

# PROJECT Design Documentation

*The following template provides the headings for your Design Documentation. As you edit each section make sure you remove these commentary 'blockquotes'; the lines that start with a > character and appear in the generated PDF in italics but do so only **after** all team members agree that the requirements for that section and current Sprint have been met. **Do not** delete future Sprint expectations.*

## Team Information

- Team name: Albatross
- Team members
  - Joseph Pilon
  - Matthew Peck
  - Andy Lin
  - Naif Alanazi

## Executive Summary

This project is considered to be a website that allows users to sign in and donate needs. It allows for a manager to sign in as well in order to update the cupboard of needs that the customers will be able to see.

### Purpose

To create a Web-Based Ufund system, where users are able to select from a Cupboard of "Needs" to provide to a Specific Charity. Users are able to add/remove "Needs" from their unique Funding Basket, and choose to checkout their basket, locking in their "Purchase".

### Glossary and Acronyms

**[Sprint 2 & 4]** *Provide a table of terms and acronyms.*

Term	Definition
SPA	Single Page

## Requirements

This section describes the features of the application.

*In this section you do not need to be exhaustive and list every story. Focus on top-level features from the Vision document and maybe Epics and critical Stories.*

### Definition of MVP

Charity donation website, where users are able to login and view their unique Funding Basket and the currently needed "Needs" from the Cupboard. Users are able to checkout the Needs in their basket and thus removes those Needs from the Cupboard.

MVP Features

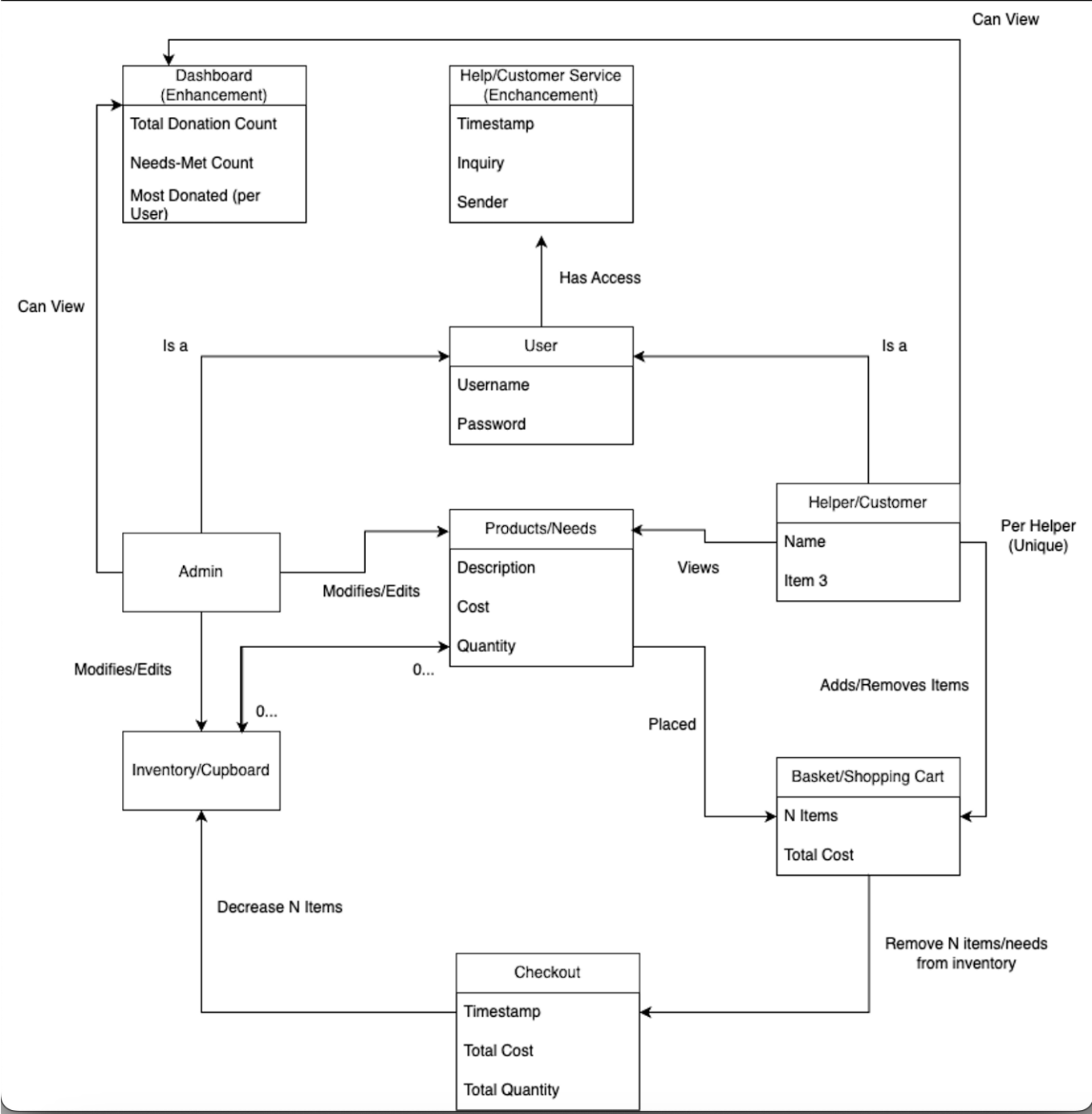
**[Sprint 4]** Provide a list of top-level Epics and/or Stories of the MVP.

