



INSTITUTE OF ENGINEERING & MANAGEMENT

SOFTWARE REQUIREMENT SPECIFICATION

VITARAN

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Approver Name	Title	Signature	Date

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

INSTITUTE OF ENGINEERING & MANAGEMENT

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1. Product Description

1.1 Purpose

1. A lot of people go hungry due to poverty and lack of food, or go cold due to lack of proper clothing, while there are people who have ample of it, and do not know what to do with it.
2. There are plenty of resources for everyone, but not properly distributed.
3. There is a lack of proper medium of distribution of the resources, a medium to take the excess resources and bring it to the needy.

1.2 Scope

- To create an application, where the people who have material in excess or would wish to contribute out of goodwill, can put up their availability status.
- At a certain time of the day, a notification about the total items available is sent to the collecting party (NGOs / Orphanages) who would be given location of all the items, from where they can collect.
- This would save their expenditure of purchase, and they would only have to pay for transportation.

1.3 Stakeholders and Users

Stakeholders	Functions	Location	Type of Device
NGO	Uses the app to manage the donations that it receives.	Non-Profit Organisation	Android device, System
Donor	Can voluntarily pledge donation.	Common people	Android device
Collection Unit	Uses the app to locate the collection points and collect.	Non-Profit Organisation	Android device

1.4 Assumptions

- Ample amount of donors are present to fulfill the requirements and balance the cost of collection.
- Collection unit is always available when required.
- All the users must know the basics to operate an android device.

1.5 Constraints

- Actors need android smartphones to be able to use the application.
- A donor's request after confirmation must not be cancelled.
- Effective internet connection is required for all the actors to be able to use the application.

2. Functional Requirements

2.1 NGO

2.1.1 Manage Profile

1. NGO Representative clicks on Manage Profile button after logging in.
2. NGO Representative makes list of required items by doing the following :
 - Selects an item from a dropdown of default options such as:
 - Pulses
 - Rice
 - Flour
 - Soap
 - Detergent
 - Other
 - If “Other” is selected, the NGO representative performs the following steps to add item to the dropdown of default options :
 - Enter name of item (must not be empty)
 - Select Add Item.
 - System adds the item to the dropdown of default options for item if item name is not empty.
 - Select the newly added item from the dropdown
 - Selects category from a list of default options such as:
 - Food
 - Clothing
 - Stationary
 - Electronics
 - Additionally, NGO representative shall be able to choose a new category by doing the following :
 - Enter category name in a text field.
 - Select Add.
 - Select the newly added category from the category dropdown.
 - Enters a minimum limit for quantity in a textbox.
 - Selects a unit for the entered quantity, from a dropdown of standard units of measurement.(S.I)
3. NGO representative selects Add Item.
4. System is updated.
5. Manage Profile page re-renders itself with the updated list of required items displayed at the bottom of the page.

2.1.2 Manage Donation

1. NGO representative selects Manage Donation after logging in.
2. A List of pledged donations is shown, which can be viewed and sorted on the basis of the following parameters :
 - Quantity
 - Category
 - Item Name
 - Location
3. The NGO representative shall choose to do one of the following :
 - The representative chooses to take no action.
 - The representative selects the checkbox corresponding to the set of donations he/she wishes to confirm and select Confirm Collection.
4. The notify use case is triggered.

2.2 Donor

2.2.1 Register

1. A new user opens app to register as donor.
2. User enters details :
 - Name
 - Email ID
 - Mobile Number
 - Address
 - Password (twice, the second time to confirm password)
3. System validates the user input and stores in database.

2.2.2 Make Pledge

1. Donor logs in with personal credentials.
 - Registered Mobile Number/Email ID
 - Password
2. Donor selects Make Pledge.
3. Donor enters donation details :
 - Item Name (mandatory) – Selected from a list of item names entered by NGO representative.
 - Quantity (mandatory)
 - Details– “Details” is a mandatory input for the donor only if the donor selects ‘Other’ as the item name.
 - Category can be selected from a list of categories entered by NGO representative.
4. Donor must choose from either of the following :
 - Use default address (filled during registration)
 - Provide alternative pickup address.
5. System validates the inputs and stores in database.
6. Donor selects I Pledge.

