deletes the remaining requests to the same listing.</li> <li>• Step 5: System notifies the requesters.</li> <li>• Step 6: System deletes the listing.</li> </ul> |
| Description of the Alternative Sequence | <ul style="list-style-type: none"> <li>• Step 3: The listing owner selects “Reject”.</li> <li>• Step 4: System deletes the messaging channel and the request.</li> <li>• Step 5: System sends notification to requester.</li> <li>• Step 6: System redirect owner to requests.</li> </ul>  |
| Non functional requirements             | <i>Messaging security</i><br><i>Time for database operations</i>   |

## Goods Donation Facilitating System Requirements Specification

|                |  |
|----------------|--|
|                | <i>Time for sending notifications</i>    |
| Postconditions | <i>Rejected requesters are notified.</i> |

|                                  |  |
|----------------------------------|--|
| UC Name                          | <i>UC_I_03: Send order</i>   |
| Summary                          | <i>Individuals can place orders on business listings.</i>  |
| Actors                           | <b>Individual</b> , System, Business manager   |
| Preconditions                    | <i>The manager has at least one listing.</i>   |
| Description of the Main Sequence | <ul style="list-style-type: none"> <li>● <i>Step 1: Individual selects a listing.</i></li> <li>● <i>Step 2: System shows the full information of the listing.</i></li> <li>● <i>Step 3: Individual clicks “Send order”.</i></li> <li>● <i>Step 4: Individual inputs their credit card information.</i></li> <li>● <i>Step 5: System stores the order data, and generates an OTP for it.</i></li> <li>● <i>Step 6: System waits until the pick-up timeframe begins to finalize payment.</i></li> <li>● <i>Step 7: System forwards 8% of the payment to a random charity.</i></li> </ul> |
| Non functional requirements      | <i>Credit card security.</i><br><i>Time for database operations.</i>   |
| Postconditions                   | <i>The individual’s order is created.</i>  |

|                                  |  |
|----------------------------------|--|
| Cancel listing                   | <i>UC_BM_01: Cancel listing</i>  |
| Summary                          | <i>Business managers can temporarily cancel a listing of theirs.</i>   |
| Actors                           | <b>Business manager</b> , System   |
| Preconditions                    | <i>The manager is logged in.</i><br><i>The manager has created at least one listing.</i>   |
| Description of the Main Sequence | <ul style="list-style-type: none"> <li>● <i>Step 1: The manager clicks to the listings page.</i></li> <li>● <i>Step 2: The manager selects a listing.</i></li> <li>● <i>Step 3: System shows listing form, prefilled with the current data.</i></li> </ul> |

## Goods Donation Facilitating System Requirements Specification

|                             |  |
|-----------------------------|--|
|                             | <ul style="list-style-type: none"> <li>● <i>Step 4: The manager clicks “Cancel”.</i></li> <li>● <i>Step 5: System presents options for the number of days.</i></li> <li>● <i>Step 6: The manager selects an option.</i></li> <li>● <i>Step 7: The manager clicks “Save”.</i></li> <li>● <i>Step 8: System updates the listing data.</i></li> </ul> |
| Non functional requirements | <i>Time for database update.</i>   |
| Postconditions              | <i>The listing is cancelled for the selected number of days.</i>   |

|   |   |
|---|---|
| UC Name                                 | <i>UC_BM_02: Reject order</i>   |
| Summary                                 | <i>Business managers can reject orders.</i>   |
| Actors                                  | <b>Business manager</b> , System, Individual (order owner)  |
| Preconditions                           | <i>The manager has created at least one listing.</i><br><i>The listing has at least one order.</i>  |
| Description of the Main Sequence        | <ul style="list-style-type: none"> <li>● <i>Step 1: The manager clicks to the requests page.</i></li> <li>● <i>Step 2: The manager clicks on an order.</i></li> <li>● <i>Step 3: System verifies the pick-up timeframe has not begun.</i></li> <li>● <i>Step 4: System shows an alert box, asking if manager wants to reject order.</i></li> <li>● <i>Step 5: The manager confirms rejection.</i></li> <li>● <i>Step 6: System sends the order owner notification about the order cancellation with the order’s title.</i></li> <li>● <i>Step 7: System deletes the order from the database.</i></li> </ul> |
| Description of the Alternative Sequence | <ul style="list-style-type: none"> <li>● <i>Step 3: System finds the pick-up timeframe has begun.</i></li> <li>● <i>Step 4: System shows information box, relaying information.</i></li> </ul>  |
| Non functional requirements             | <i>Time for</i><br><i>Time for database update.</i>   |
| Postconditions                          | <i>The order is deleted from the database.</i>  |

## Goods Donation Facilitating System Requirements Specification

|   |   |
|---|---|
| UC Name                                 | <i>UC_U_01: Turn rejected donation to listing</i>   |
| Summary                                 | <i>Individuals and business managers can turn their rejected donations into listings they can put up on the application.</i>  |
| Dependency                              |   |
| Actors                                  | <b>User</b> (individual or business manager), System  |
| Preconditions                           | <i>The user has made at least one donation offer.<br/>The user's donation offer is rejected by the charity (denoted by red dot in the UI).</i>  |
| Description of the Main Sequence        | <ul style="list-style-type: none"> <li>• <i>Step 1: User clicks on a rejected donation.</i></li> <li>• <i>Step 2: System shows an alert asking if the manager wants to list the product on the app.</i></li> <li>• <i>Step 3: User accepts.</i></li> <li>• <i>Step 4: System shows listing creation form, prefilled with donation's data.</i></li> <li>• <i>Step 5: User fills in additional information.</i></li> <li>• <i>Step 6: User submits form.</i></li> <li>• <i>Step 7: System stores listing data.</i></li> <li>• <i>Step 8: System deletes donation data.</i></li> </ul> |
| Description of the Alternative Sequence | <ul style="list-style-type: none"> <li>• <i>Step 3: User rejects.</i></li> <li>• <i>Step 4: System deletes donation data.</i></li> </ul>  |
| Non functional requirements             | <i>Time for database operations</i>   |
| Postconditions                          | <i>Donation is removed and listing is created.</i>  |

|                |  |
|----------------|--|
| UC Name        | <i>UC_COM_01: Charity registration</i>   |
| Summary        | <i>Charities can register on the application.</i>  |
| Actors         | <b>Charity manager</b> , System, Administrator   |
| Preconditions  |  |
| Description of | <ul style="list-style-type: none"> <li>• <i>Step 1: The manager clicks "Sign up".</i></li> </ul> |



## Goods Donation Facilitating System Requirements Specification

|   |   |
|---|---|
| the Main Sequence                       | <ul style="list-style-type: none"> <li>• <i>Step 2: The manager selects “Charity” organization type.</i></li> <li>• <i>Step 3: The manager fills in form form with required details.</i></li> <li>• <i>Step 4: The manager adds organization verification form.</i></li> <li>• <i>Step 5: The manager submits form.</i></li> <li>• <i>Step 6: System stores the data.</i></li> <li>• <i>Step 7: Administrator receives the verification form.</i></li> <li>• <i>Step 8: Administrator approves the form.</i></li> <li>• <i>Step 9: System send organization email a verification email.</i></li> <li>• <i>Step 10: The manager clicks the link in the verification email.</i></li> <li>• <i>Step 11: System shows form for organization location and pick-up locations.</i></li> <li>• <i>Step 12: The manager submits form.</i></li> <li>• <i>Step 13: System updates the account data in the database.</i></li> <li>• <i>Step 14: The manager is redirected to the homepage.</i></li> </ul> |
| Description of the Alternative Sequence | <ul style="list-style-type: none"> <li>• <i>Step 9: Administrator rejects the form.</i></li> <li>• <i>Step 10: System sends the organization email an email about the rejection.</i></li> <li>• <i>Step 11: System deletes data from the database.</i></li> </ul>   |
| Non functional requirements             | <i>Organization information security</i><br><i>Time for database operations</i><br><i>Time for email delivery</i>   |
| Postconditions                          | <i>The charity account is created and saved in the application.</i>   |

|               |  |
|---------------|--|
| UC Name       | <i>UC_COM_02: Evaluate volunteer request</i>   |
| Summary       | <i>Charity managers can accept or reject volunteers.</i>   |
| Actors        | <b>Charity manager</b> , System, Volunteer   |
| Preconditions | <i>Manager has at least one volunteer listing created.</i><br><i>Listing has at least one request.</i> |

## Goods Donation Facilitating System Requirements Specification

|   |  |
|---|--|
| Description of the Main Sequence        | <ul style="list-style-type: none"> <li>● <i>Step 1: Manager selects a volunteering request.</i></li> <li>● <i>Step 2: System shows volunteer's username, email, and past volunteering experiences on the app.</i></li> <li>● <i>Step 3: Manager accepts request.</i></li> <li>● <i>Step 4: System updates volunteer data.</i></li> <li>● <i>Step 5: System sends notification to volunteer about approval.</i></li> <li>● <i>Step 5: System directs manager to volunteer's email address.</i></li> </ul> |
| Description of the Alternative Sequence | <ul style="list-style-type: none"> <li>● <i>Step 3: Manager rejects request.</i></li> <li>● <i>Step 4: System sends notification to volunteer about rejection.</i></li> <li>● <i>Step 5: System deletes volunteer data.</i></li> </ul>   |
| Non functional requirements             | <i>Time for database operations</i>  |
| Postconditions                          | <i>Volunteer's data is correctly updated.</i>  |

|                                  |   |
|----------------------------------|---|
| UC Name                          | <i>UC_PA_01: Evaluate user report</i>   |
| Summary                          | <i>Administrators can accept or reject user reports on listings or other users.</i>   |
| Actors                           | <b>Administrator</b> , System, Reported user  |
| Preconditions                    | <i>A report has been made by an individual.</i>   |
| Description of the Main Sequence | <ul style="list-style-type: none"> <li>● <i>Step 1: Administrator selects a report.</i></li> <li>● <i>Step 2: System shows the reported user's and the reports information.</i></li> <li>● <i>Step 3: Administrator verifies the report.</i></li> <li>● <i>Step 4: System checks number of existing verified reports on reported user.</i></li> <li>● <i>Step 5: System sends reported user an email about ban.</i></li> <li>● <i>Step 6: System deletes the reported user.</i></li> <li>● <i>Step 7: System deletes the report.</i></li> </ul> |
| Description of                   | <ul style="list-style-type: none"> <li>● <i>Step 3: Administrator rejects report.</i></li> </ul>  |

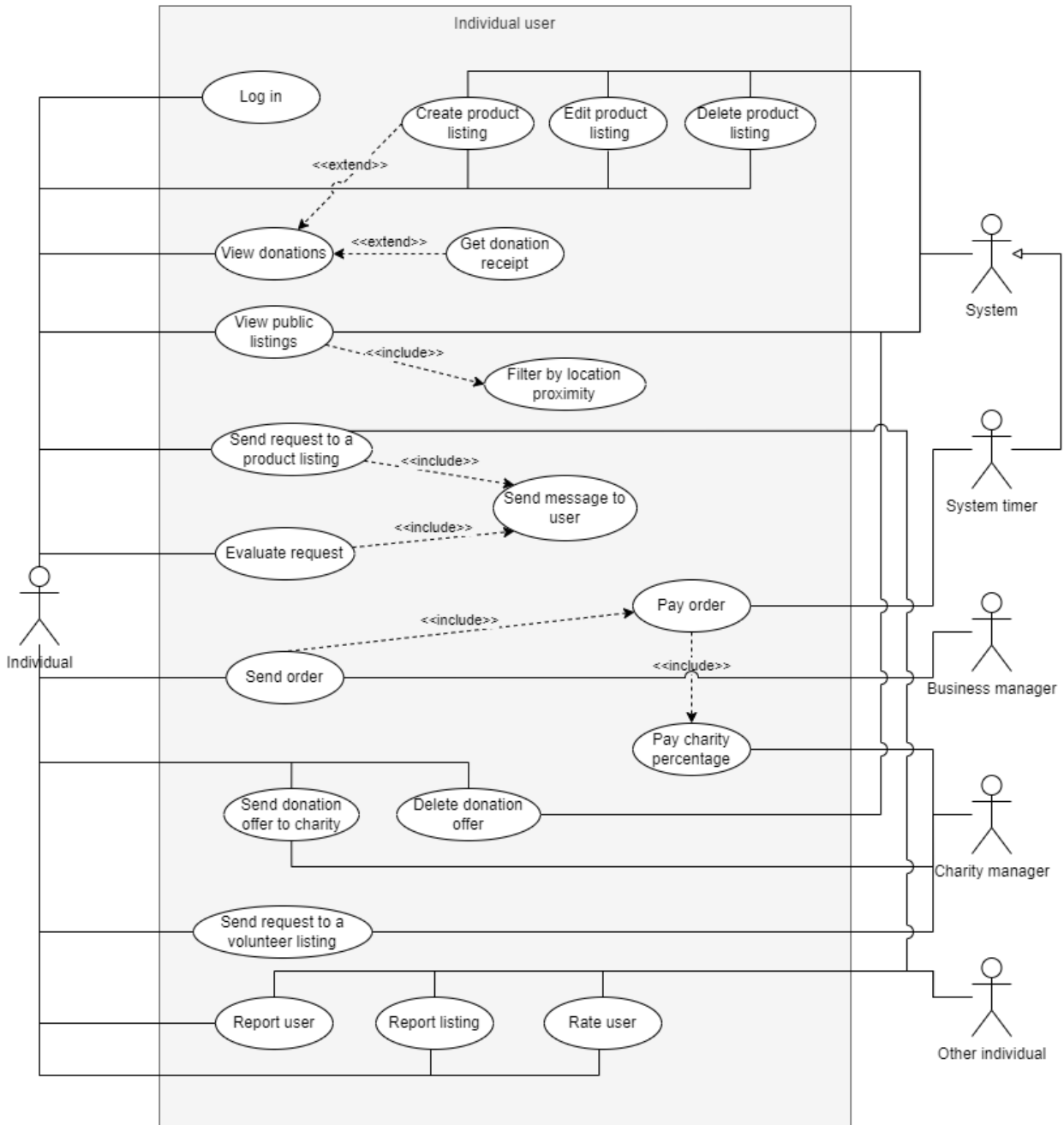
## Goods Donation Facilitating System Requirements Specification

|                             |   |
|-----------------------------|---|
| the Alternative Sequence    | <ul style="list-style-type: none"><li>• <i>Step 4: System deletes the report.</i></li></ul> |
| Non functional requirements | <i>Time for database operations</i>   |
| Postconditions              | <i>Report is evaluated and removed from the database.</i>                                   |

# Goods Donation Facilitating System Requirements Specification

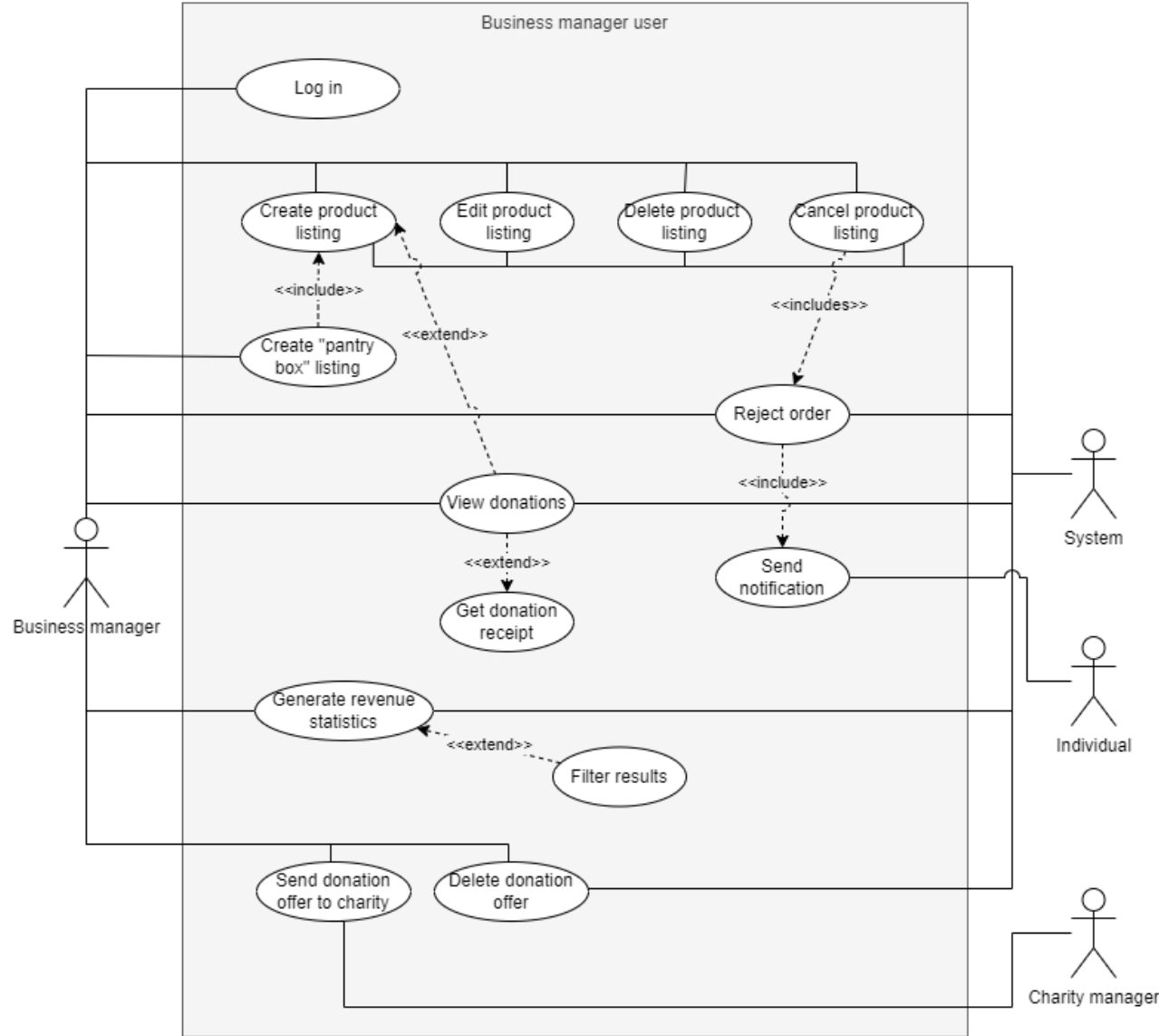
## 4.3 Use case diagrams

### Individual user



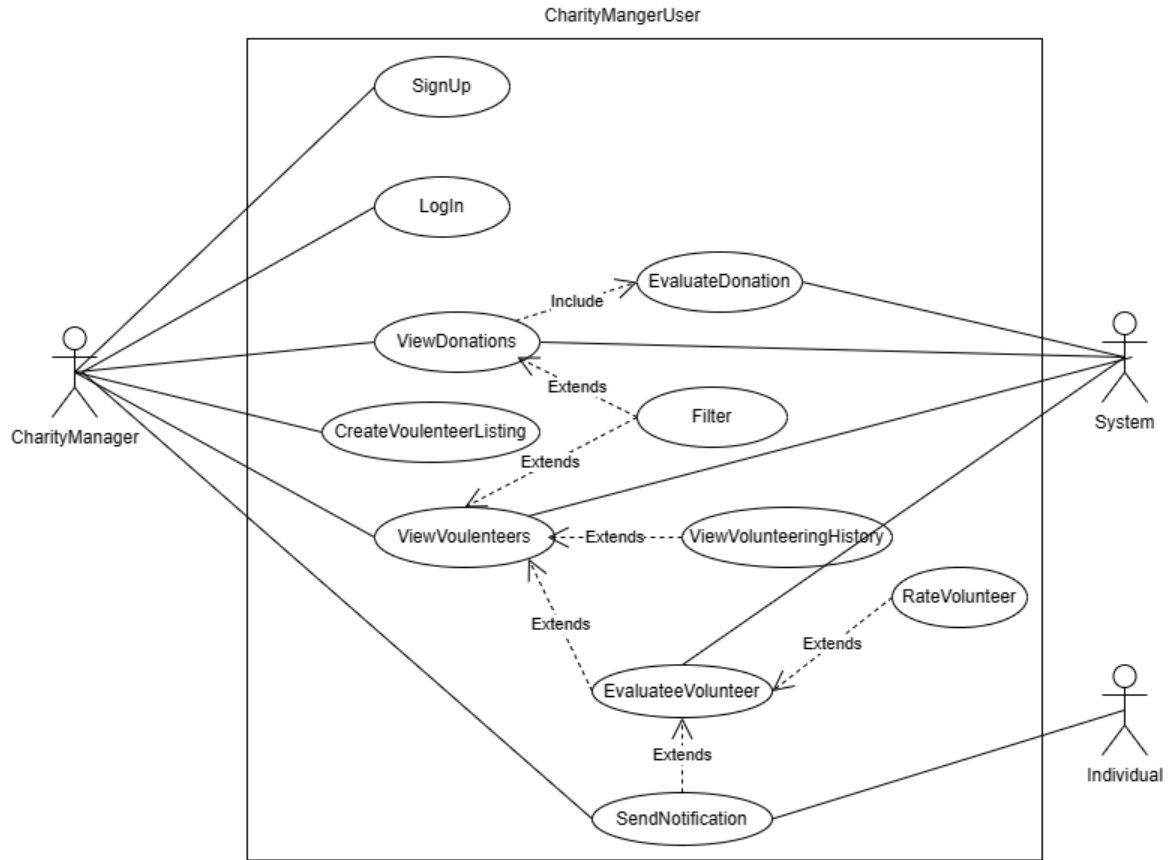
Goods Donation Facilitating System Requirements Specification