Enhancements

**[Sprint 4]** Describe what enhancements you have implemented for the project.

Application Domain

This section describes the application domain.



There are 2 types of Users: Admin and Helper.

Both types of users are able to view Needs and the "Dashboard", while the Admin is able to edit/modify the Needs in the Inventory/Cupboard.

Both types of users has access to the Help Service.

Each helper has a Funding Basket, where they can Add/Remove Needs (from the Cupboard). From the Funding Basket, a Helper can "Checkout", which empties the Funding Basket and decreases the quantity of those needs in the Cupboard.

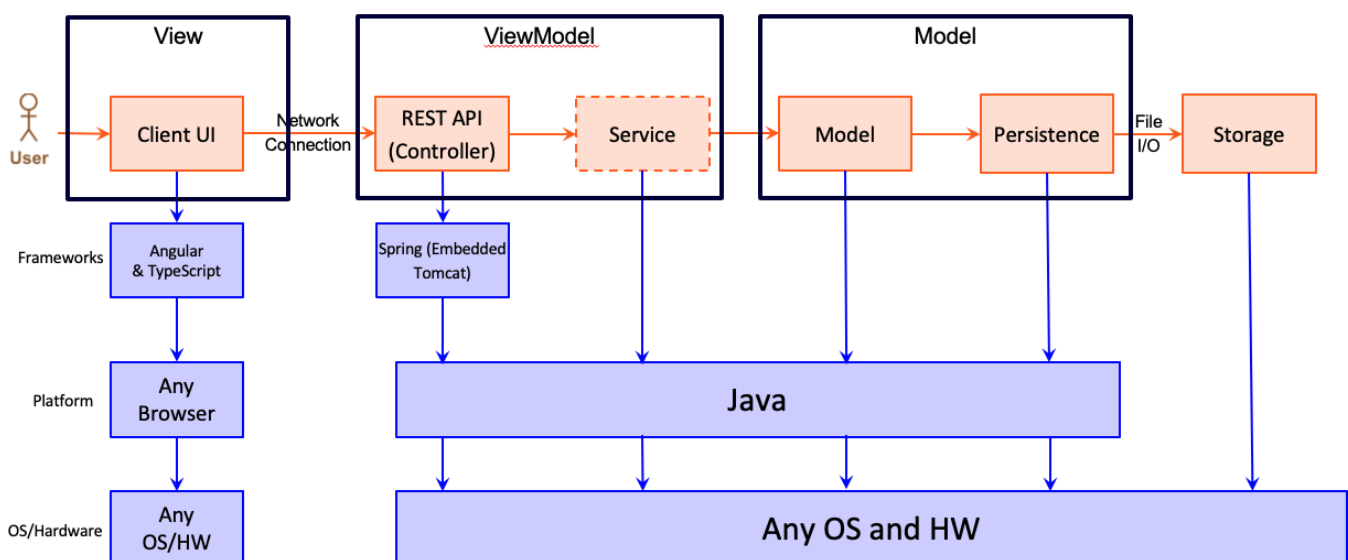
## Architecture and Design

This section describes the application architecture.

### Summary

The following Tiers/Layers model shows a high-level view of the webapp's architecture. **NOTE:** detailed diagrams are required in later sections of this document.

**[Sprint 1]** (Augment this diagram with your **own** rendition and representations of sample system classes, placing them into the appropriate M/V/VM (orange rectangle) tier section. Focus on what is currently required to support **Sprint 1 - Demo requirements**. Make sure to describe your design choices in the corresponding **Tier Section** and also in the **OO Design Principles** section below.)



The web application, is built using the Model–View–ViewModel (MVVM) architecture pattern.

The Model stores the application data objects including any functionality to provide persistence.

The View is the client-side SPA built with Angular utilizing HTML, CSS and TypeScript. The ViewModel provides RESTful APIs to the client (View) as well as any logic required to manipulate the data objects from the Model.

Both the ViewModel and Model are built using Java and Spring Framework. Details of the components within these tiers are supplied below.