2.2.3 View Pledged Donation

1. Donor logs in with personal credentials.
 - Registered Mobile Number / Email ID
 - Password
2. Donor selects View My Pledge.
3. Donor can see their pledged donation details :
 - Item Name
 - Quantity
 - Category
 - Details (if it exists)
 - Pickup Location
4. Donor shall be able to update donation details in the following way :
 - Donor updates the following fields :
 - Edit quantity.
 - Edit/add details.

- Donor selects Update.
5. Donor shall be able to select Cancel to withdraw donation pledge.

2.3 Collection unit

2.3.1 View Collection Assignment

1. Collection unit gets a notification from the NGO about a collection assignment with the following details :
 - No. of donors
 - Donor name
 - Item to be collected.
 - Quantity of item to be collected.
2. From the notification, the collector is directed to a map.
3. System marks the location of the donors on the Map.
4. Clicking on each marked location, opens up a popup containing the following details :
 - Donor name
 - Donor address
 - Donor contact number

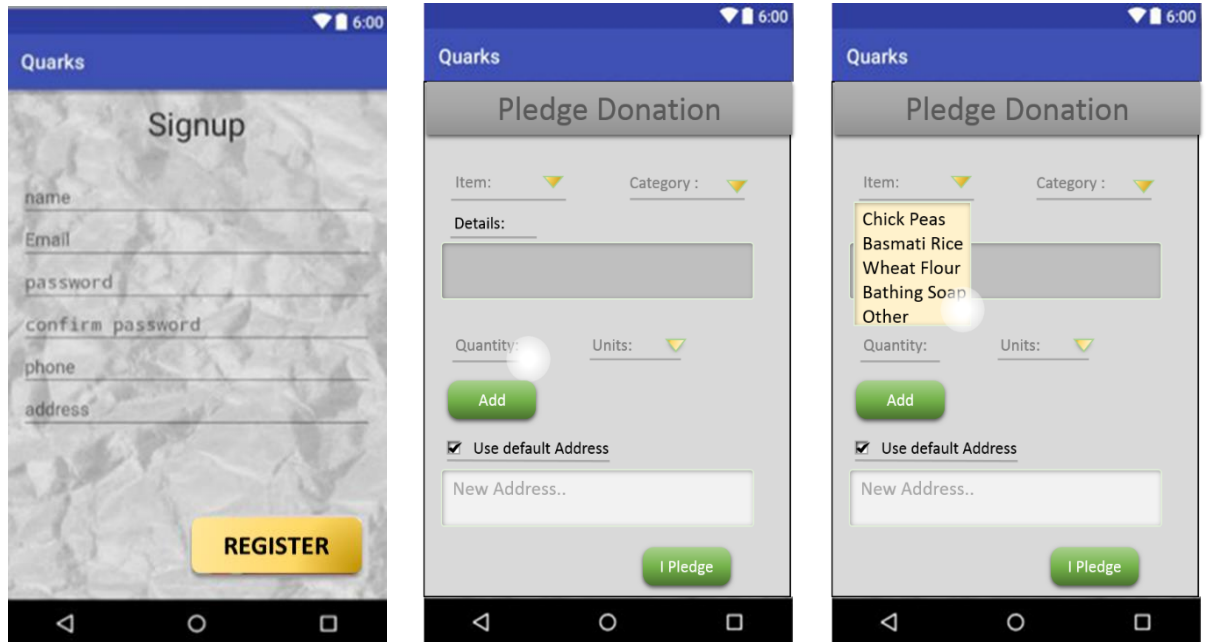
2.3.2 Update Collection

1. After collection from the donor, the collection unit long presses the location pin of the donor on the map.
2. System changes the color of the pin on the map changes from red to green.
3. Green pin on the map indicates successful pickup at that location.
4. System updates the database.