Business manager user

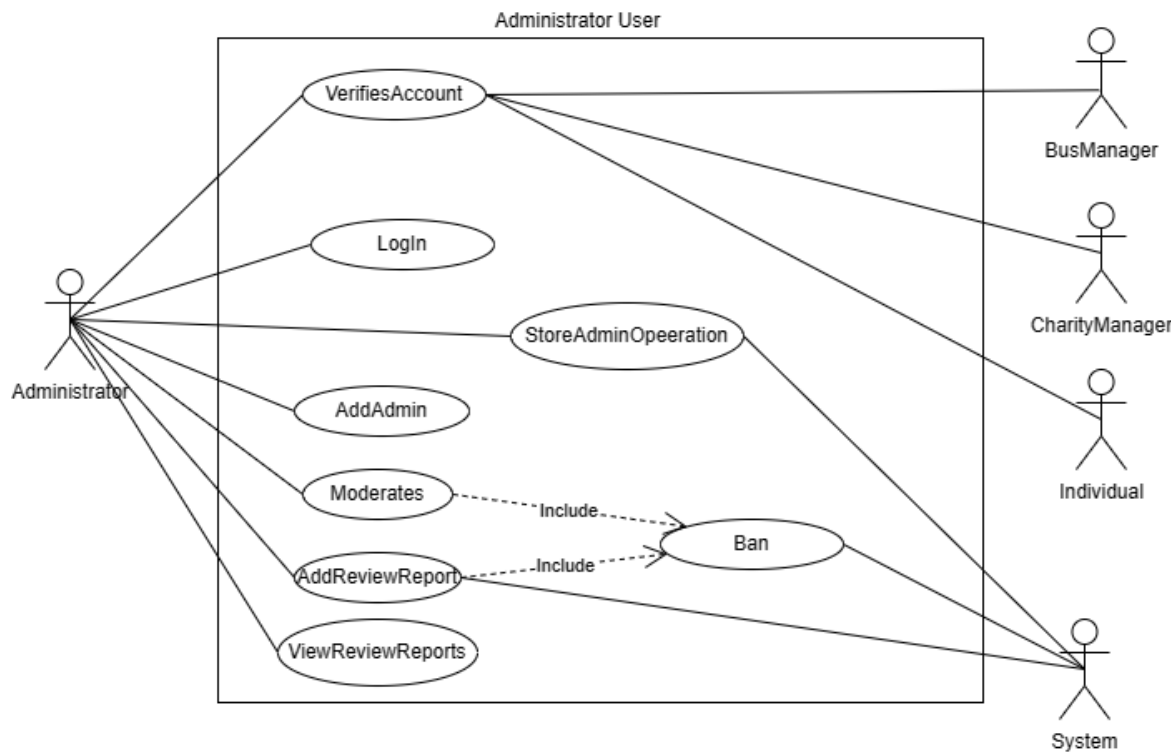


# Goods Donation Facilitating System Requirements Specification

## Charity manager user

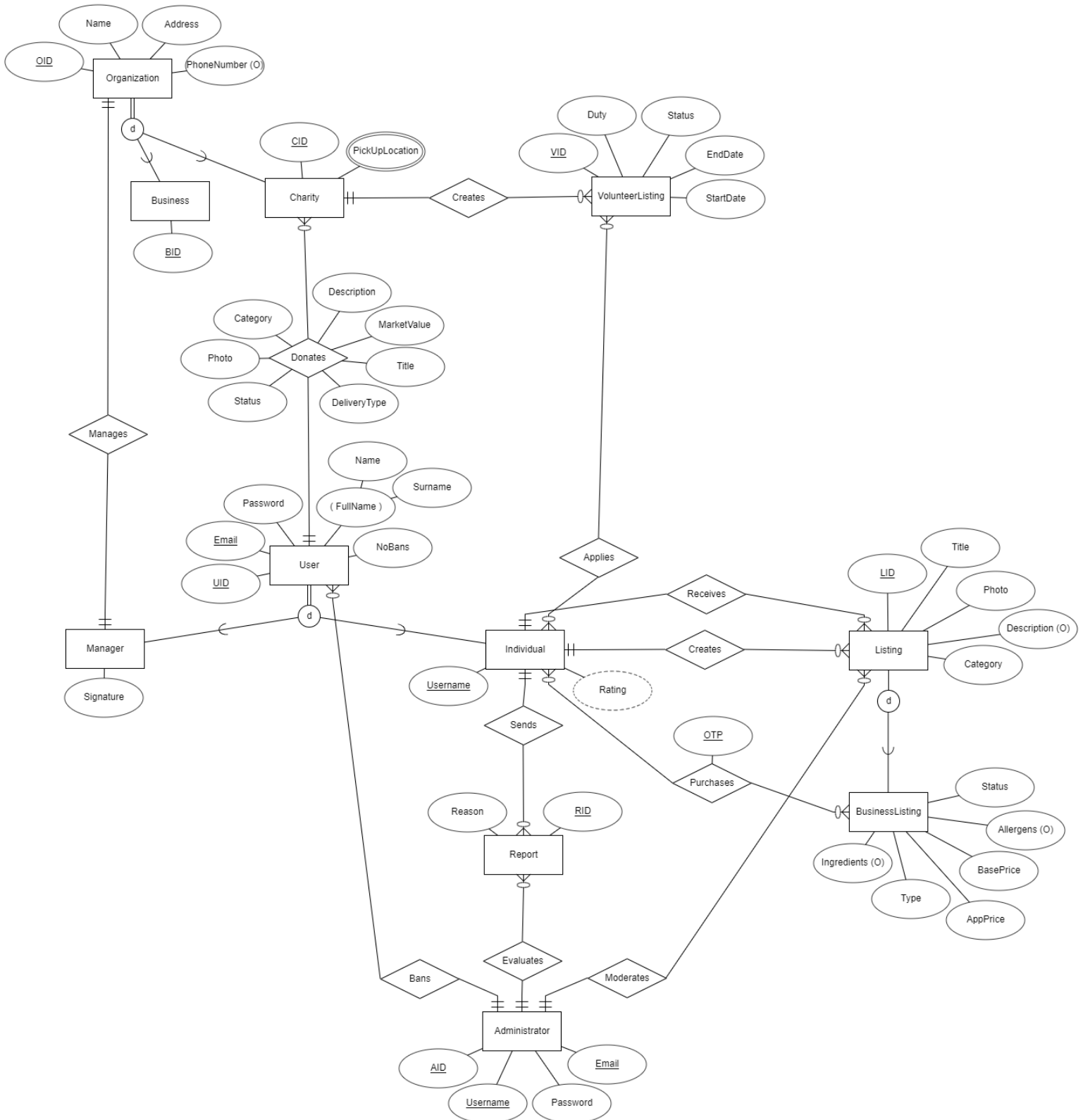


## Administrator user



# Goods Donation Facilitating System Requirements Specification

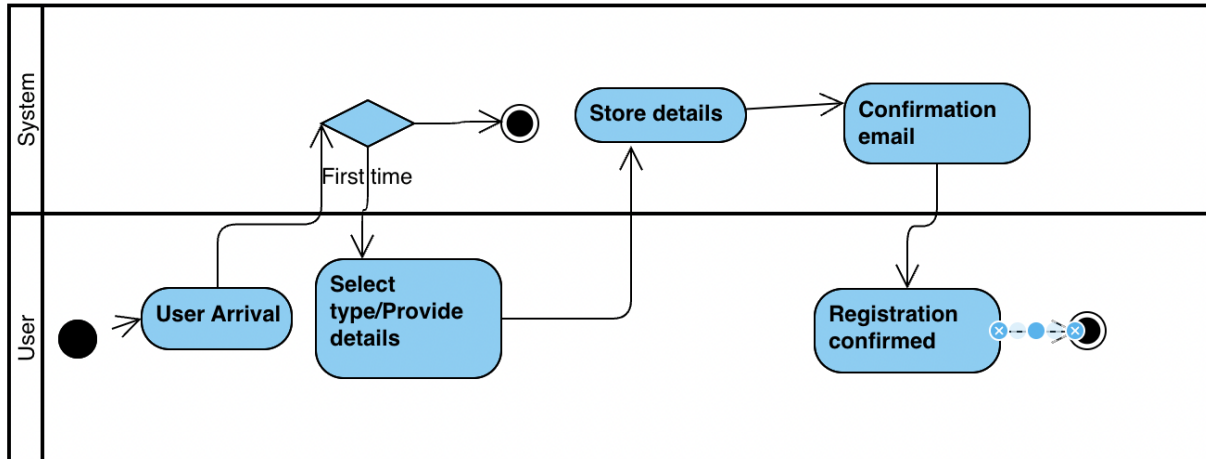
## 4.4 ERD diagram



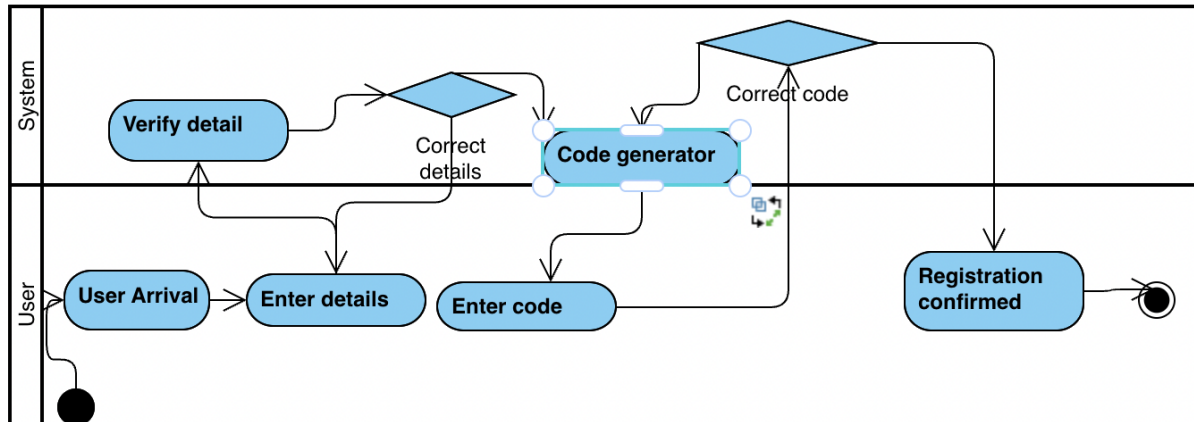
# Goods Donation Facilitating System Requirements Specification