### Overview of User Interface

This section describes the web interface flow; this is how the user views and interacts with the web application.

*Provide a summary of the application's user interface. Describe, from the user's perspective, the flow of the pages in the web application.*

## View Tier

**[Sprint 4]** *Provide a summary of the View Tier UI of your architecture. Describe the types of components in the tier and describe their responsibilities. This should be a narrative description, i.e. it has a flow or "story line" that the reader can follow.*

**[Sprint 4]** *You must provide at least **2 sequence diagrams** as is relevant to a particular aspects of the design that you are describing. (**For example**, in a shopping experience application you might create a sequence diagram of a customer searching for an item and adding to their cart.) As these can span multiple tiers, be sure to include an relevant HTTP requests from the client-side to the server-side to help illustrate the end-to-end flow.*

**[Sprint 4]** *To adequately show your system, you will need to present the **class diagrams** where relevant in your design. Some additional tips:*

- *Class diagrams only apply to the **ViewModel** and **Model** Tier*
- *A single class diagram of the entire system will not be effective. You may start with one, but will be need to break it down into smaller sections to account for requirements of each of the Tier static models below.*
- *Correct labeling of relationships with proper notation for the relationship type, multiplicities, and navigation information will be important.*
- *Include other details such as attributes and method signatures that you think are needed to support the level of detail in your discussion.*

## ViewModel Tier

Need.java is used to keep the attributes of the needs that will be shown in the cupboard.

CupboardController.java is used to read in the commands and calls the commands to make adjustments to the cupboard or specific instructions from the user.

CupboardDAO.java defines different functions that the cupboard is able to use and perform while manipulating different needs.

CupboardFileDAO.java is used to define each of the functions that cupboardDAO uses and actually writes the functions actions that they will be performing.

**[Sprint 4]** *Provide a summary of this tier of your architecture. This section will follow the same instructions that are given for the View Tier above.*

*At appropriate places as part of this narrative provide **one** or more updated and **properly labeled** static models (UML class diagrams) with some details such as critical attributes and methods.*

 Replace with your ViewModel Tier class diagram 1, etc.

## Model Tier

Need.java is used to keep the attributes of the needs that will be shown in the cupboard.

CupboardController.java is used to read in the commands and calls the commands to make adjustments to the cupboard or specific instructions from the user.

CupboardDAO.java defines different functions that the cupboard is able to use and perform while manipulating different needs.

CupboardFileDAO.java is used to define each of the functions that cupboardDAO uses and actually writes the functions actions that they will be performing.

**[Sprint 2, 3 & 4]** Provide a summary of this tier of your architecture. This section will follow the same instructions that are given for the View Tier above.

At appropriate places as part of this narrative provide **one** or more updated and **properly labeled** static models (UML class diagrams) with some details such as critical attributes and methods.

 Replace with your Model Tier class diagram 1, etc.

## OO Design Principles

While getting started with this project and during the first sprint, we need to make sure that we are focusing on the idea of single responsibility in the hopes that it will disperse the 'weight' of the functionality across multiple classes and functions.

**[Sprint 2, 3 & 4]** Will eventually address upto **4 key OO Principles** in your final design. Follow guidance in augmenting those completed in previous Sprints as indicated to you by instructor. Be sure to include any diagrams (or clearly refer to ones elsewhere in your Tier sections above) to support your claims.

**[Sprint 3 & 4]** OO Design Principles should span across **all tiers**.

## Static Code Analysis/Future Design Improvements

**[Sprint 4]** With the results from the Static Code Analysis exercise, **Identify 3-4** areas within your code that have been flagged by the Static Code Analysis Tool (SonarQube) and provide your analysis and recommendations.

Include any relevant screenshot(s) with each area.

**[Sprint 4]** Discuss **future** refactoring and other design improvements your team would explore if the team had additional time.

## Testing

*This section will provide information about the testing performed and the results of the testing.*

### Acceptance Testing

**[Sprint 2 & 4]** Report on the number of user stories that have passed all their acceptance criteria tests, the number that have some acceptance criteria tests failing, and the number of user stories that have not had any testing yet. Highlight the issues found during acceptance testing and if there are any concerns.

### Unit Testing and Code Coverage

**[Sprint 4]** Discuss your unit testing strategy. Report on the code coverage achieved from unit testing of the code base. Discuss the team's coverage targets, why you selected those values, and how well your code coverage met your targets.

**[Sprint 2 & 4]** Include images of your code coverage report. If there are any anomalies, discuss those.

### Ongoing Rationale

**[Sprint 1, 2, 3 & 4]** Throughout the project, provide a time stamp (yyyy/mm/dd): **Sprint # and description** of any **mayor** team decisions or design milestones/changes and corresponding justification.