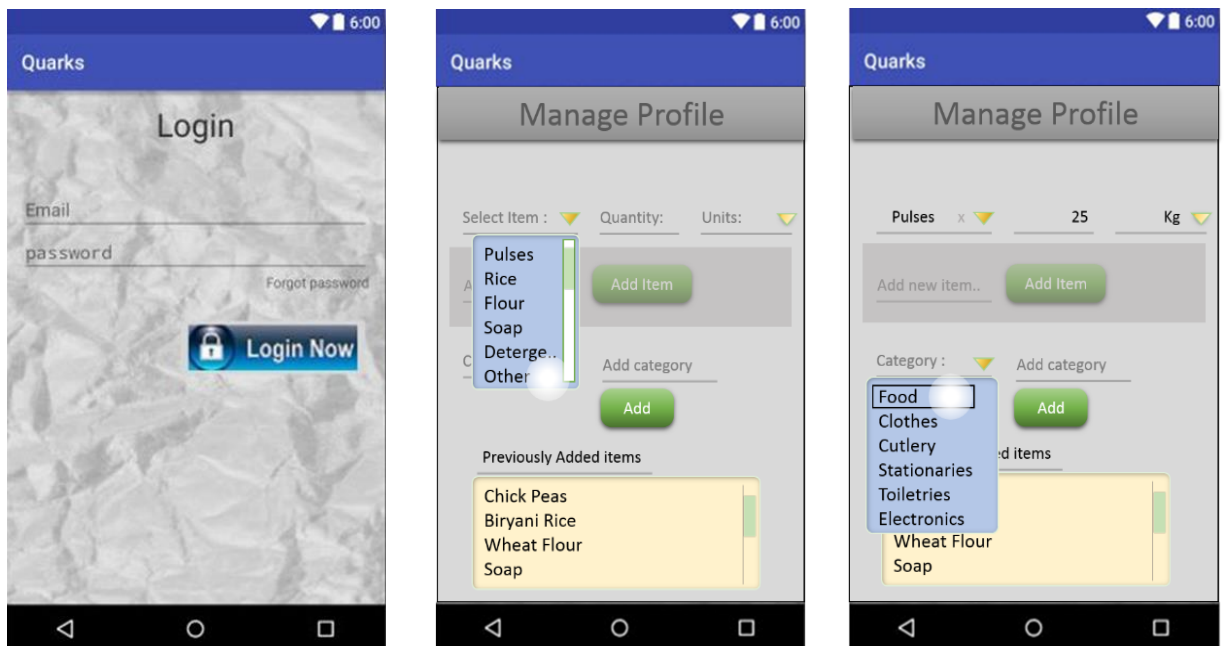
3. *Interface Requirements*

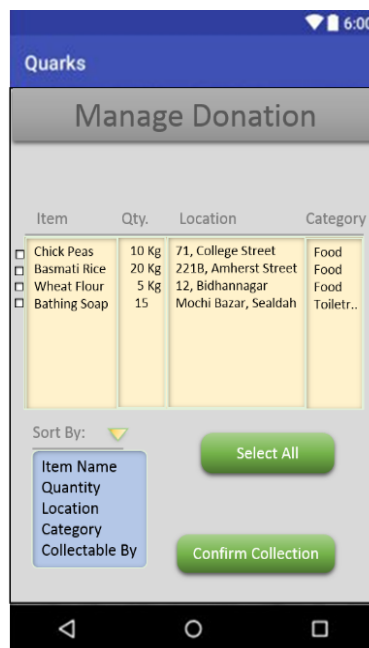
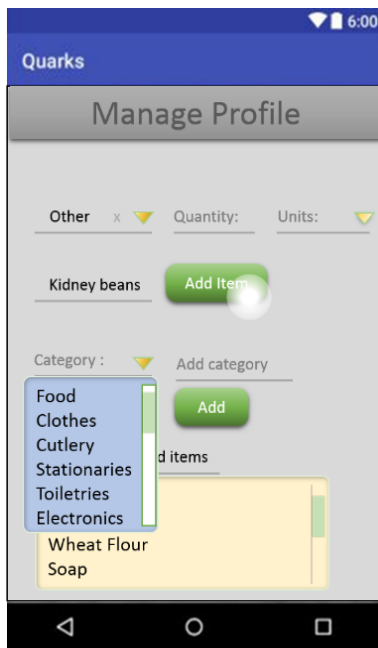
3.1 User Interfaces