## 4.5 Activity diagrams

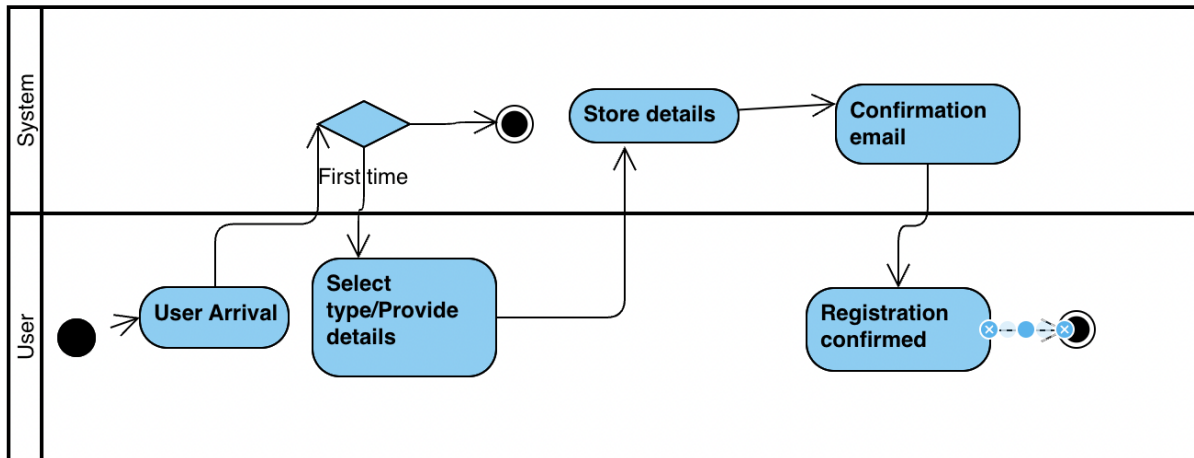
AC\_01: User signs up



AC\_02: User logs in



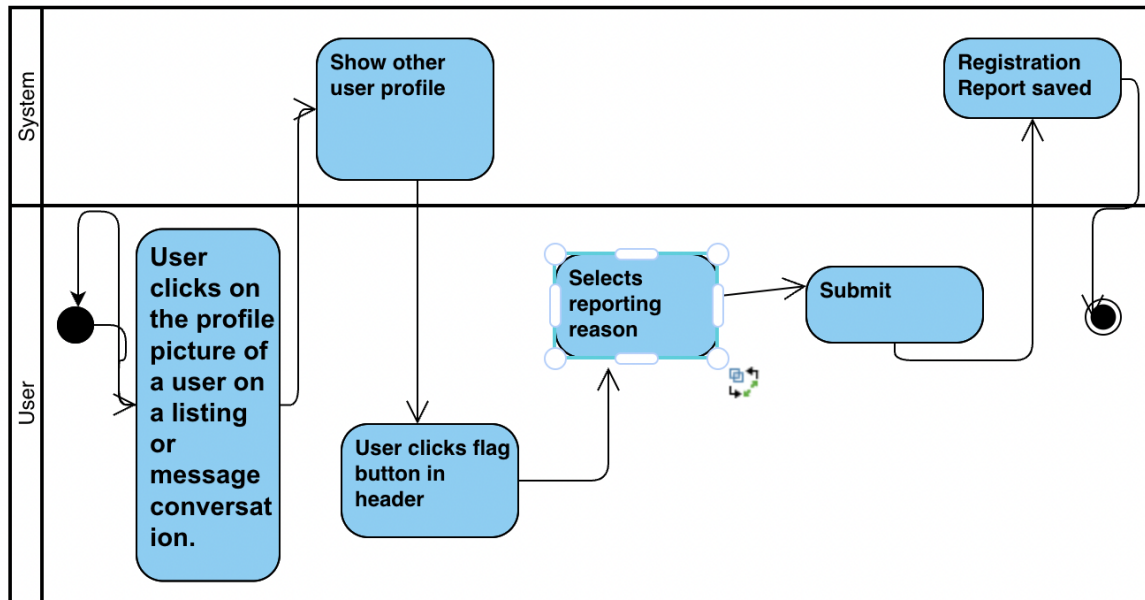
AC\_03: Organization logs in



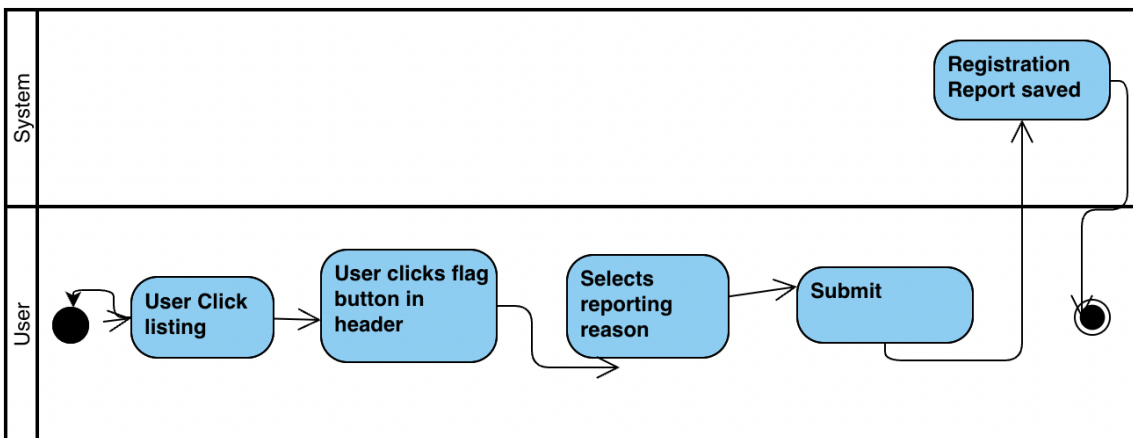


## Goods Donation Facilitating System Requirements Specification

AC\_04: Individual reports user

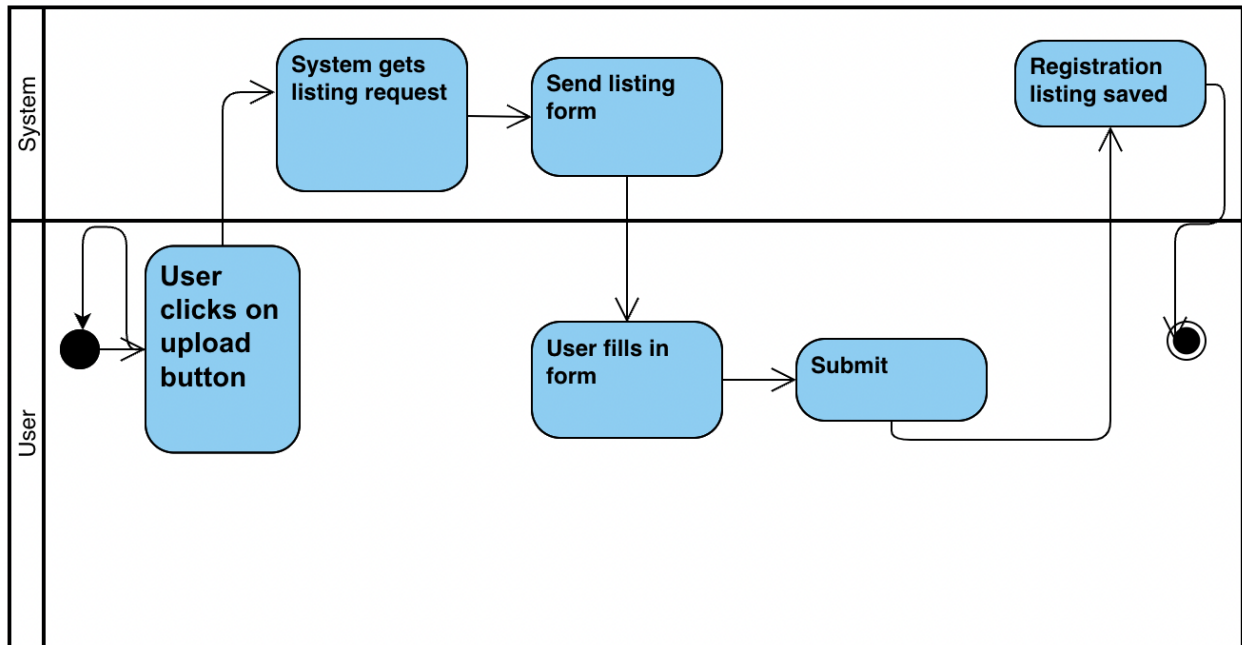


AC\_05: Individual reports listing

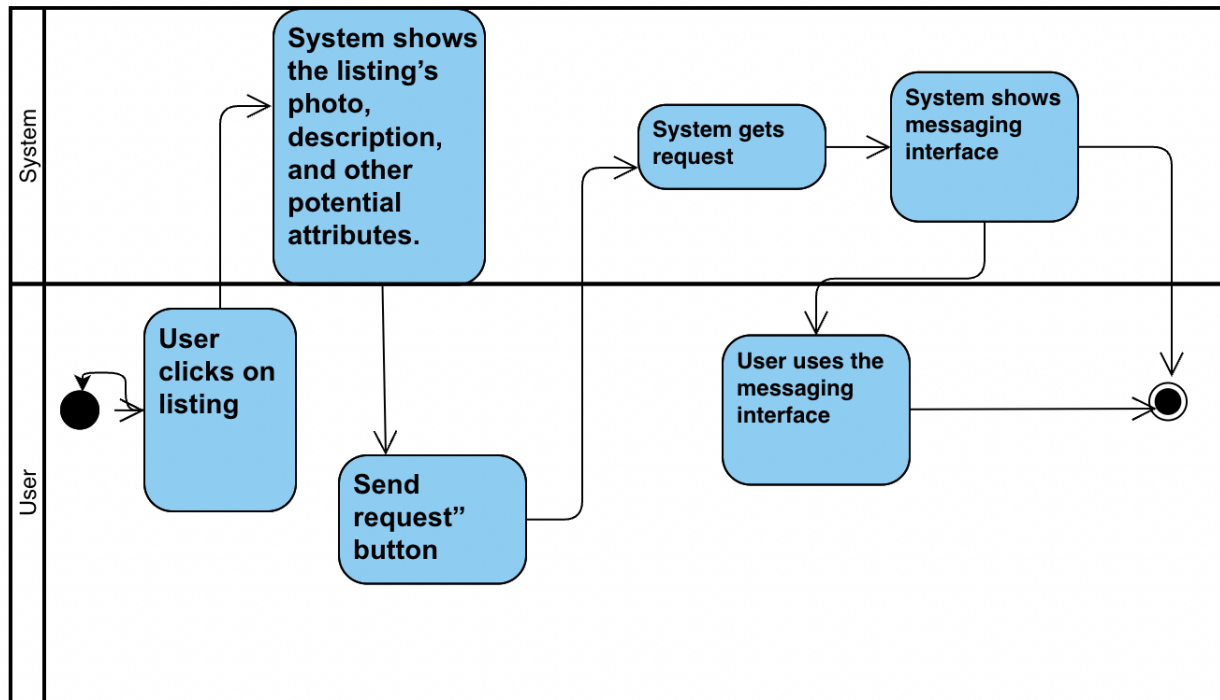


## Goods Donation Facilitating System Requirements Specification

AC\_06: Individual creates a listing

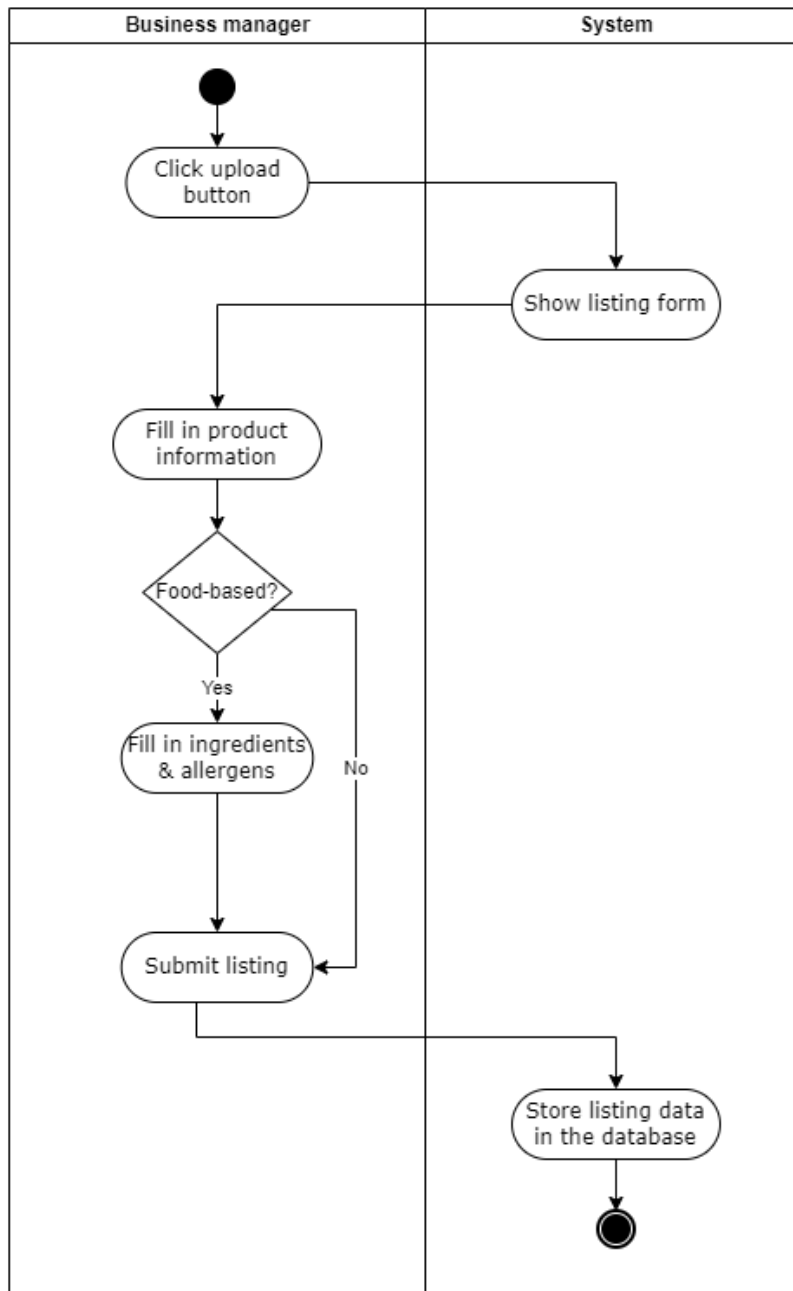


AC\_07: Individual sends request to product listing



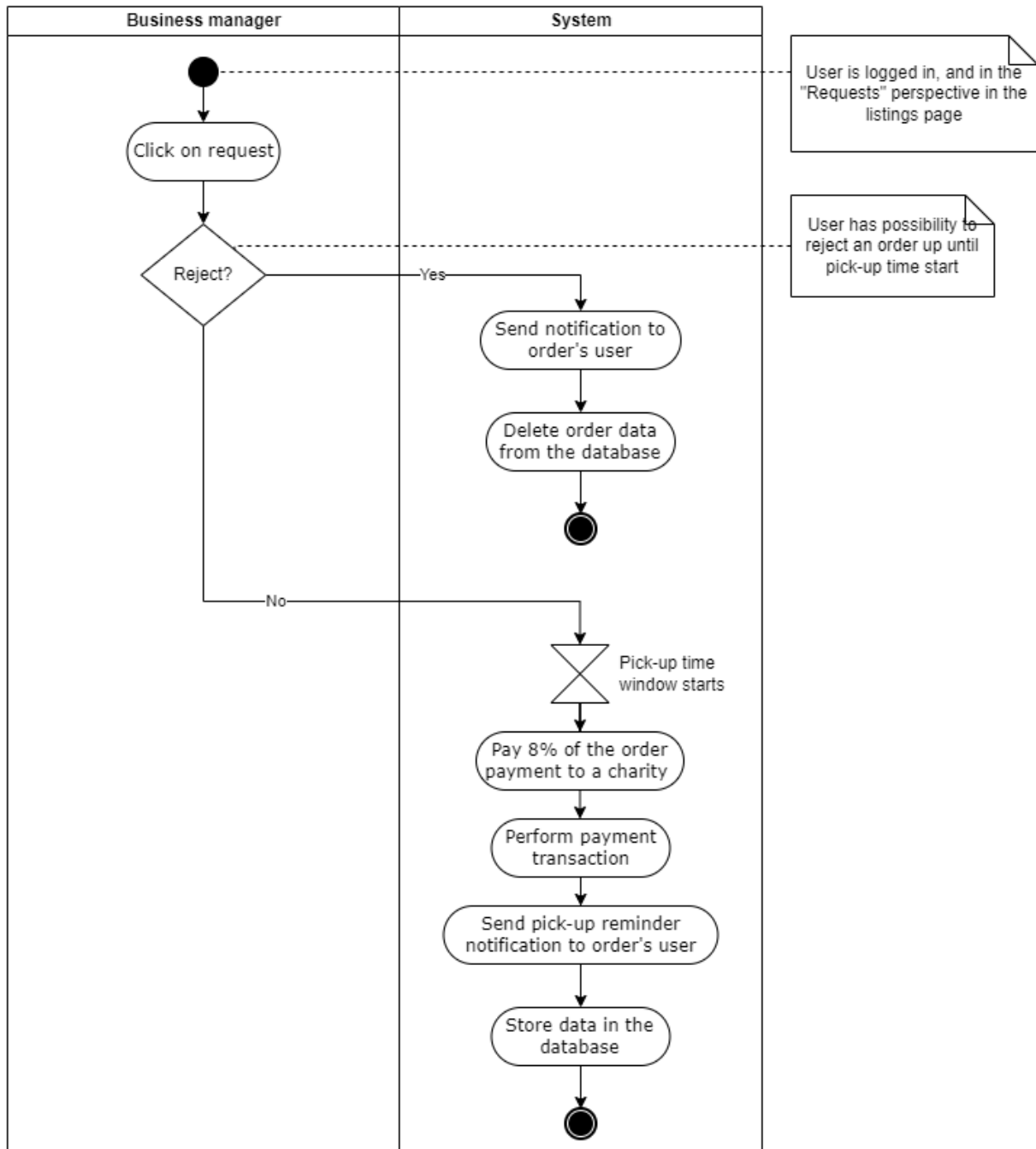
## Goods Donation Facilitating System Requirements Specification

AC\_08: Business manager creates a listing



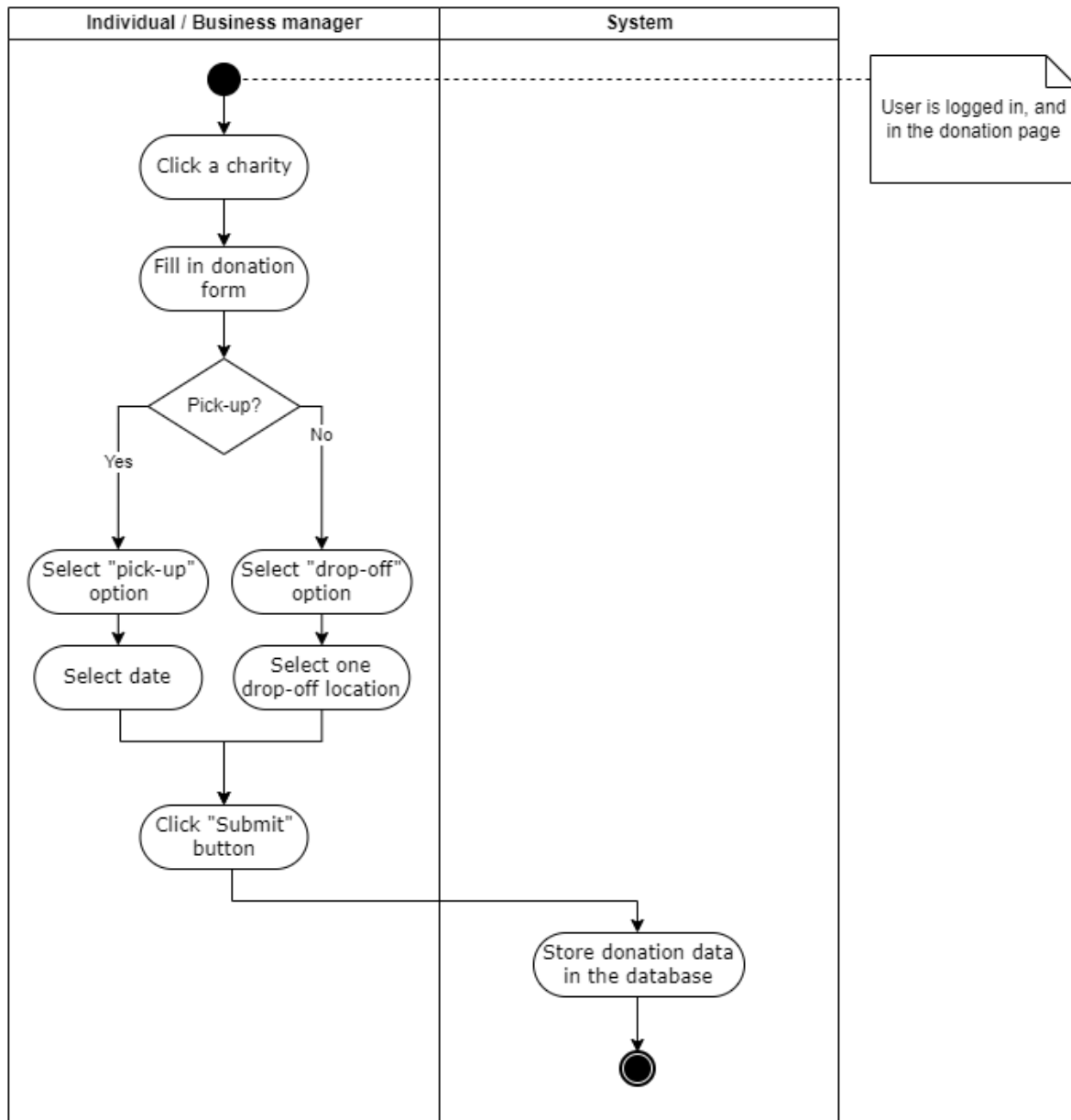
## Goods Donation Facilitating System Requirements Specification

AC\_09: Business manager evaluates order



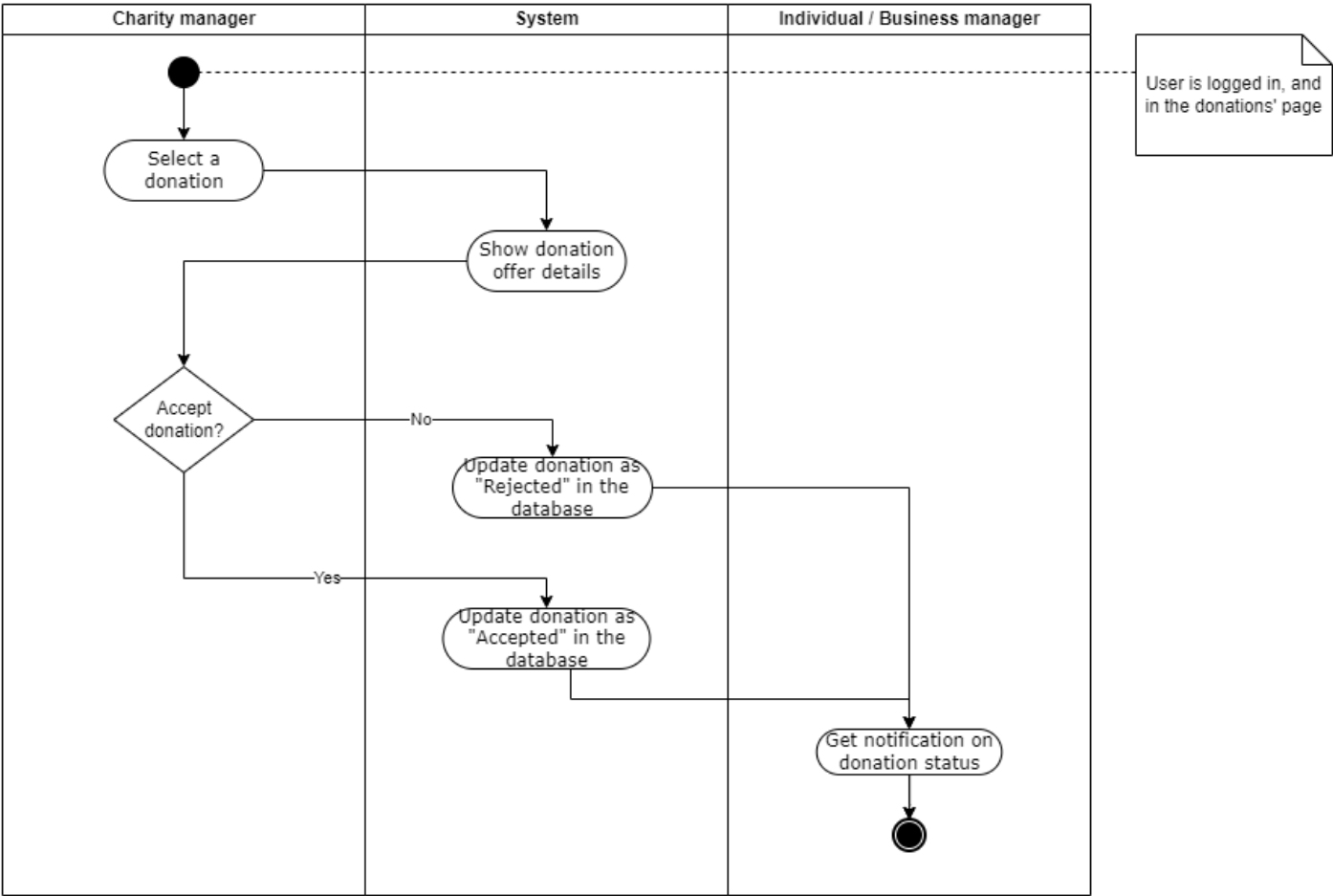
## Goods Donation Facilitating System Requirements Specification

AC\_10: User sends a donation offer to a charity



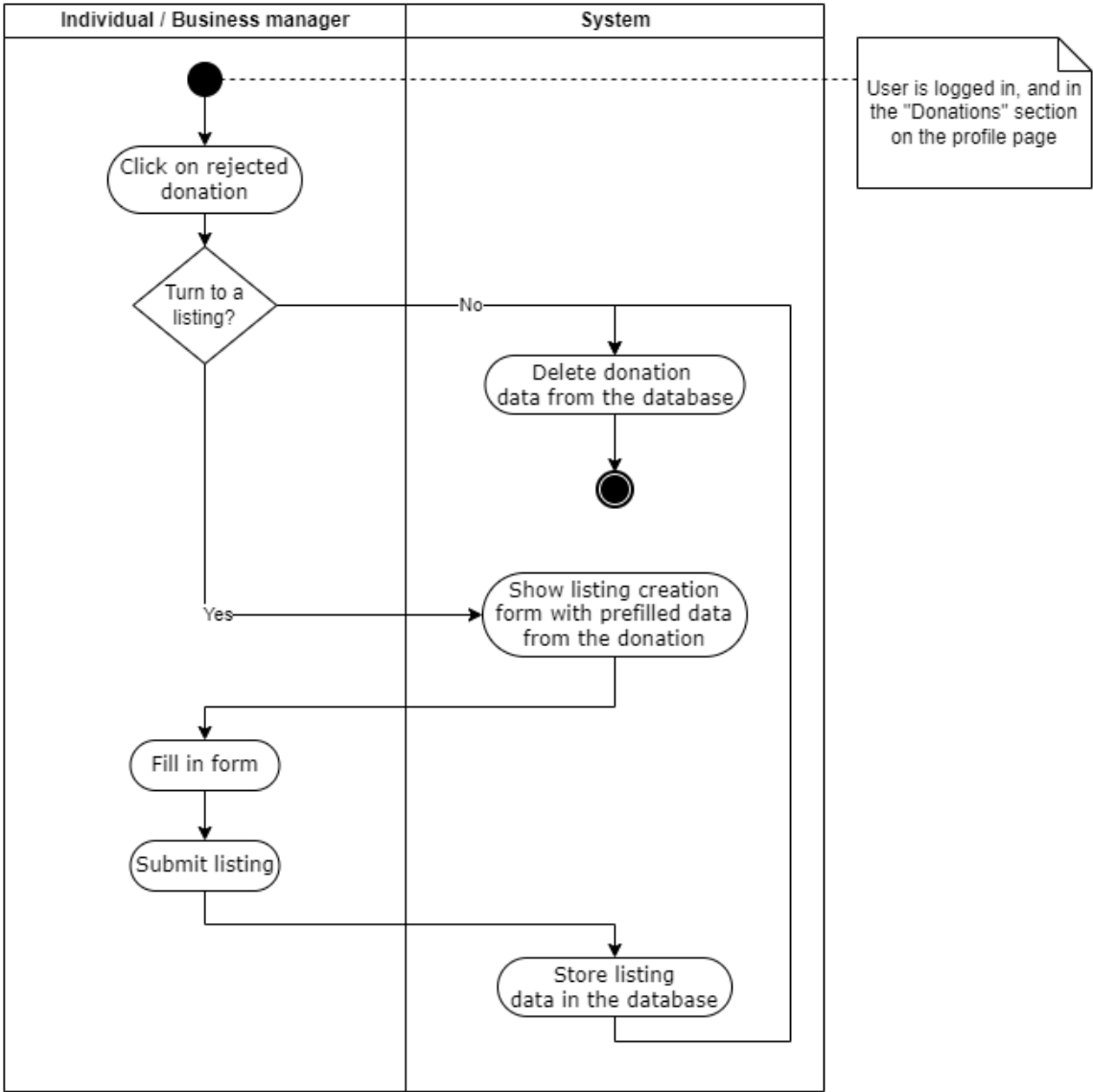
Goods Donation Facilitating System Requirements Specification

AC\_11: Charity manager evaluates a donation offer



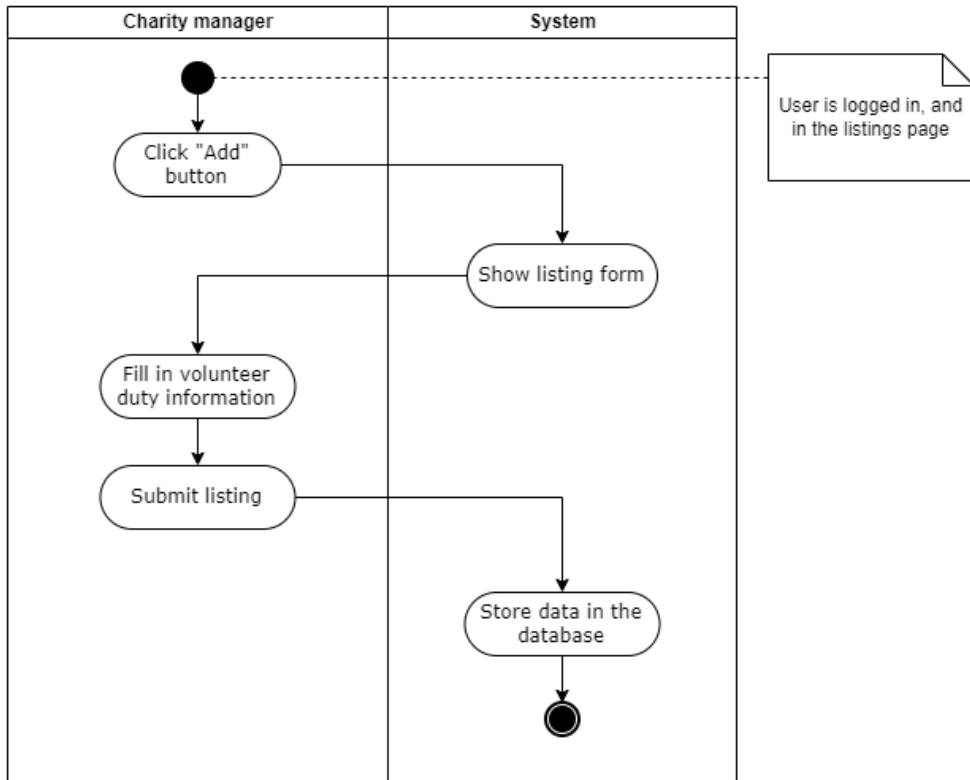
Goods Donation Facilitating System Requirements Specification

AC\_12: User's donation offer is rejected

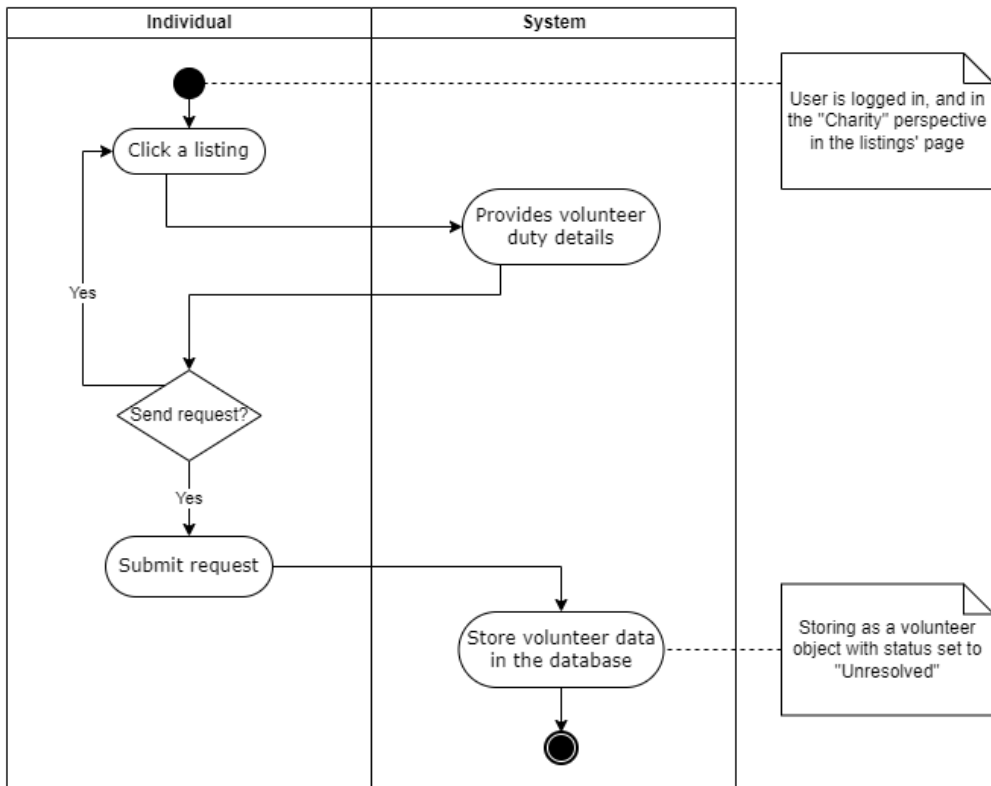


## Goods Donation Facilitating System Requirements Specification

### AC\_13: Charity manager creates volunteer listing



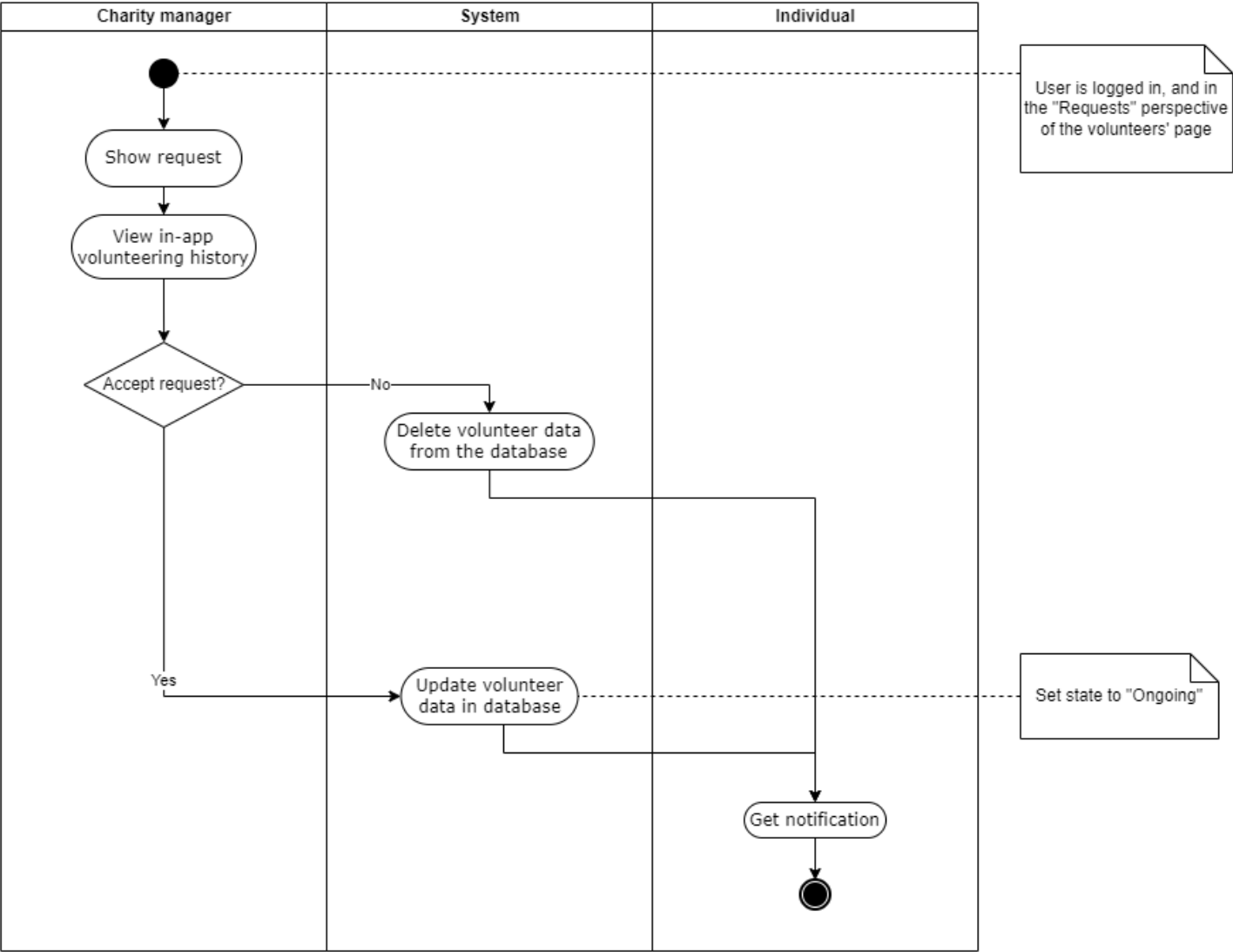
### AC\_14: Individual sends volunteer request





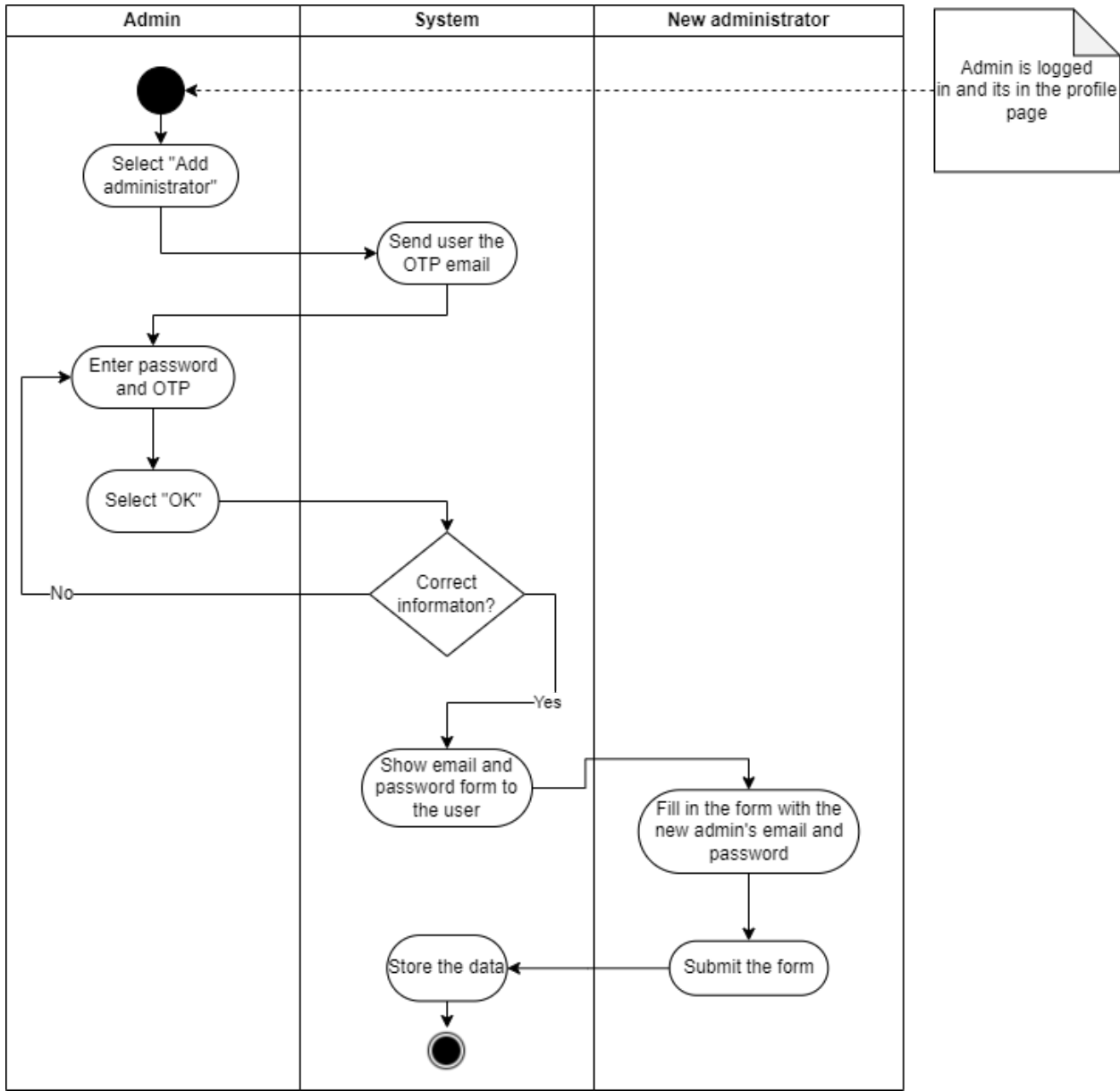
Goods Donation Facilitating System Requirements Specification

AC\_15: Charity manager evaluates a volunteer request



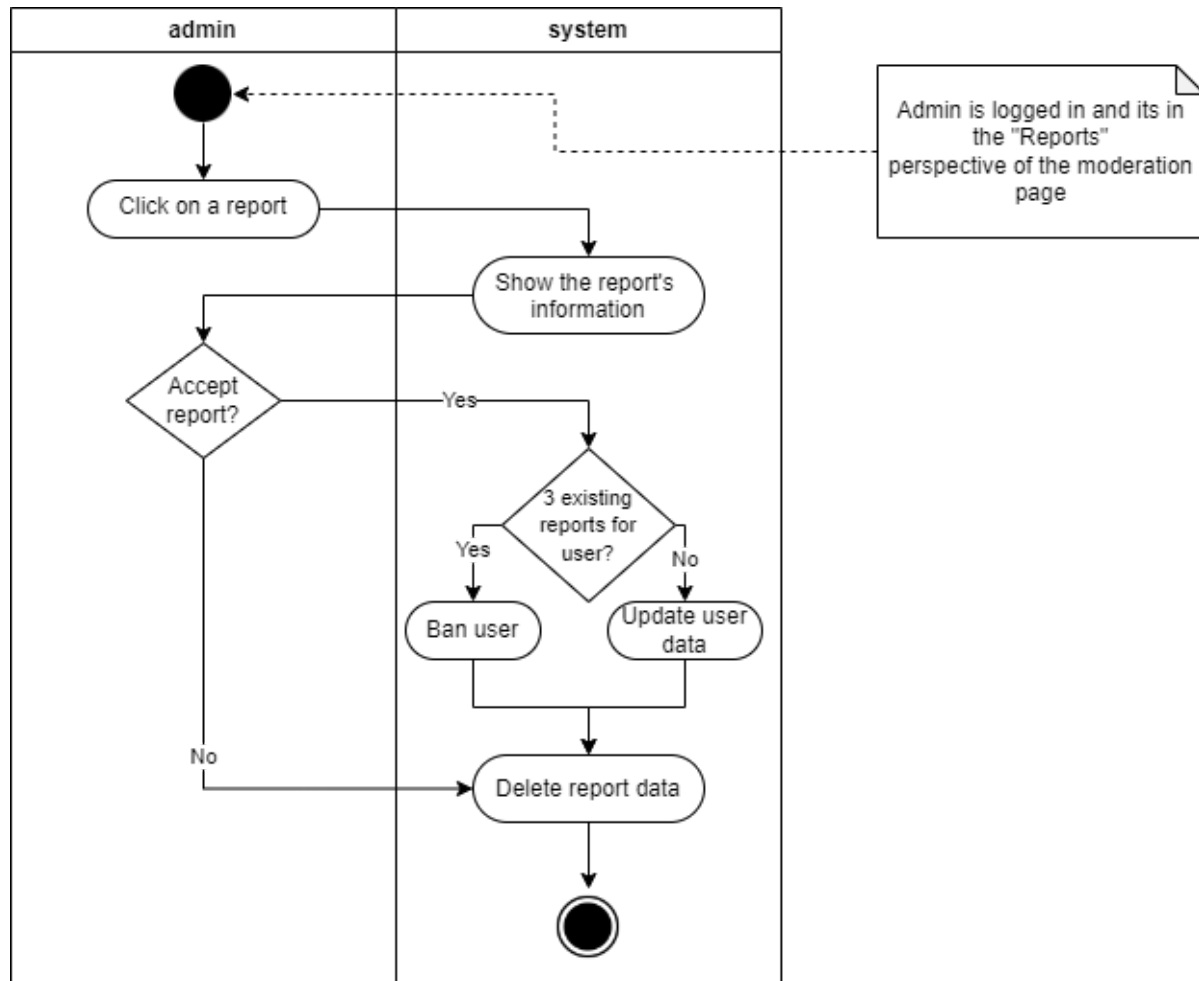
Goods Donation Facilitating System Requirements Specification

AC\_16: Admin adds another admin

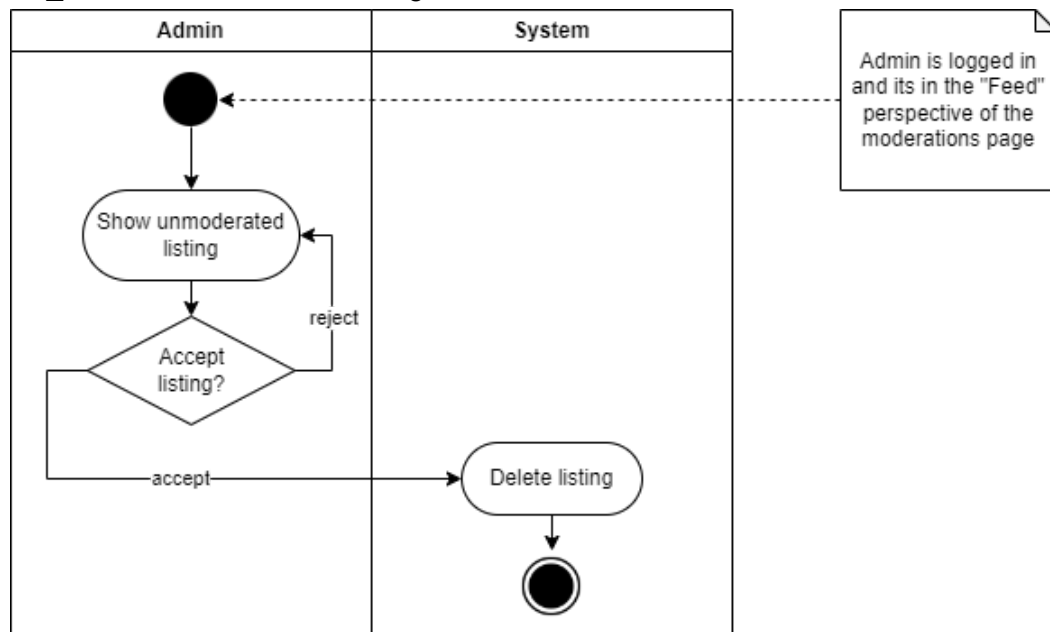


## Goods Donation Facilitating System Requirements Specification

AC\_17: Admin evaluates user report

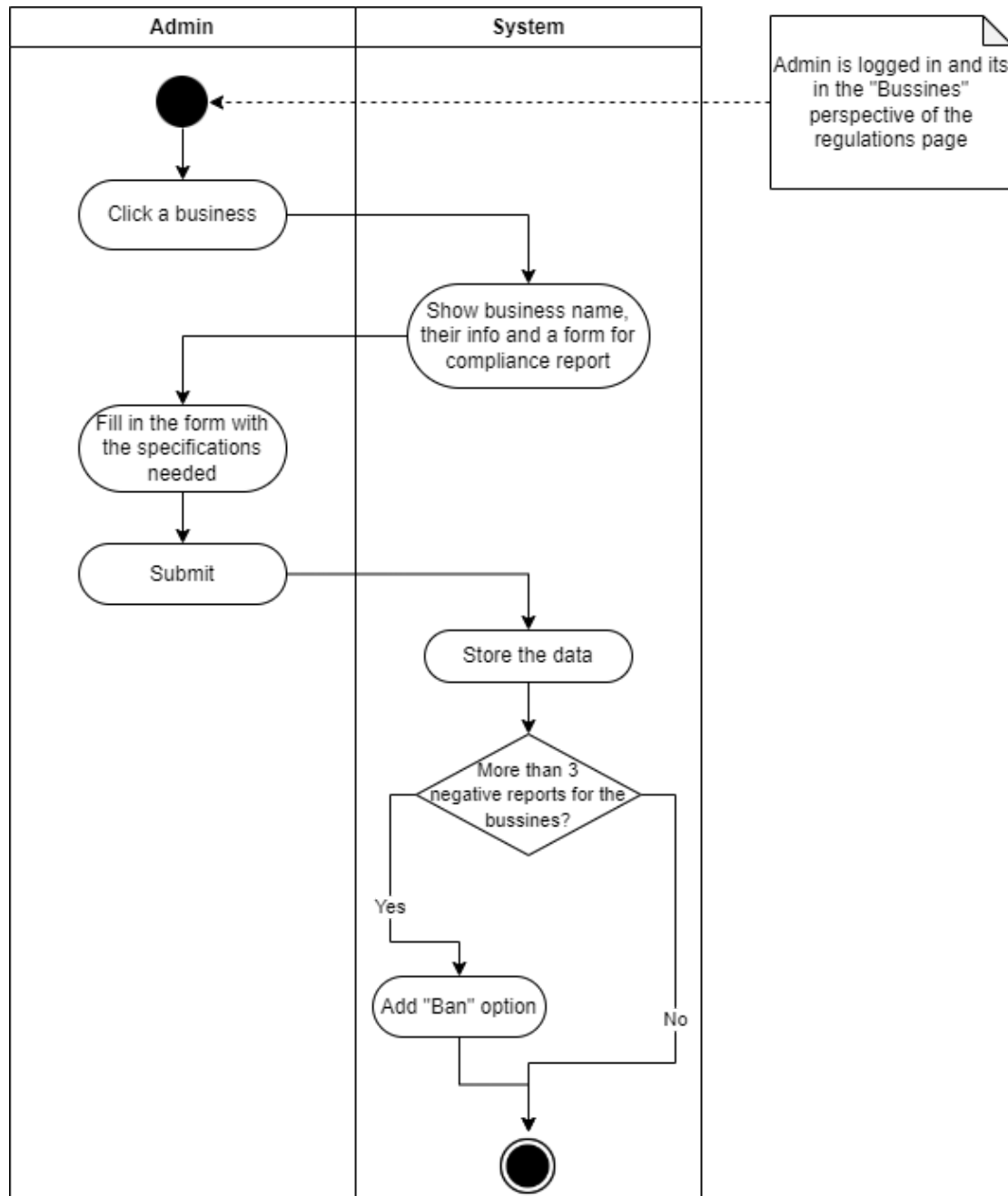


AC\_18: Admin moderates listing



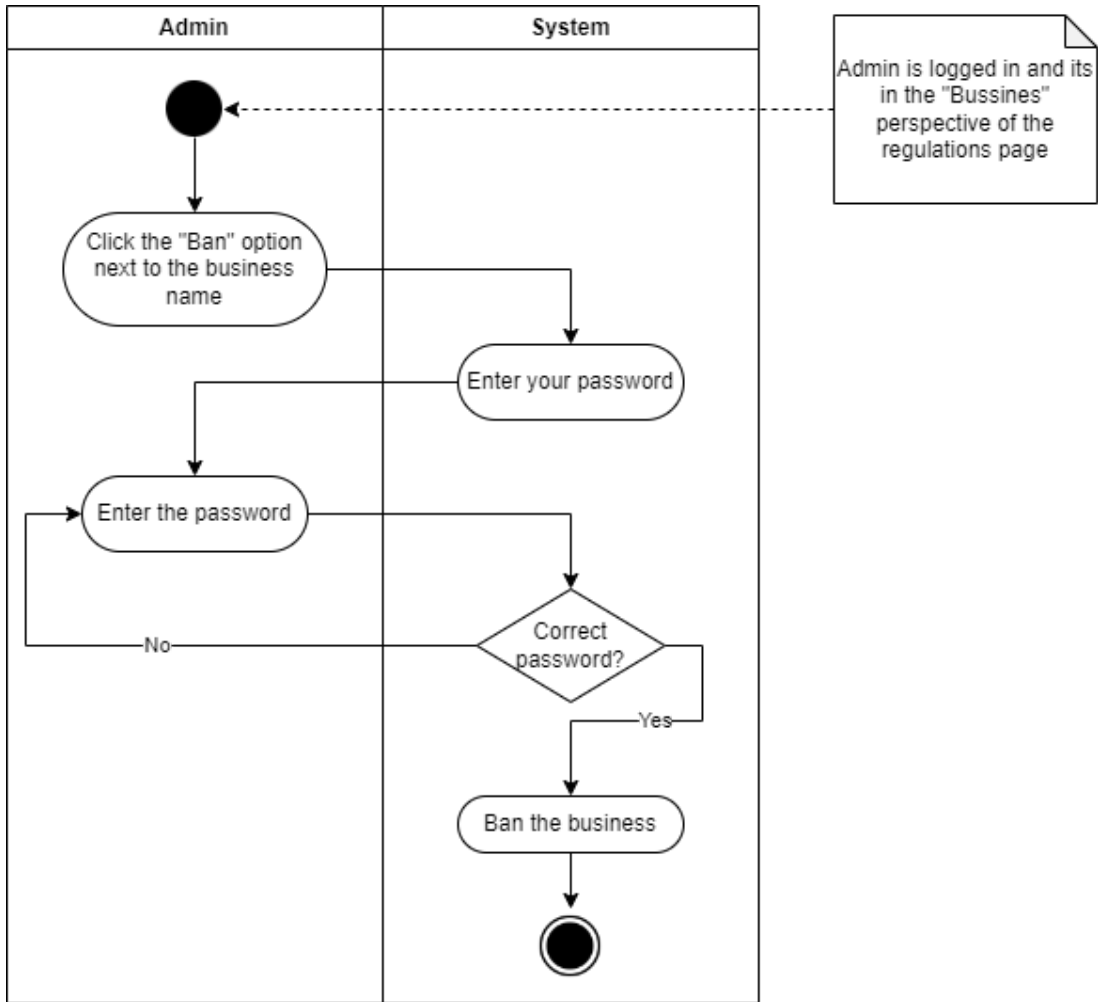
## Goods Donation Facilitating System Requirements Specification

AC\_19: Admin checks in a new compliance report



Goods Donation Facilitating System Requirements Specification

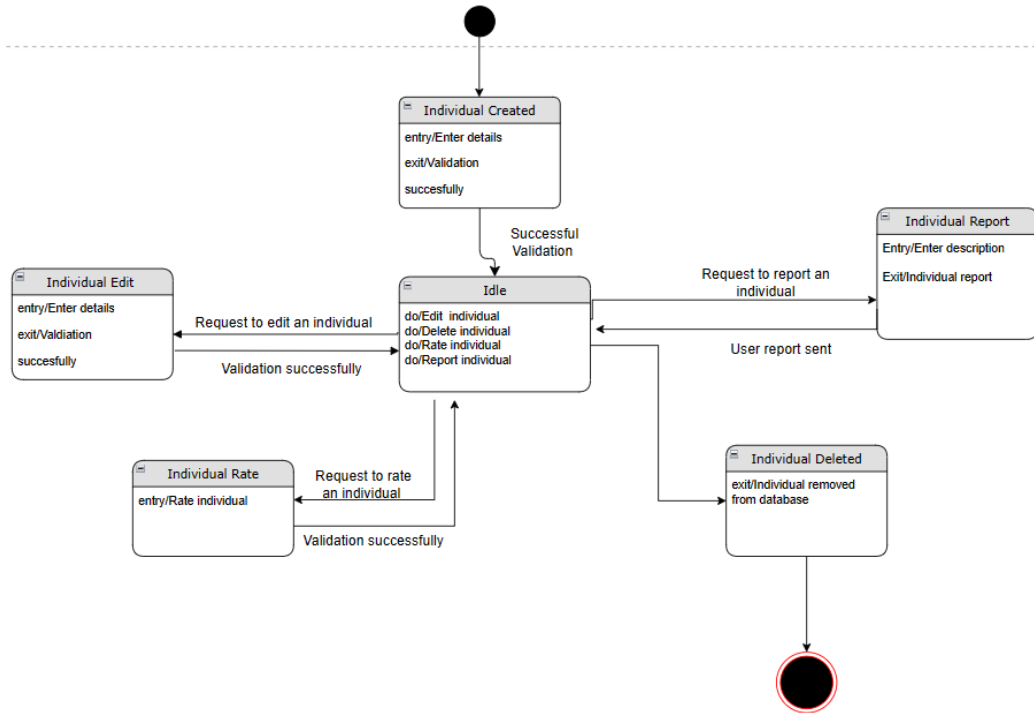
AC\_20: Admin bans a business



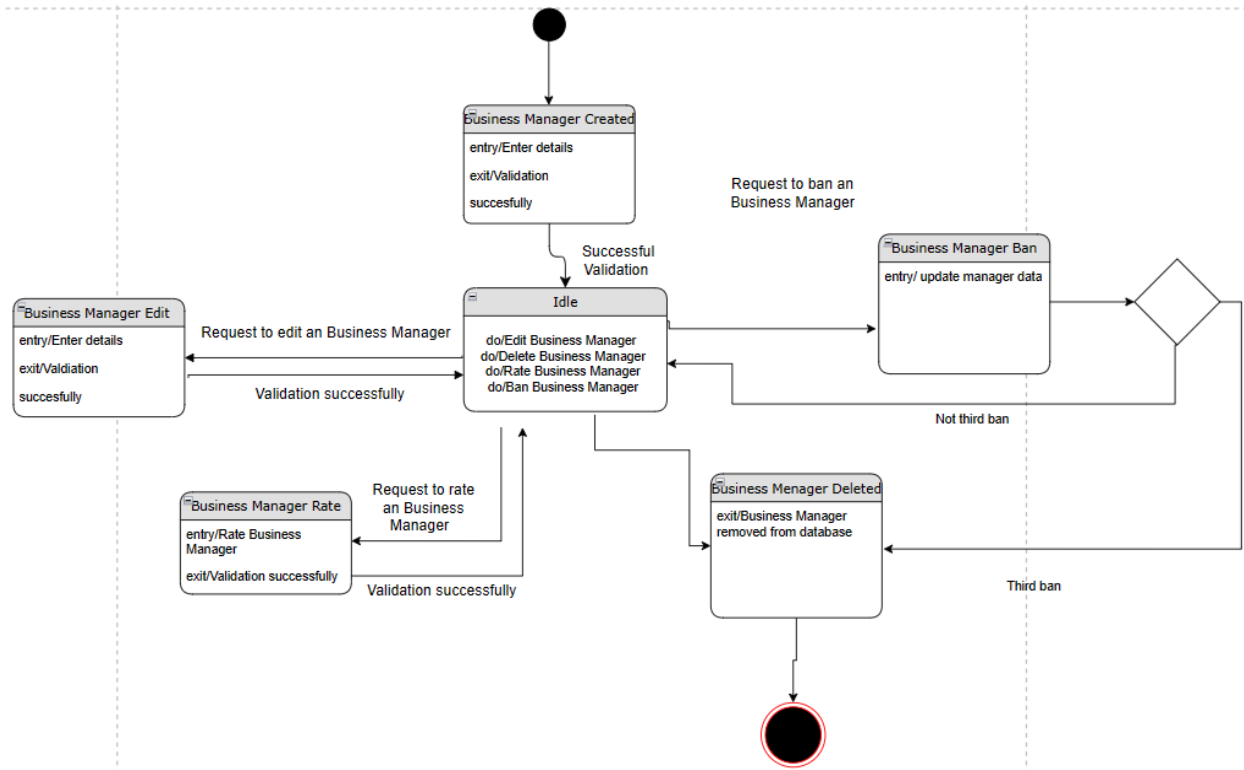
# Goods Donation Facilitating System Requirements Specification