Donor UI

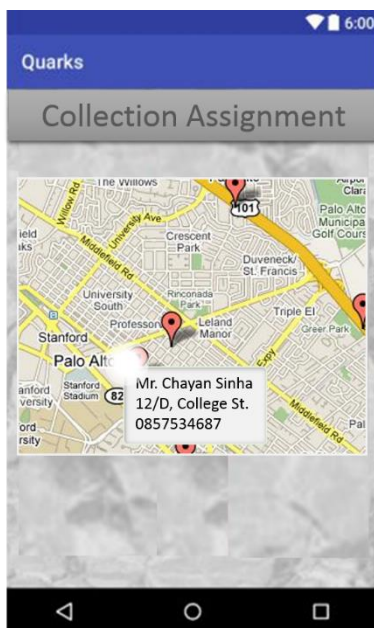


NGO UI





Collection Unit UI



3.2 Hardware Interface

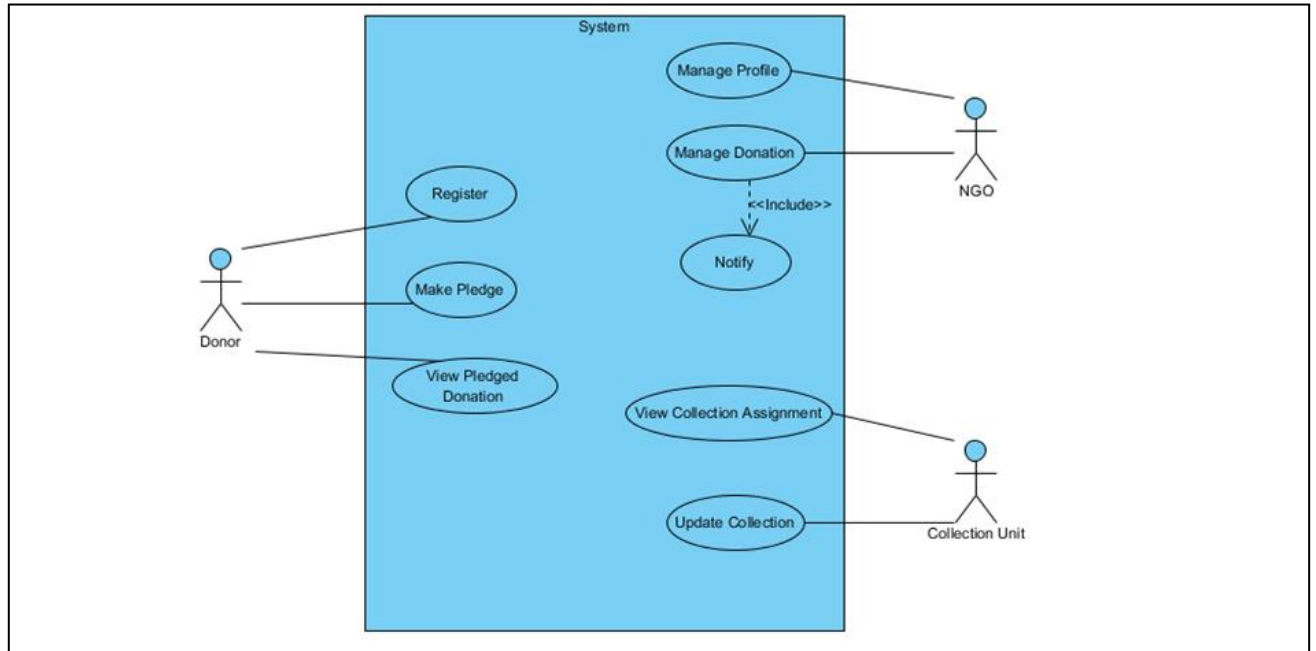
Since the application runs over internet, all the devices that shall be required to connect to the internet will be the hardware interface for the system.