## 4.6 State diagrams

Individual state diagram

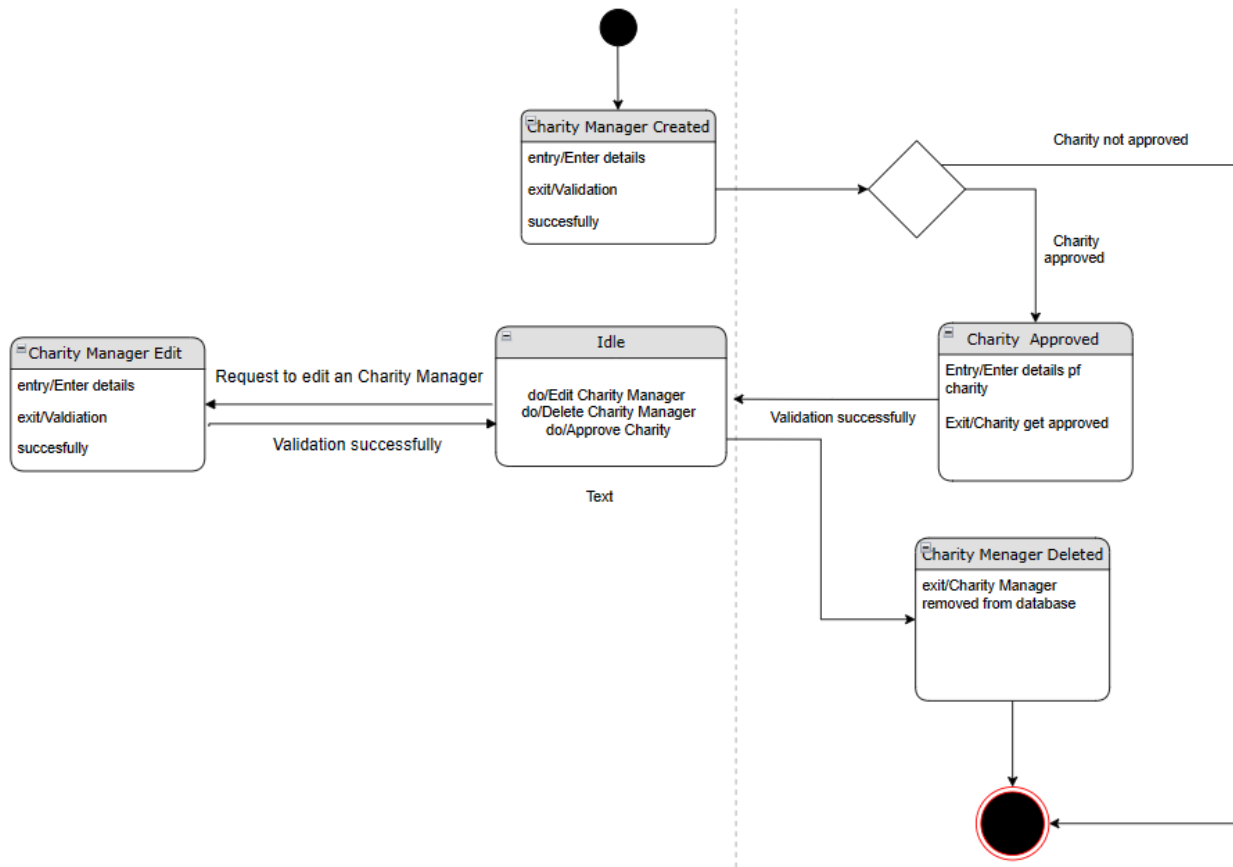


Business Manager state diagram

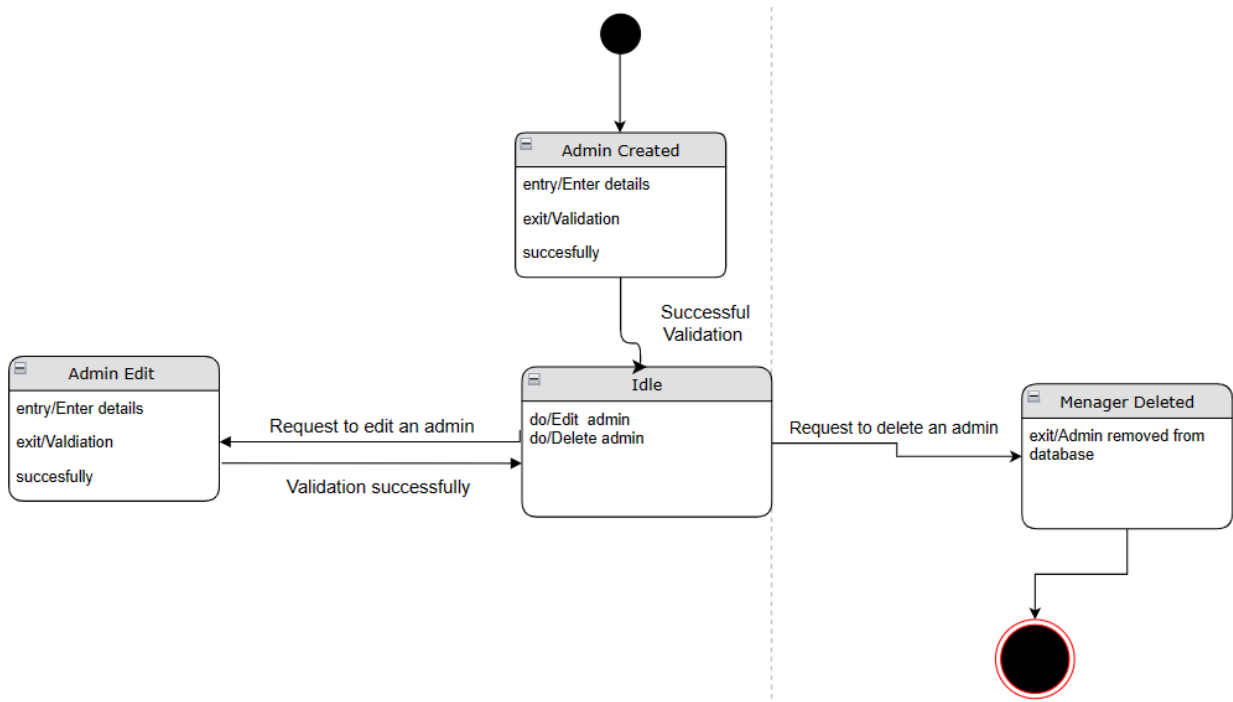


## Goods Donation Facilitating System Requirements Specification

Charity Manager state diagram

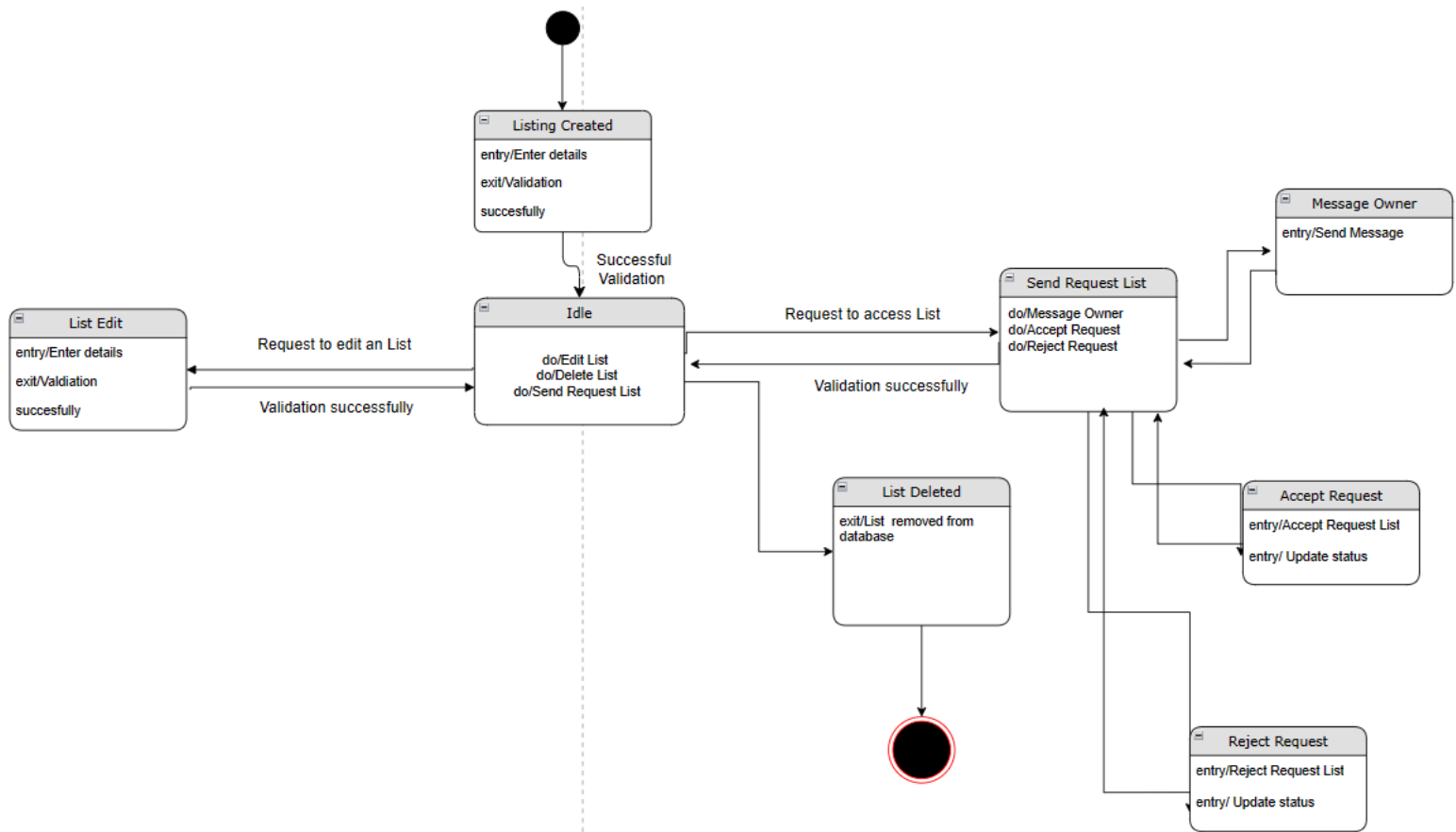


Admin state diagram



## Goods Donation Facilitating System Requirements Specification

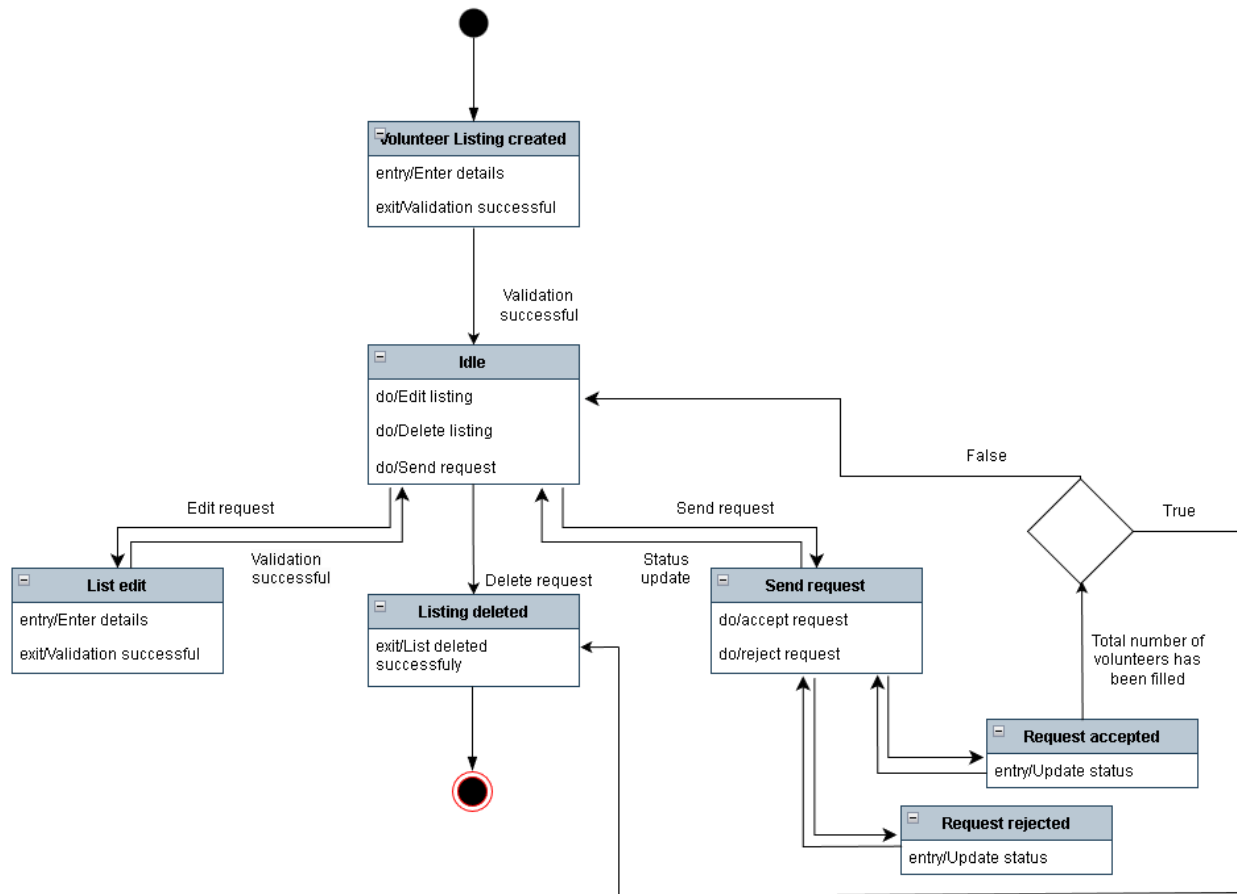
List state diagram





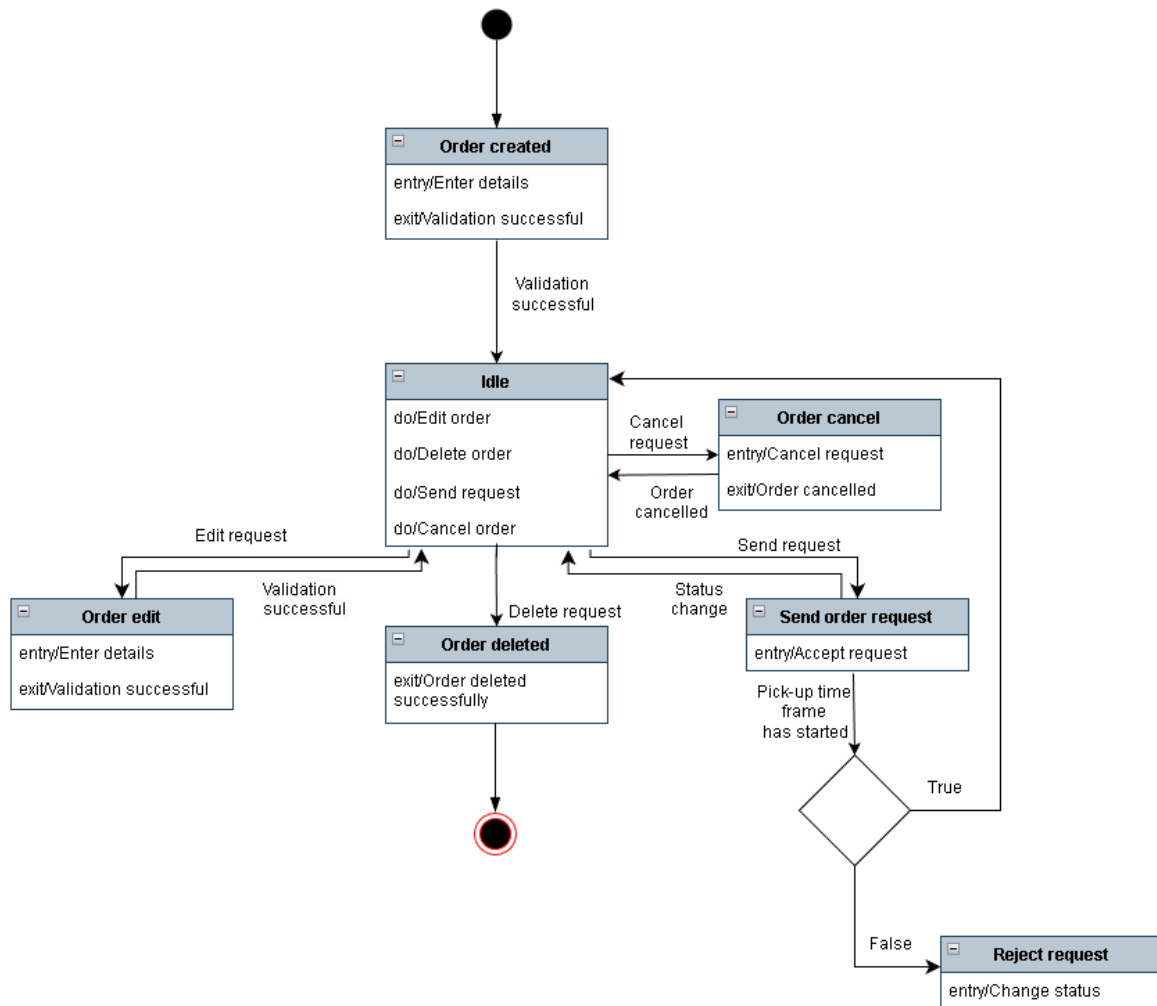
## Goods Donation Facilitating System Requirements Specification

Volunteer listing state diagram



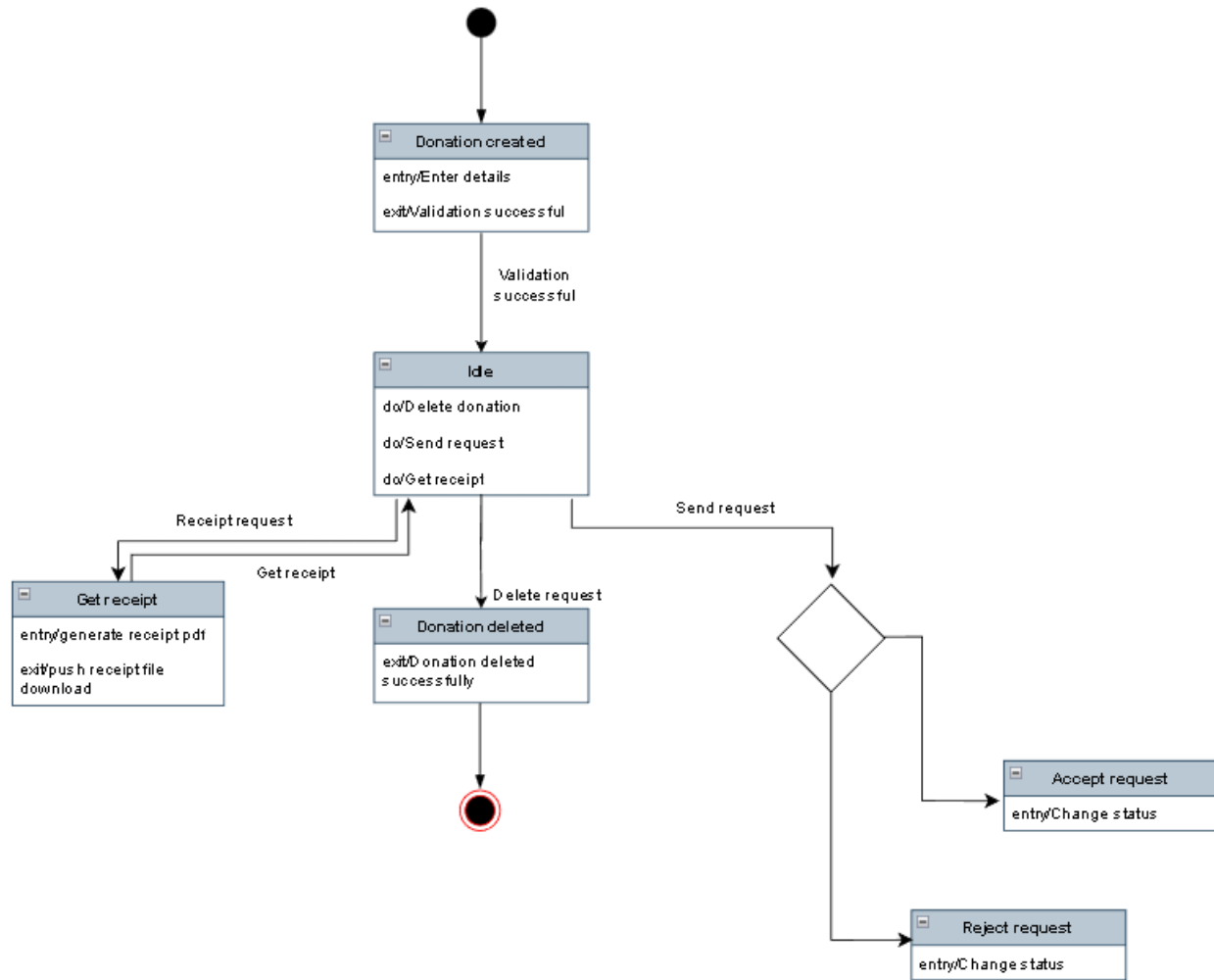
## Goods Donation Facilitating System Requirements Specification