3.3 Software Interface

1. Google Map APIv2 –
 - MapView
 - MapFragment
 - Markers
 - GoogleView

4. Use Case Model

4.1 Use Case Diagram



4.2 Use Case Description

Use Case ID:	1.0.1		
Use Case Name:	Register		
Created By:	Ashish Kumar Sarkar	Last Updated By:	Ashish Kumar Sarkar
Date Created:	17-03-2017	Date Last Updated:	26-03-2017

Actor:	Donor
Description:	The use case is used by donors to Register before pledging any donation.
Preconditions:	<ul style="list-style-type: none"> Donor has a contact number. Donor has an email id. Donor has a smart phone to run the app.
Post conditions:	<ul style="list-style-type: none"> Donor is registered with the system. Donor details are uploaded in the system.
Priority:	<ul style="list-style-type: none"> Donor registration form is created. Form is the first screen to open when user runs the app, alongside with option of signing in.
Frequency of Use:	Only once. The very first time when the user wants to open the app.
Trigger:	Clicking on Sign Up Button.
Flow of Events:	<ol style="list-style-type: none"> Donor enters the name. (Mandatory) System checks the field for a valid entry. Donor enters the Email ID. (Mandatory). System checks for redundancy to validate the Email ID. Donor enters the address. (Mandatory) System checks the field for a valid entry. Donor enters the mobile number. (Mandatory) System verifies the mobile number. Donor enters the password. (Mandatory) System checks for a valid password. Donor re-enters password for confirmation. System matches password and confirmed password for equality. Donor selects Register. System updates the database with new donor details. The registration process is complete.
Alternative Flows:	1.0.AC.1. <ol style="list-style-type: none"> Donor skips any of the entries. System notifies donor of incomplete form. Registration stops.
Exceptions:	-
Includes:	-
Special Requirements:	Access to mobile phones with internet services.
Assumptions:	<ol style="list-style-type: none"> The Donor is able to operate a mobile phone and has internet access. Donors are willing to use the platform.
Notes and Issues:	-

Use Case ID:	1.0.2		
Use Case Name:	Make Pledge		
Created By:	Anudeep Ghosh	Last Updated By:	Bhaskar Tejaswi
Date Created:	17-03-2017	Date Last Updated:	30-03-2017

Actor:	Donor
Description:	When the Donor wishes to donate then he/she enters what they intend to donate and in what quantity.
Preconditions:	Donor is registered.
Postconditions:	Donation pledged in the System.
Priority:	-
Frequency of Use:	Multiple times.
Trigger:	The donor selects Make Pledge.
Flow of Events:	<ol style="list-style-type: none"> System displays the form. Donor selects item name from a dropdown of options. <ul style="list-style-type: none"> The dropdown is populated with item names of the items added by the NGO representative in Manage Profile. Donor enters quantity (Mandatory). System checks whether quantity is empty or not. Donor selects a unit from a dropdown of standard units. Donor needs to check a checkbox whether to use default address for pickup <ol style="list-style-type: none"> If Donor keeps the checkbox unchecked, the donor needs to mandatorily fill address of pickup location in a textbox. If donor checks the option, the System makes the textbox un-editable. Donor must fill in "Details" only if the donor selects "Other" as item name. Donor must select a category from a list of options populated by the NGO representative. The inputs are validated and verified. <ul style="list-style-type: none"> Quantity is a numeric value. Pickup location should not be empty if the corresponding checkbox is left unchecked. Detail is a string and should not be empty if 'Other' is selected as item name. Donor selects "I Pledge". The donation request process is complete.
Alternative Flows:	1.0.AC.1. <ol style="list-style-type: none"> Donor skips anyone of the entries. System notifies donor of incomplete form. Donation pledge stops.
Exceptions:	1.0.EX.1. Donor stops Donation. 1.0.EX.2. Loss of internet connection. 1.0.EX.3. App crashes.
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues	

Use Case ID:	1.0.3		
Use Case Name:	View Pledged Donation		
Created By:	Harshit Kandhway	Last Updated By:	Bhaskar Tejaswi
Date Created:	17-03-2017	Date Last Updated:	29-03-2017

Actor:	Donor
Description:	Donor can view, update or cancel previously Pledged Donation
Pre conditions:	Donor has pledged donation.
Post conditions:	Donor updates donation.
Priority:	-
Frequency of Use:	Multiple times.
Trigger:	The donor selects View Pledged Donation.
Flow of Events:	<ol style="list-style-type: none"> System displays the previously filled donation form with the following details : <ul style="list-style-type: none"> Item Name Quantity with unit Details Category Pickup Location Donor may update quantity. Donor may edit or add "Details". The inputs are validated and verified. <ul style="list-style-type: none"> Quantity is a numeric value. "Details" is a string. The donation is updated in the System.
Alternative Flows:	<p>1.0.AC.1.</p> <ol style="list-style-type: none"> Donor selects Cancel Donation. Donation pledge is withdrawn. <p>1.0.AC.2.</p> <ol style="list-style-type: none"> Donor keeps a mandatory entry blank. System notifies donor of incomplete form.
Exceptions:	<p>1.0.EX.4. Donor stops Donation.</p> <p>1.0.EX.5. Loss of internet connection.</p> <p>1.0.EX.6. App crashes.</p>
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	1.0.4		
Use Case Name:	Manage Profile		
Created By:	Ashish Kumar Sarkar	Last Updated By:	Bhaskar Tejaswi
Date Created:	28-03-2017	Date Last Updated:	29-03-2017

Actor:	NGO
Description:	NGO representatives manage their profile, including the items they need and the minimum quantity before they receive notification.
Preconditions:	NGO has registered with the system.
Postconditions:	<ul style="list-style-type: none"> The NGO's profile is updated. The list of items in Donor UI also changes.
Priority:	
Frequency of Use:	Once a month, at maximum.
Trigger:	Clicking on Manage Profile button.
Flow of Events:	<ol style="list-style-type: none"> NGO representative clicks on "Manage Profile button." NGO representative makes the list of required items, along with the quantity by doing these steps: <ul style="list-style-type: none"> Select an item from the default dropdown menu Enter the lower limit. If an item is absent in the list, the representative shall do the following: <ul style="list-style-type: none"> ➤ Enter the item name in "Add new item" textbox ➤ Select Add Item. Select category from a list of options otherwise, <ul style="list-style-type: none"> ➤ Enter new category name ➤ Select Add ➤ Select the added category. Add item button is clicked. The system is updated. The list of items required is updated at the bottom of the screen.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	The usage of the application is known to the NGO representative.
Assumptions:	-
Notes and Issues:	-

Use Case ID:	1.0.5		
Use Case Name:	Manage Donation		
Created By:	Bhaskar Tejaswi	Last Updated By:	Bhaskar Tejaswi
Date Created:	18-03-2017	Date Last Updated:	29-03-2017

Actor:	NGO
Description:	NGO representative manages the list of donations pledged.
Preconditions:	Donations have been pledged by Donors.
Postconditions:	The Notify functionality may be triggered if donation is confirmed.
Priority:	
Frequency of Use:	Whenever the NGO wants to check the list of donation pledged, at least once a day.
Trigger:	When the "Manage Donation" button is clicked.
Flow of Events:	<ol style="list-style-type: none"> 1. The NGO representative clicks on Manage Donation button. 2. The list of pledged donation is shown, which the representative can sort and view by the following parameters : <ul style="list-style-type: none"> • Quantity • Category • Item Name • Location 3. The representative shall select the donations which the NGO wants to confirm and click on Confirm collection. 4. The Notify use case is then triggered.
Alternative Flows:	1.0.AC.1 <ol style="list-style-type: none"> 1. The NGO Representative may exit the screen without confirming any donation.
Exceptions:	-
Includes:	Notify
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	1.0.6		
Use Case Name:	Notify		
Created By:	Bhaskar Tejaswi	Last Updated By:	Ashish Kumar Sarkar
Date Created:	19-03-2017	Date Last Updated:	27-03-2017

Actor:	System
Description:	System sends notifications to all the actors: <ul style="list-style-type: none"> • NGO • Donor • Collection Unit
Preconditions:	-
Post conditions:	-
Priority:	-
Frequency of Use:	-
Trigger:	-
Flow of Events:	<ol style="list-style-type: none"> 1. System receives alert from NGO that the donations have met the minimum collectable amount. 2. System sends notifications to the Collection Unit.
Alternative Flows:	1.0.AC.1. <ol style="list-style-type: none"> 1. System notifies Donor about the status of Collection.
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	1.0.7		
Use Case Name:	View Collection Assignment		
Created By:	Debanjana Kar	Last Updated By:	Bhaskar Tejaswi
Date Created:	17-03-2017	Date Last Updated:	29-03-2017