Order state diagram



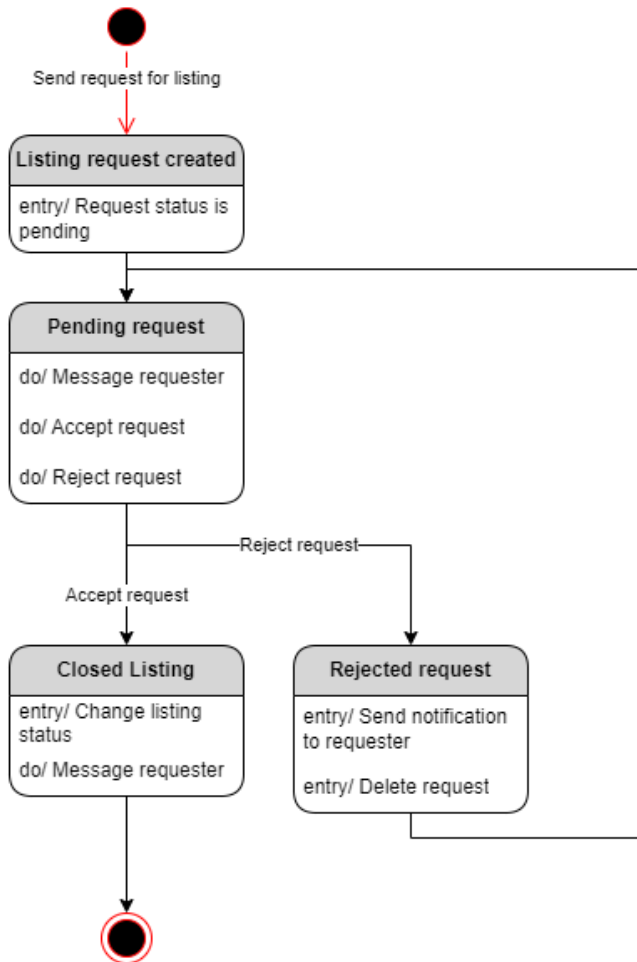
## Goods Donation Facilitating System Requirements Specification

Donation state diagram



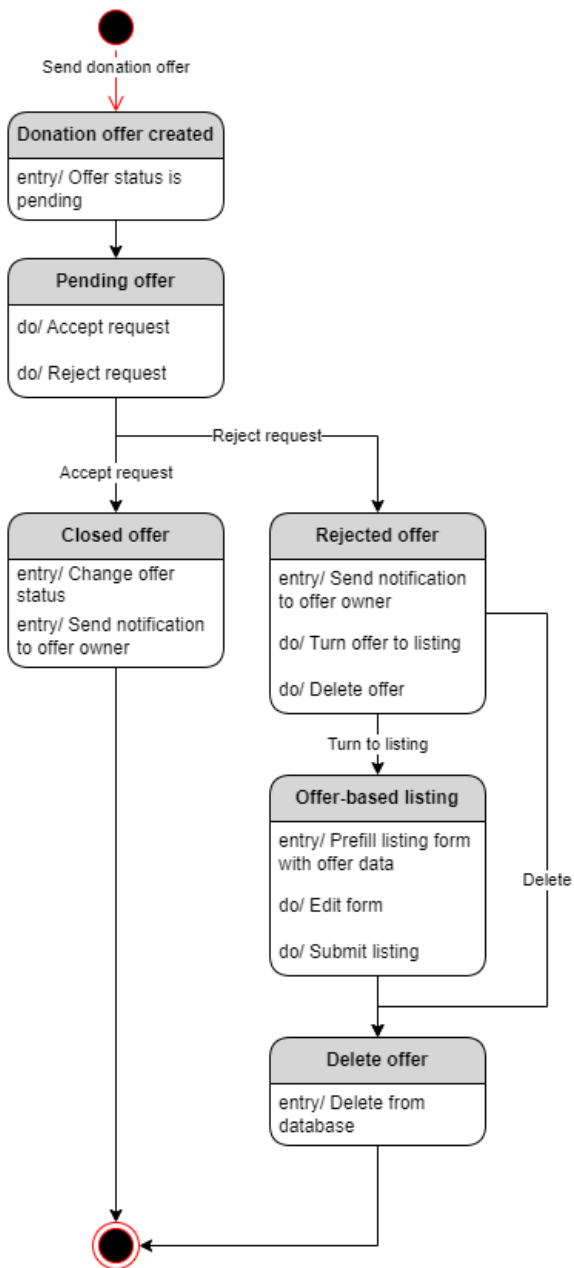
## Goods Donation Facilitating System Requirements Specification

Listing request (expanded state diagram)



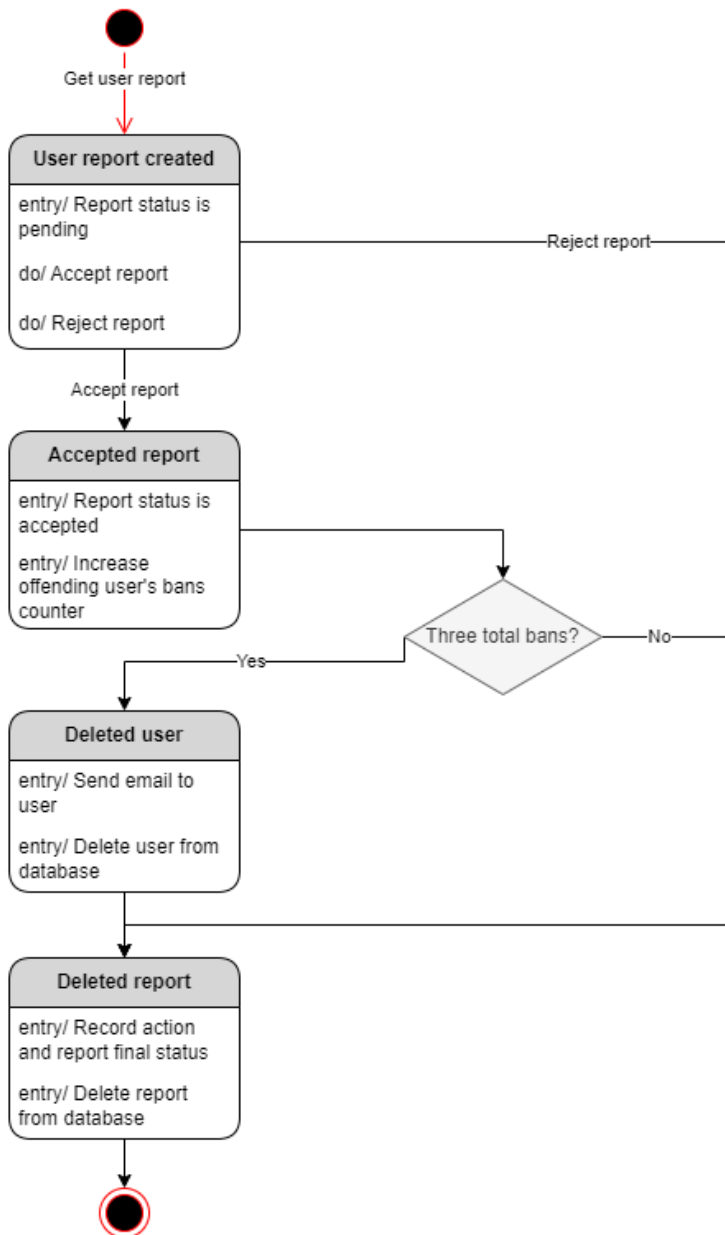
## Goods Donation Facilitating System Requirements Specification

Donation offer (expanded state diagram)



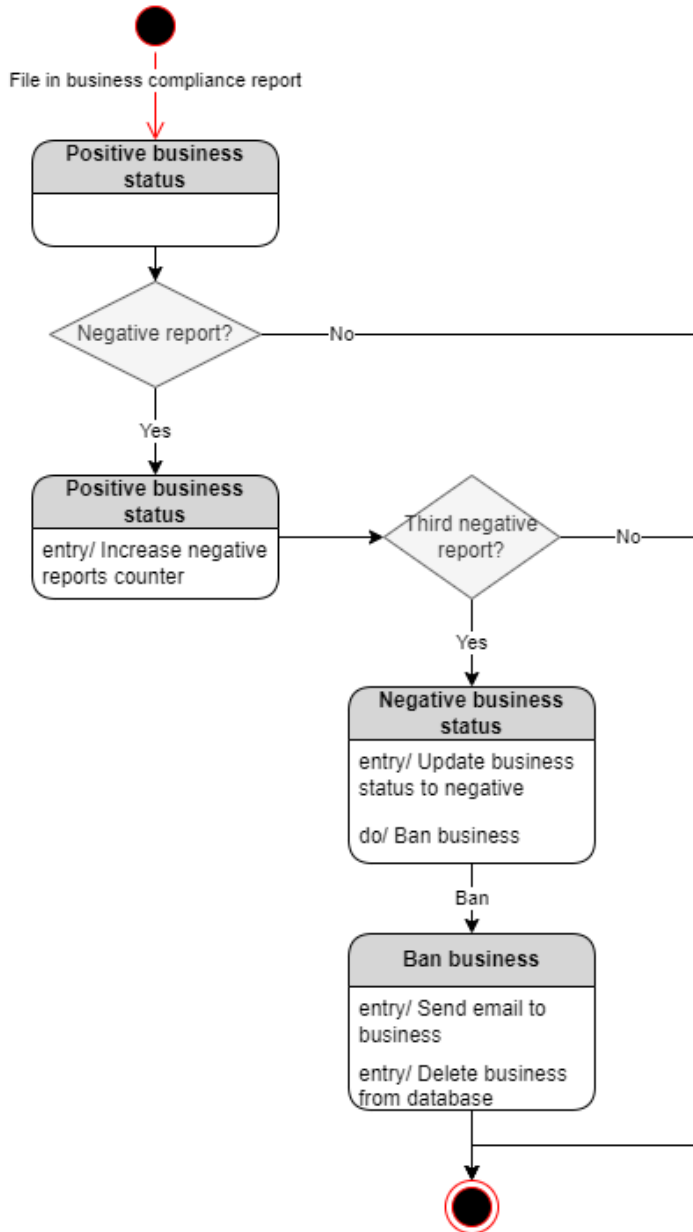
## Goods Donation Facilitating System Requirements Specification

User report (expanded state diagram)



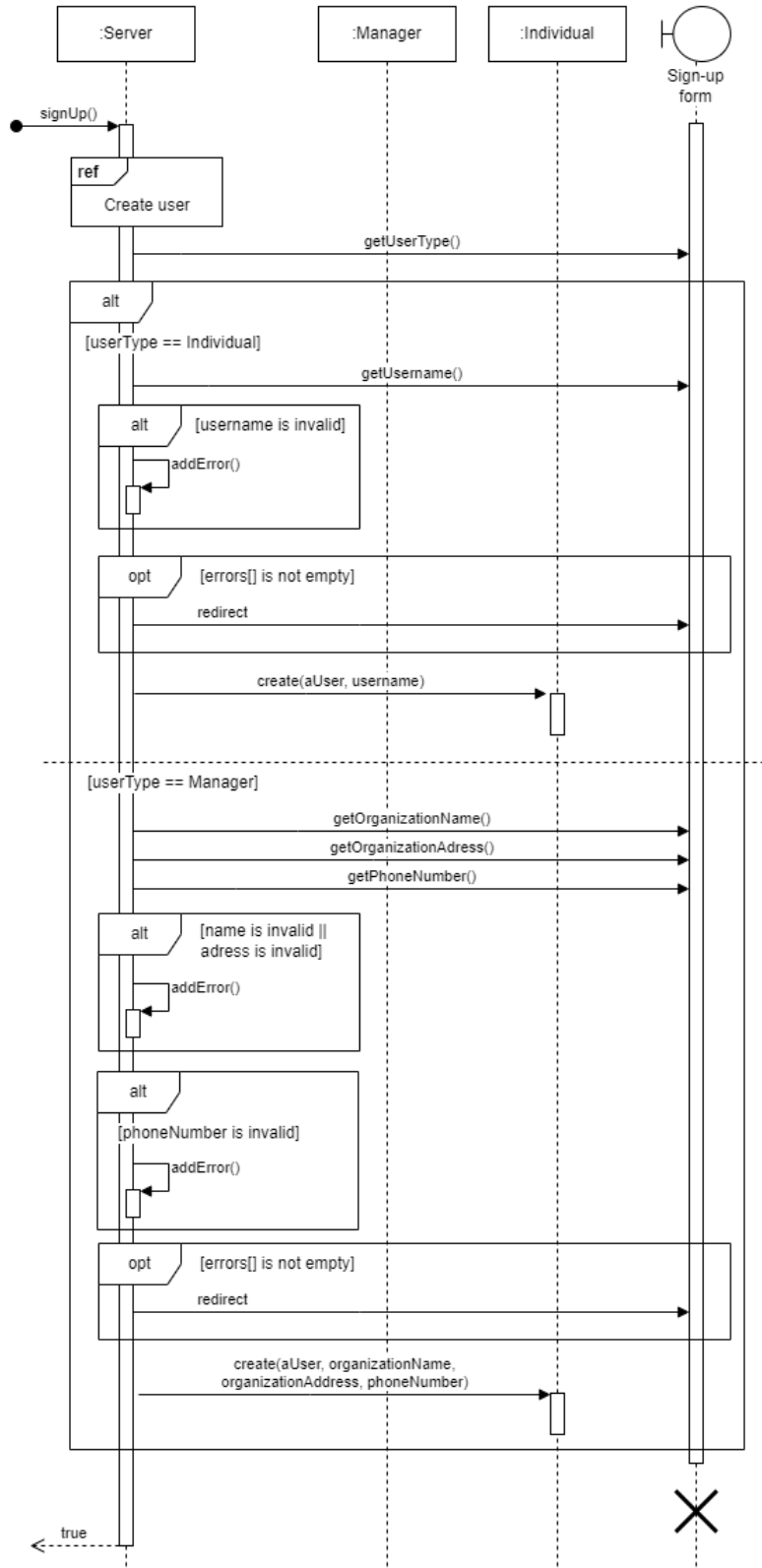
## Goods Donation Facilitating System Requirements Specification

Business compliance report (expanded state diagram)



## 4.7 Sequence diagrams

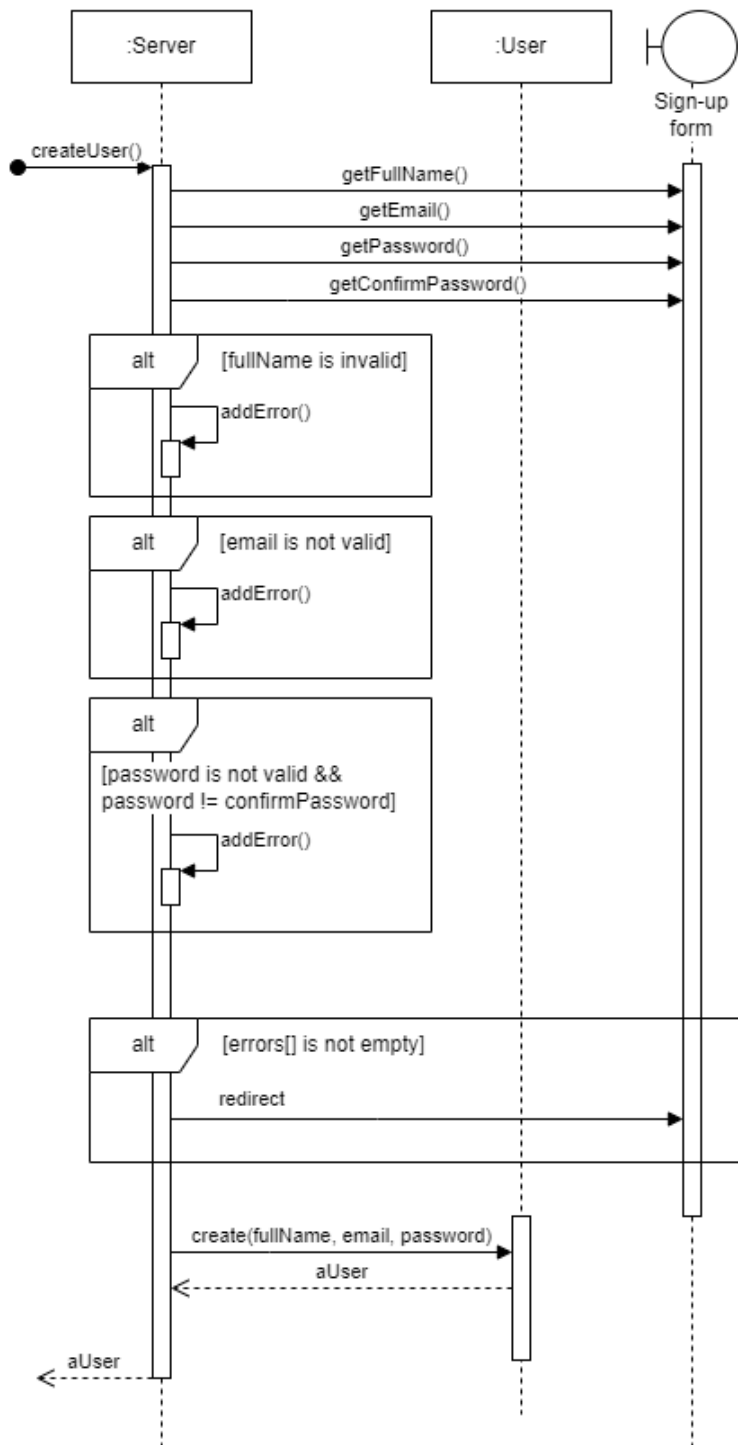
### User sign up





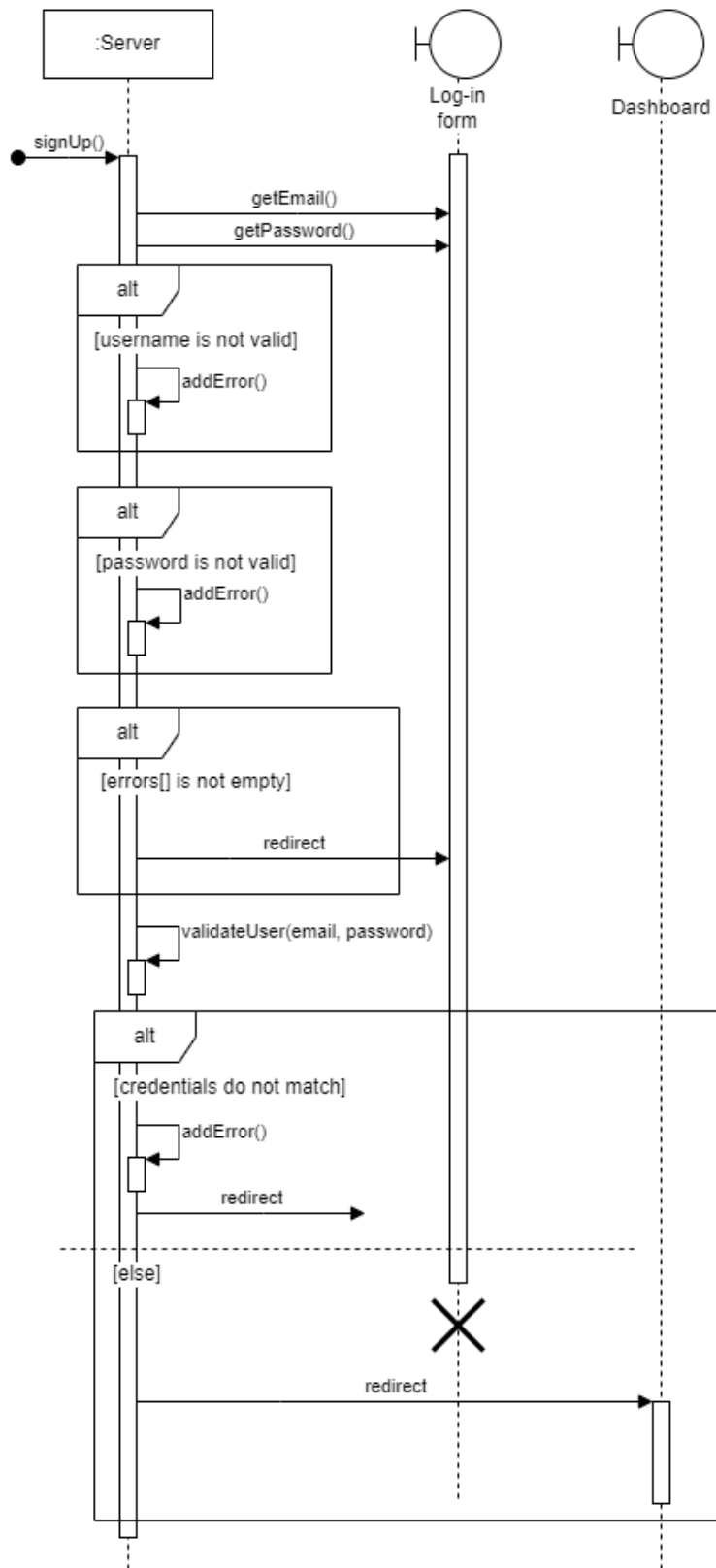
## Goods Donation Facilitating System Requirements Specification