Actor:	Collection Unit
Description:	<ol style="list-style-type: none"> 1. Collection Unit receives pickup locations from the system. 2. Collection points have been pin pointed on the map.
Pre conditions:	<ol style="list-style-type: none"> 1. NGO has confirmed collection. 2. Device has internet connection. 3. Collector is logged into the application designed to be used by the receiving (NGO) and collection units.
Post conditions:	<ol style="list-style-type: none"> 1. Collection of the items is completed. 2. Control passes to update pickup
Priority:	<ol style="list-style-type: none"> 1. Location received by the system. 2. A new screen with locations pin pointed on the map is shown.
Frequency of Use:	Every time when notification server notifies a collection.
Trigger:	A collection request is confirmed by the NGO.
Flow of Events:	<ol style="list-style-type: none"> 1. Donor location is retrieved from system database. 2. Retrieved information is used to pin point location on map. 3. On clicking each point, a pop up comes with the following : <ol style="list-style-type: none"> 3.1 Donor details such as : <ul style="list-style-type: none"> • Donor's name • Donor's full address • Donor's contact no 4. Collection unit uses the locations from the map to determine his/her route himself/herself.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	Access to mobile phones with internet services.
Assumptions:	-
Notes and Issues:	-

Use Case ID:	1.0.8		
Use Case Name:	Update Collection		
Created By:	Pooja Ganguly	Last Updated By:	Bhaskar Tejaswi
Date Created:	17-03-2017	Date Last Updated:	29-03-2017

Actor:	Collection Unit
Description:	Collection Unit collects items from the Donor's address and confirms pickup.
Pre conditions:	NGO has received item from Donor.
Post conditions:	Collection of the items is completed. System is updated.
Priority:	-
Frequency of Use:	Every time a collection is successful.
Trigger:	Long press on the donor's location pin on the map.
Flow of Events:	<ol style="list-style-type: none"> 1. Collection unit long presses the donor's location pin on the map. 2. System changes the pin's color from red to green. 3. A green location pin indicates successful pickup from the donor. 4. The System is updated.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	Access to mobile phones with internet services.
Assumptions:	-
Notes and Issues:	-

5. Glossary

Term	Meaning
C	
Collection:	Gathering of donated items from the pickup locations (specified by the donors) by the collection unit.
Collection unit	The team of people appointed by the NGO for collecting items from the donor/s.
Category	Types of items that can be donated by the donor (Example: Food, Clothes etc.). This is set by the NGO.
D	
Default address	The address given by a donor at the time of registration with the system.
Details	Any additional information that the donor wants to give about any product. This is a mandatory input for the donor when he/she chooses "Other" as item name.
Donor	Any individual who wishes to contribute to the NGO through our system by giving items like food, clothes.
Donation	An act of voluntary contribution of items (food, clothes etc.) from a donor to an NGO.
I	
Item	Donatable material required by an NGO and is characterized by its name, its category and the quantity in which it is required.
M	
Make pledge	A donor pledges a donation by providing donation related information such as item name, quantity, detail(optional), alternative pickup location(optional).
Manage profile	NGO representative manages own profiles by specifying items it needs and setting a minimum limit before it receives notifications.
Manage donation	NGO representative manages the list of pledged donations and marks those which are ready for collection.
Minimum limit	A threshold set by the NGO representative such that when the net donation corresponding to a given item is met, the NGO is notified about it.
N	
NGO	A charitable organization working for the betterment of the needy.
Notifications	App notifications will be served to several actors under some conditions : <ol style="list-style-type: none"> 1. System notifies NGO about when the minimum limit is met. 2. System notifies donor receives notification about the status of donation.

	3. System notifies collection unit about a collection assignment.
Notify	Sends notifications to collection unit, NGO, donors.
P	
Pickup Location	Collection unit collects donated items from the donor from this location. It can be same as default address or the Donor can provide an alternative address as well.
R	
Register	Donors must register with the system before pledging any donation.
S	
Standard Unit	Standard units of measurement (Kg. for weight, meter for length, liter for volume etc.)
System	Application working along with server and database.
U	
Update Collection	Collection Unit collects items from the pickup location and confirms pickup.
V	
View Pledged Donation	Donors can update, cancel, view previously pledged donations.
View Collection Assignment	System shows the collection unit, various pickup locations. For each pickup location, System shows donor details (donor name, donor contact number and donor address).