### Create user



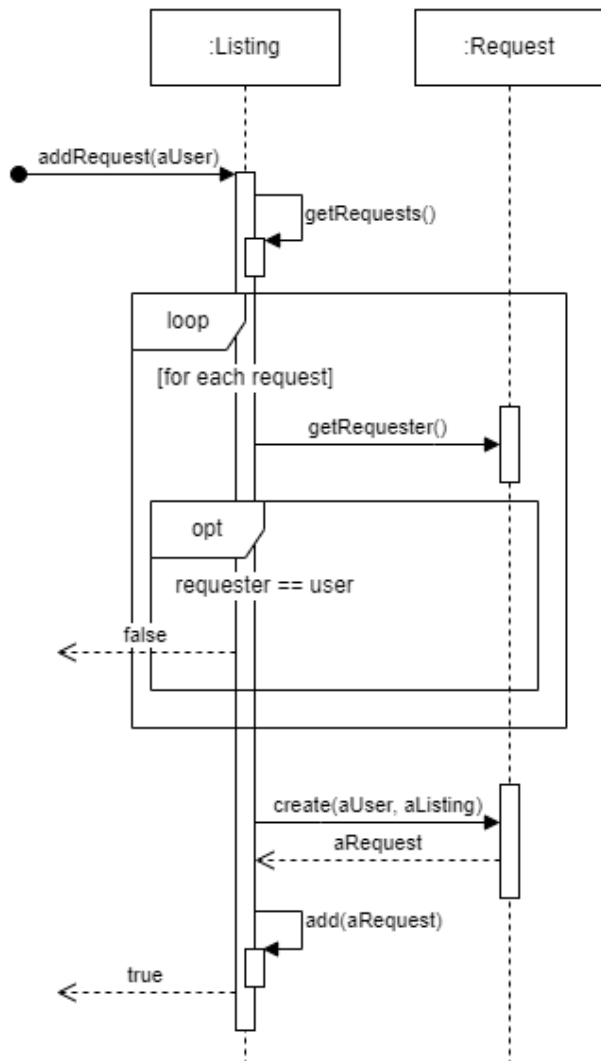
## Goods Donation Facilitating System Requirements Specification

### User log in

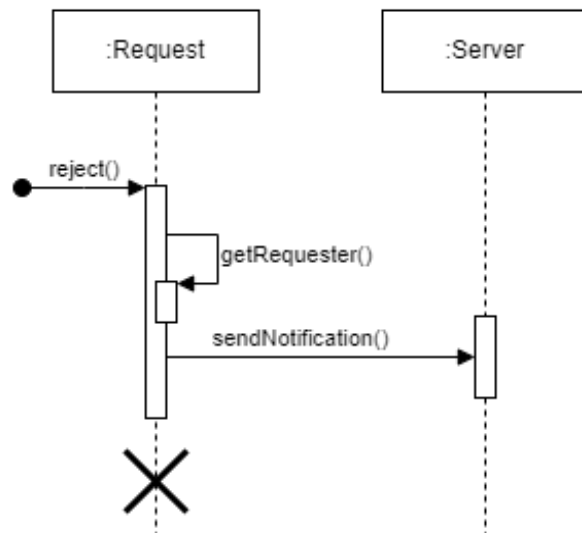


## Goods Donation Facilitating System Requirements Specification

Add request to product listing

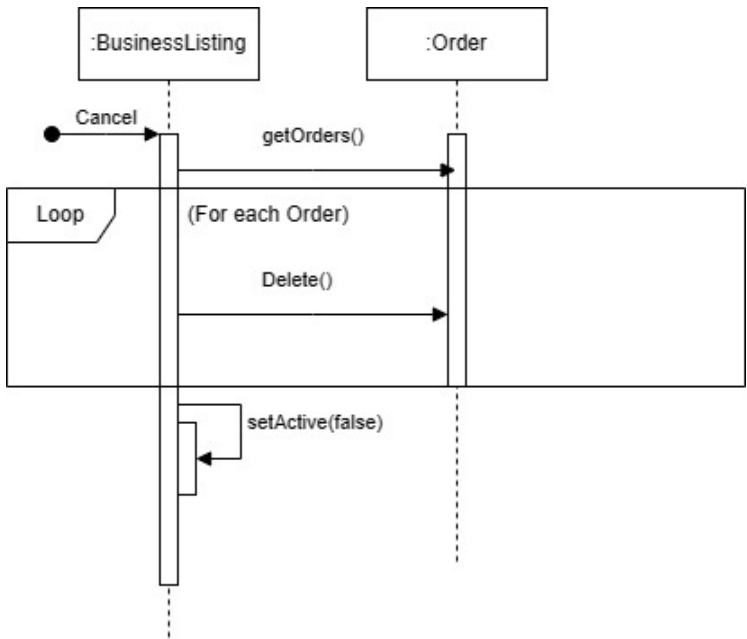


Reject listing request

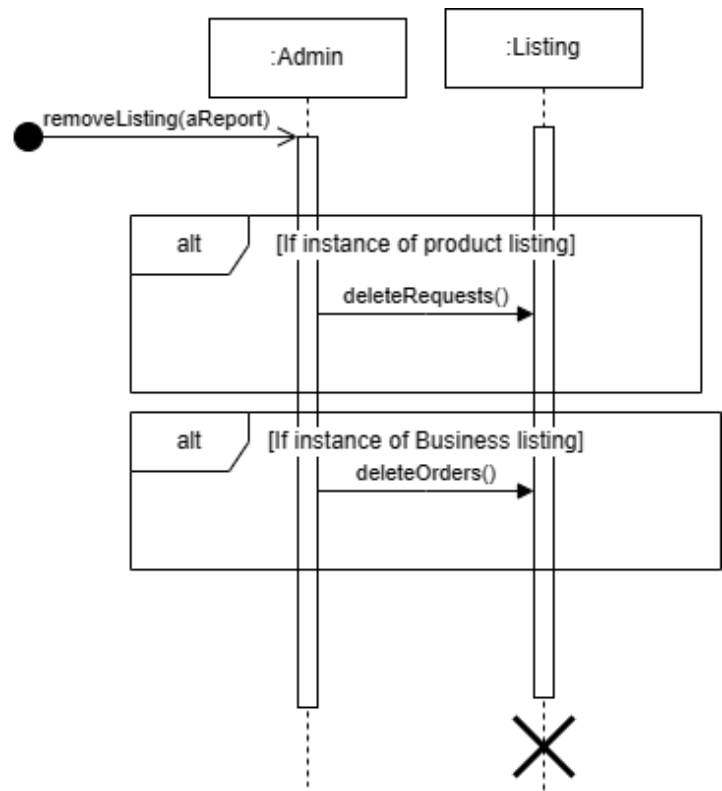


Goods Donation Facilitating System Requirements Specification

Cancel business listing

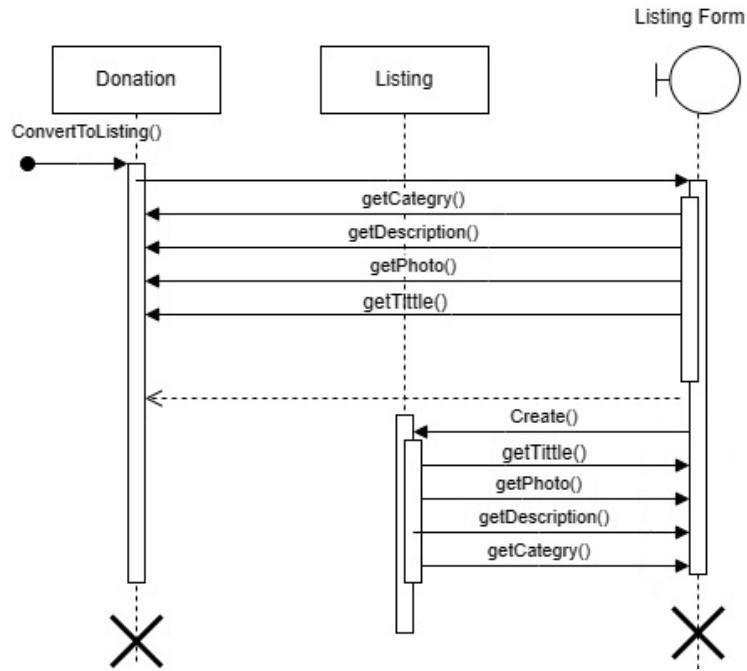


Remove listing

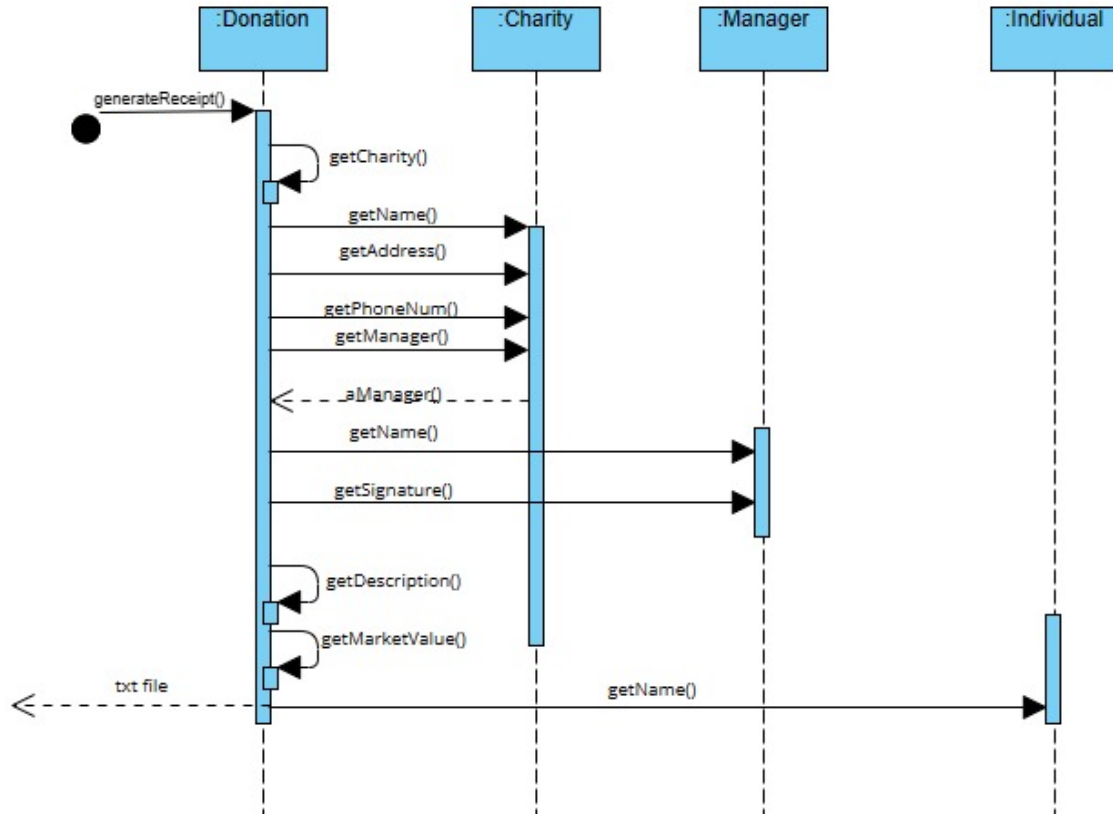


## Goods Donation Facilitating System Requirements Specification

Turn donation to listing

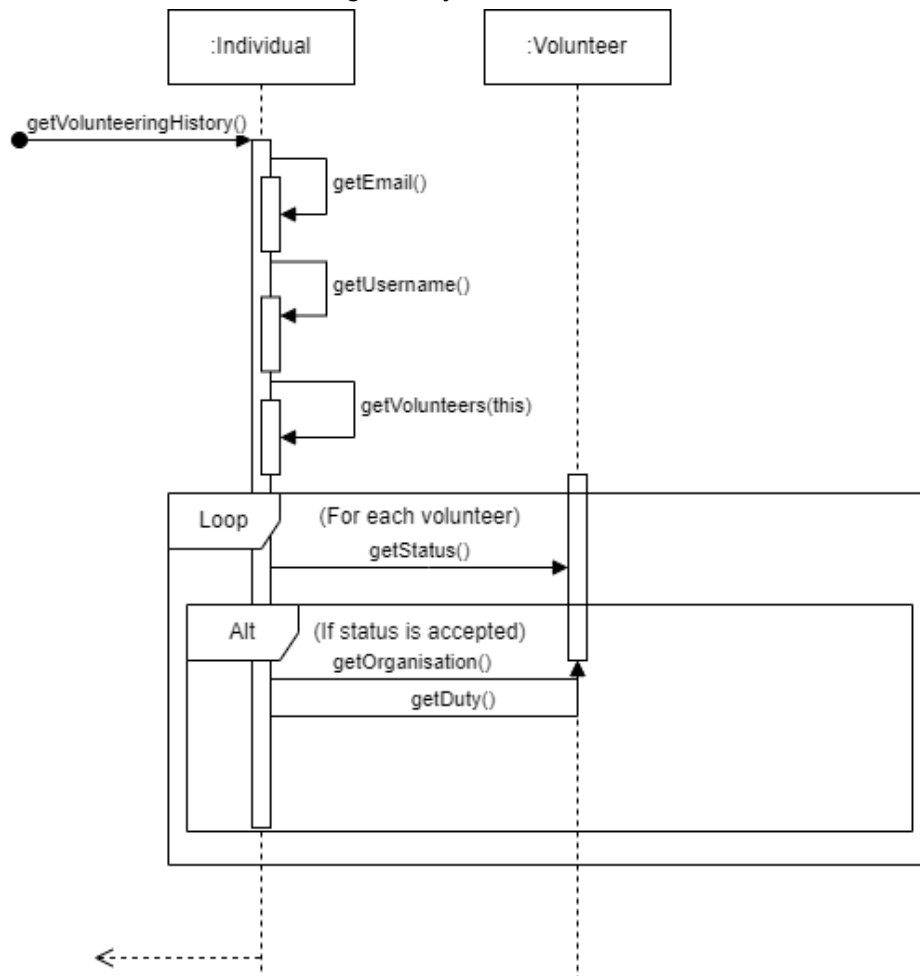


Get donation receipt

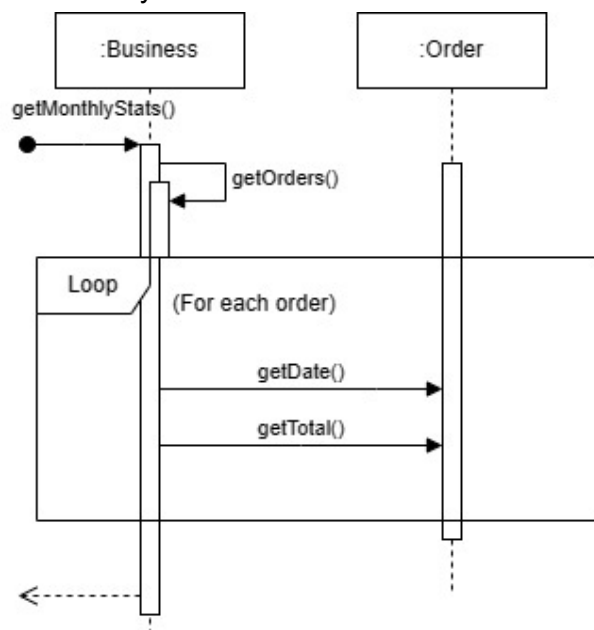


## Goods Donation Facilitating System Requirements Specification

Get individual's volunteering history

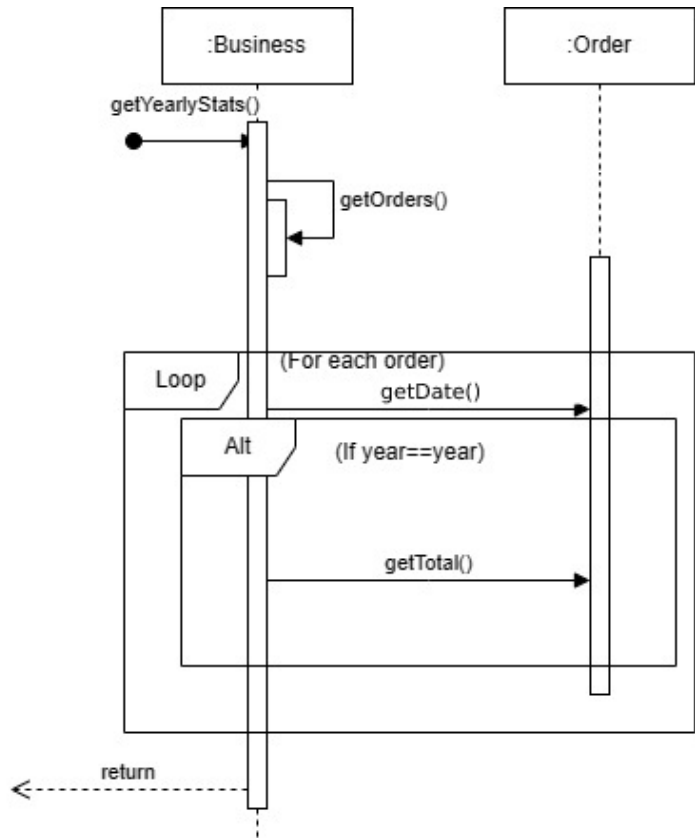


Get monthly business statistics

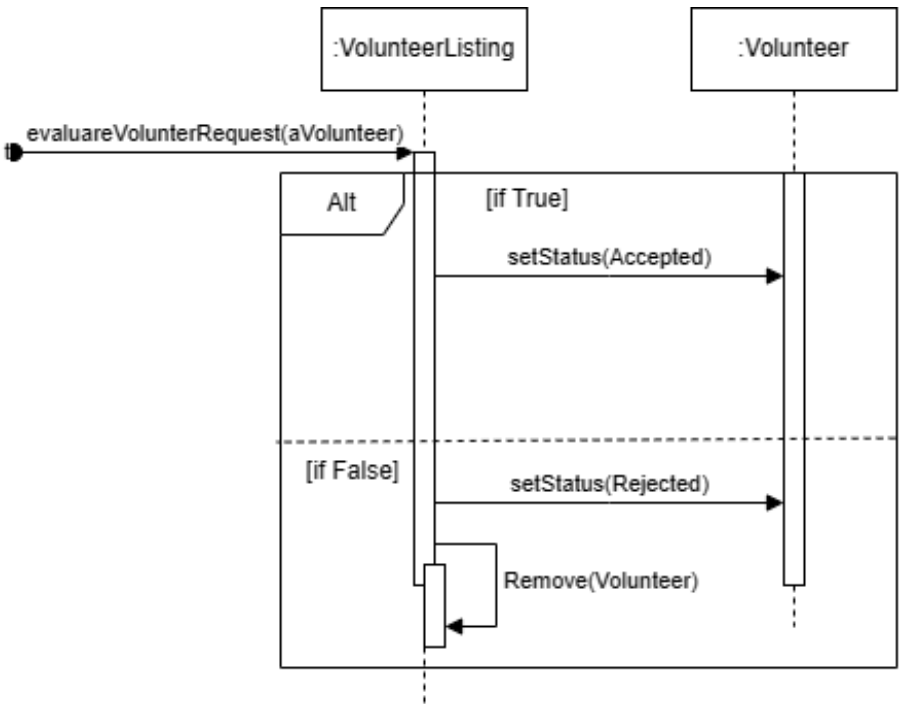


Goods Donation Facilitating System Requirements Specification

Get yearly business statistics

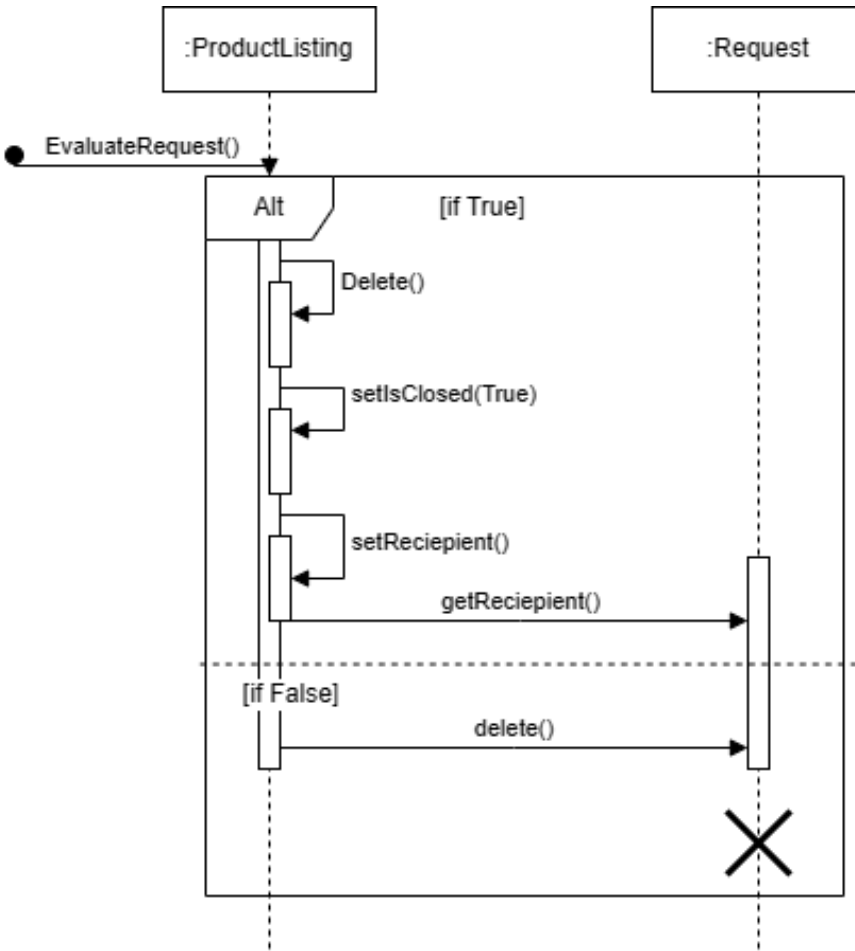


Evaluate volunteer request

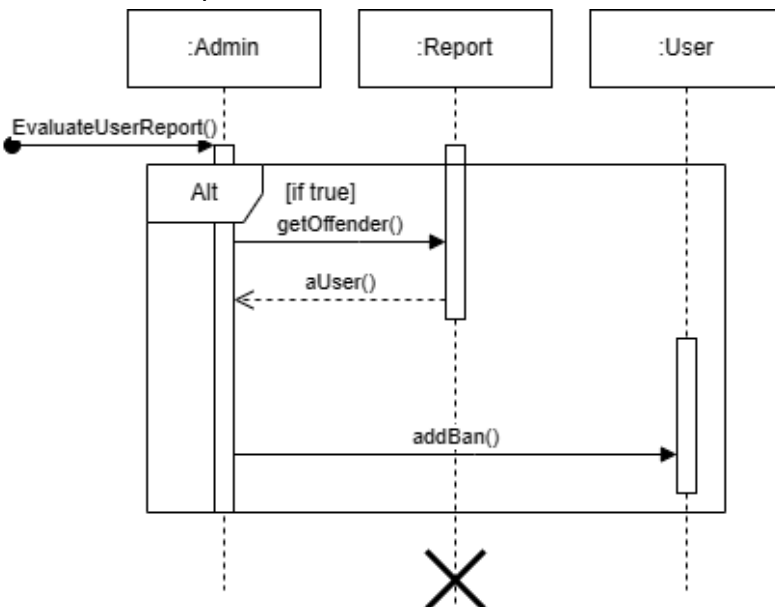


## Goods Donation Facilitating System Requirements Specification

Evaluate product listing request



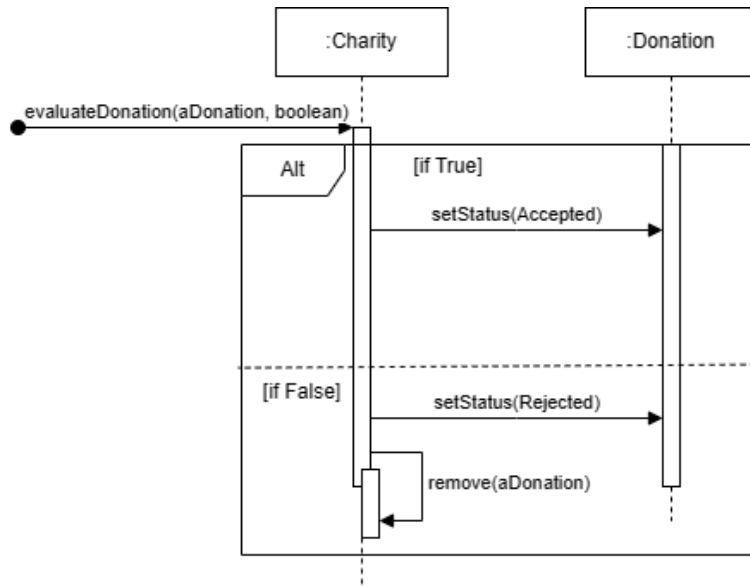
Evaluate user report





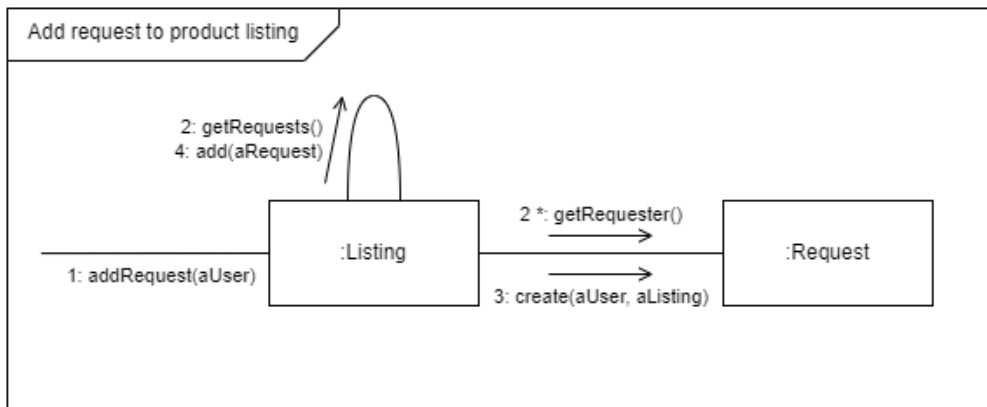
## Goods Donation Facilitating System Requirements Specification

Evaluate donation

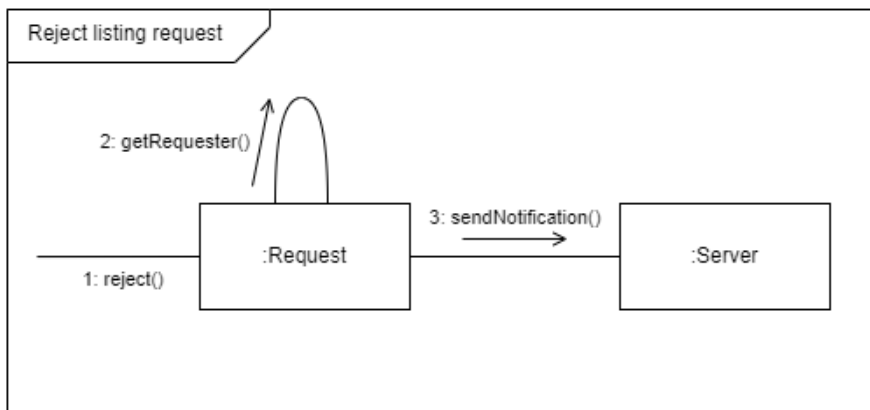


### 4.8 Communication diagrams

Add request to product listing

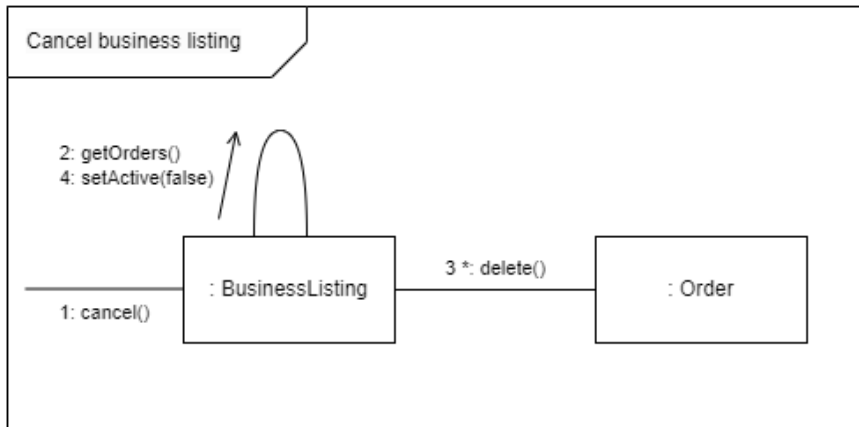


Reject listing request

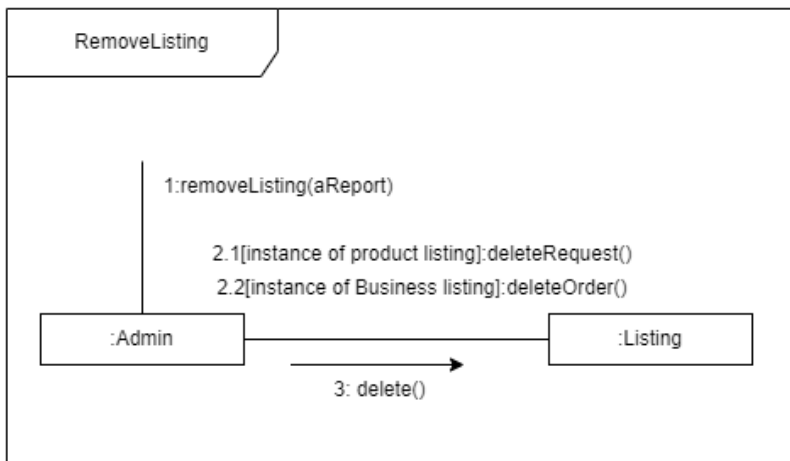


## Goods Donation Facilitating System Requirements Specification

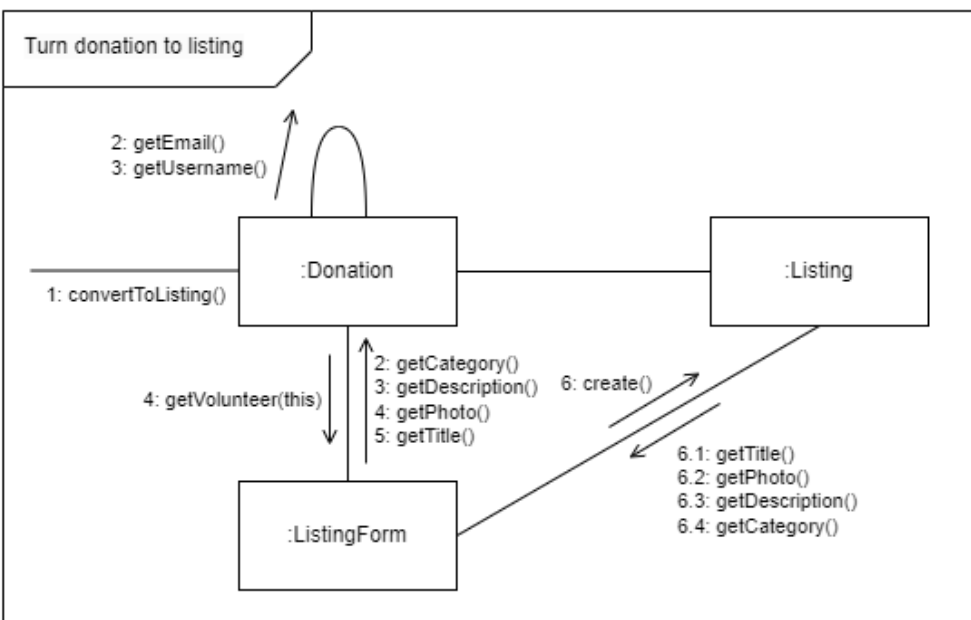
### Cancel business listing



### Remove listing

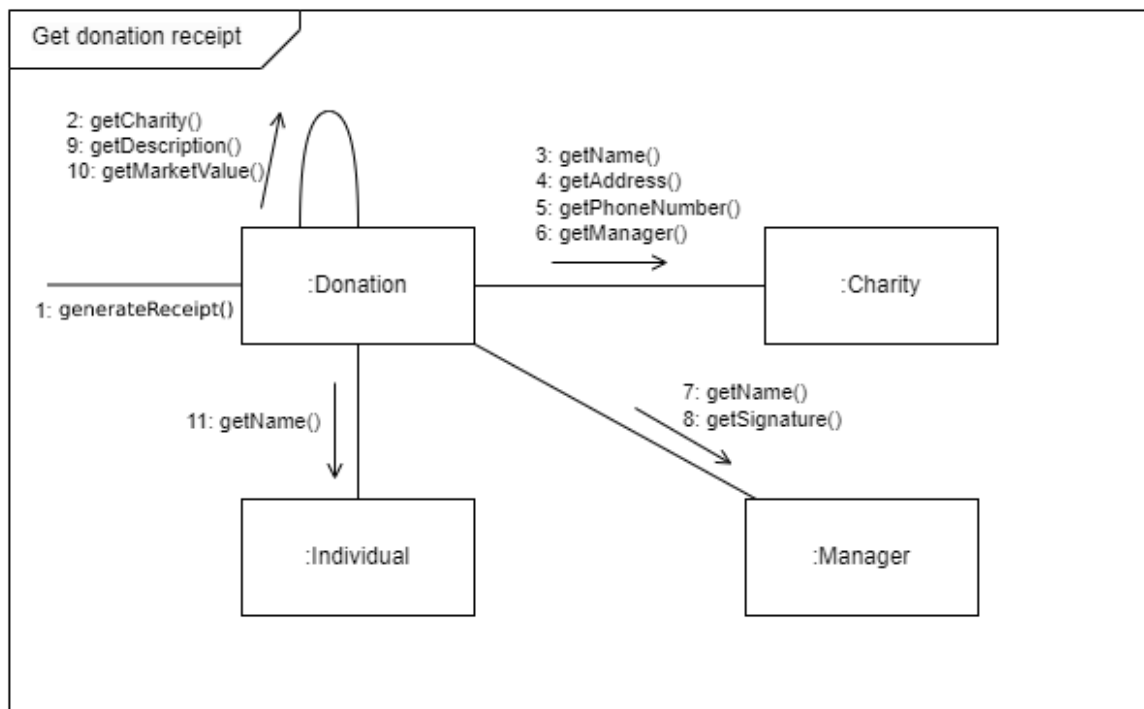


### Turn donation to listing

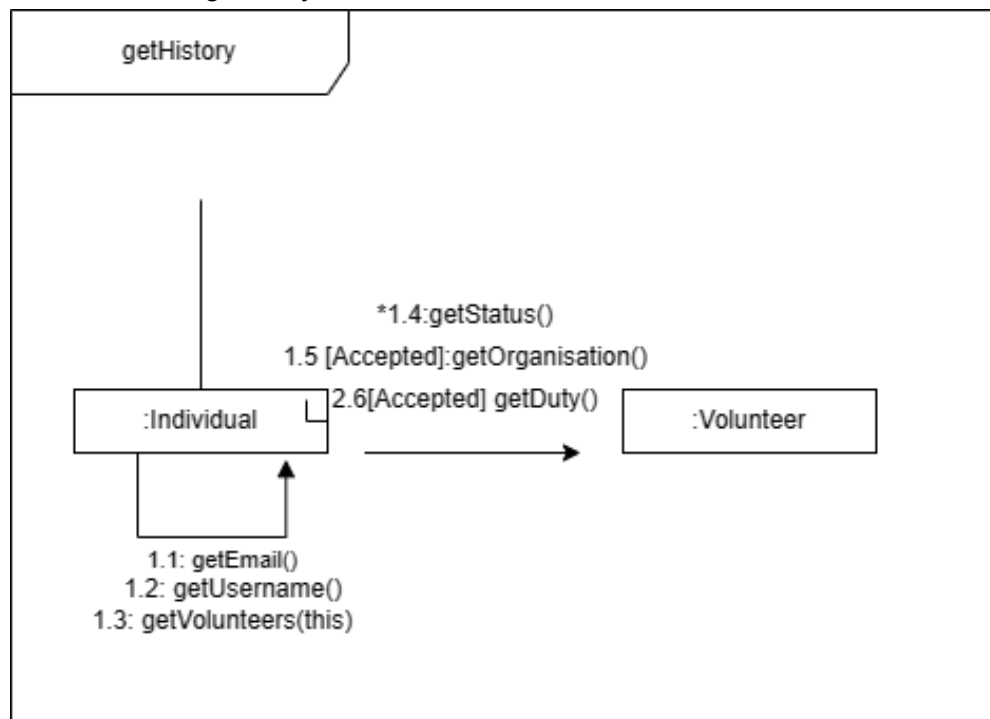


## Goods Donation Facilitating System Requirements Specification

### Get donation receipt

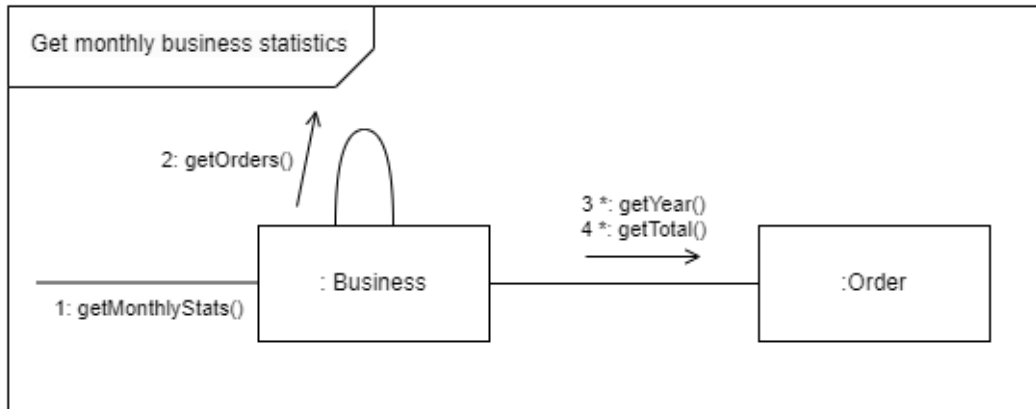


### Get volunteering history

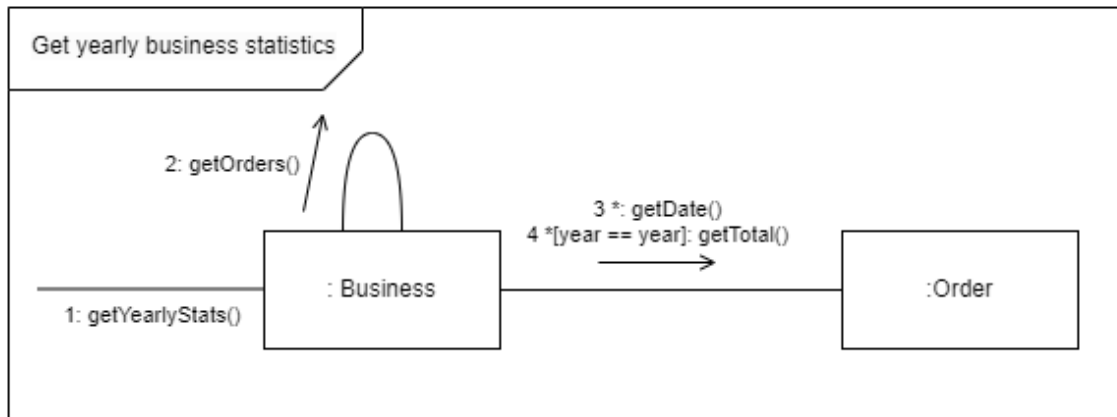


## Goods Donation Facilitating System Requirements Specification

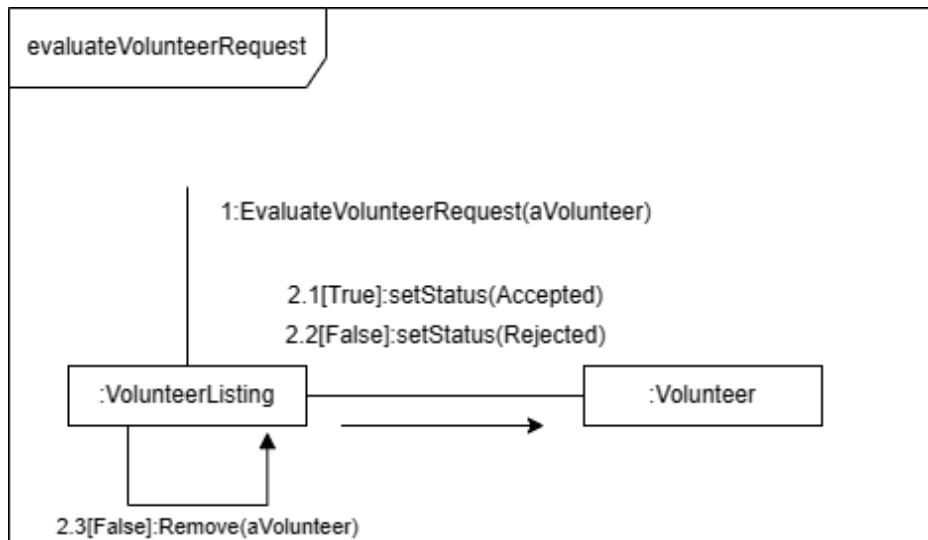
### Get monthly business statistics



### Get yearly business statistics

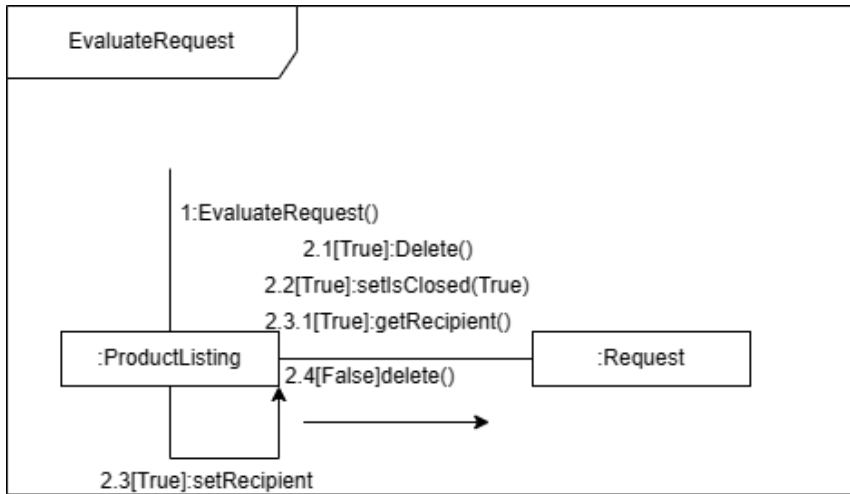


### Evaluate volunteer request

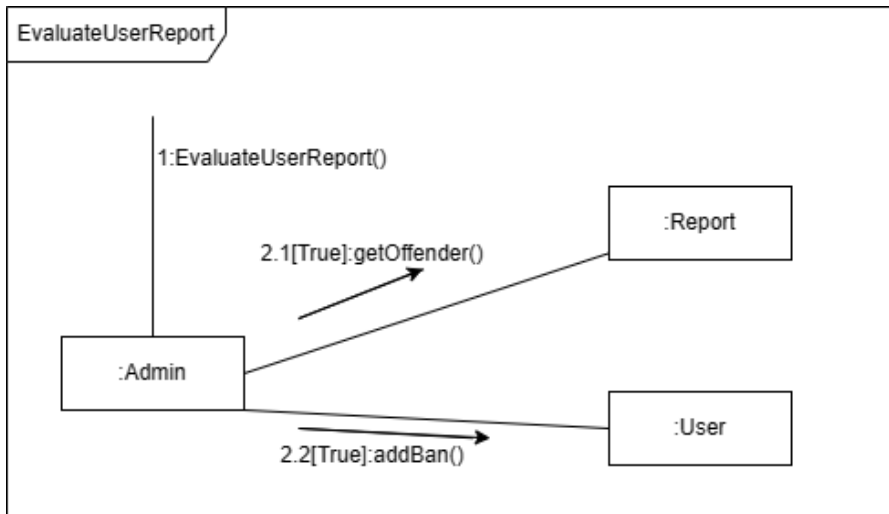


## Goods Donation Facilitating System Requirements Specification

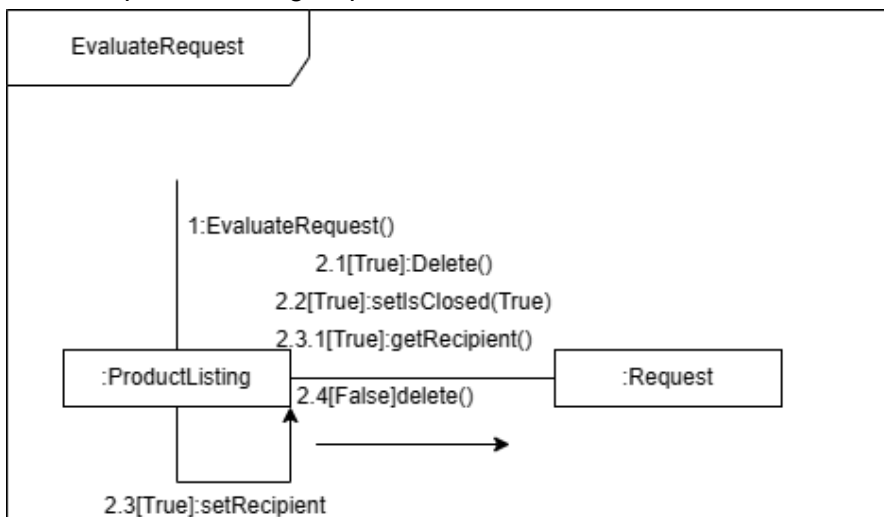
### Evaluate product listing request



### Evaluate user report



### Evaluate product listing request



#### 4.9 Class diagram

