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**Course:** BSc Technology

Management

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# Foodie Shelter

IEEE Website Requirements Specification Document

**David Fraine** 

## **Declaration Cover Sheet for Project Submission**

**SECTION 1** Student to complete

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#### **SECTION 2 Confirmation of Authorship**

The acceptance of your work is subject to your signature on the following declaration:

I confirm that I have read the College statement on plagiarism (summarised overleaf and printed in full in the Student Handbook) and that the work I have submitted for assessment is entirely my own work.

Signature: David Fraine Date: 10/05/2018

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Paraphrasing refers to taking the ideas, words or work of another, putting it into your own words and crediting the source. This is acceptable academic practice provided you ensure that credit is given to the author. Plagiarism refers to copying the ideas and work of another and misrepresenting it as your own. This is completely unacceptable and is prohibited in all academic institutions. It is a serious offence and may result in a fail grade and/or disciplinary action. All sources that you use in your writing must be acknowledged and included in the reference or bibliography section. If a particular piece of writing proves difficult to paraphrase, or you want to include it in its original form, it must be enclosed in quotation marks

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When referring to the work of another author within the text of your project you must give the author's surname and the date the work was published. Full details for each source must then be given in the bibliography at the end of the project

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- expelling a student from college,
- prohibiting a student from sitting any examination or assessment.,
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- the requirement that a student to attend additional or other lectures or courses or undertake additional academic work.

## **Table of Contents**

1.	Exec	ecutive Summary	6
2.	Req	quirements Elicitation & Analysis Planning	6
2	2.1	Introduction	6
2	2.2	Business Need	7
2	2.3	Business Case	8
2	2.4	Stakeholder List	8
2	2.5	Importance/Influence Matrix	9
2	2.6	RACI Matrix	9
2	2.7	Requirements Elicitation Techniques	10
	2.7.	.1 Brainstorming	10
	2.7.2	.2 Surveys	11
	2.7.3	.3 Interview	12
	2.7.	.4 Prototyping	13
	2.7.	.5 Requirements Workshop	13
	2.7.0	.6 Interface Analysis Design	14
3.	Req	quirements Elicitation & Analysis Results	15
3	3.1	Survey	15
3	3.2	Brainstorm	22
3	3.3	Interview	25
3	3.4	Prototyping	27
3	3.5	Requirements Workshop	30
3	3.6	Interface Design & Analysis	31
4.	IEEE	E Website Requirements Specification	32
۷	1.1	Introduction	32
	4.1.	.1 Purpose	32
	4.1.2	.2 Scope	32
4	1.2	Functional Requirements	33
	4.2.	.1 Functional Requirement 1	33
	4.2.2	.2 Functional Requirement 2	33
	4.2.3	.3 Functional Requirement 3	33
	4.2.	.4 Functional Requirement 4	34
	4.2.	.5 Functional Requirement 5	34
	4.2.0	.6 Functional Requirement 6	34

	4.2.	7	Functional Requirement 7	35
	4.2.8	8	Functional Requirement 8	35
	4.2.9	9	Functional Requirement 9	35
	4.2.	10	Functional Requirement 10	36
	4.2.	11	Functional Requirement 11	36
	4.2.	12	Functional Requirement 12	36
	4.2.	13	Functional Requirement 13	36
	4.2.	14	Functional Requirement 14	37
	4.2.	15	Functional Requirement 15	37
	4.2.	16	Functional Requirement 16	37
	4.2.	17	Functional Requirement 17	38
	4.3	Non	Functional Requirements	38
	4.3.	1	Security Requirements	38
	4.3.2	2	Reliability Requirements	38
	4.3.3	3	Availability Requirements	38
	4.3.4	4	Performance Requirements	38
	4.3.	5	Maintainability Requirement	38
	4.3.0	6	Extendibility Requirement	38
De	velope	ed We	ebsite	39
5.	Bibli	iogra	phy	39
6.	Арр	endix	<	40
	6.1	Proj	ect Proposal	40
	6.1.	1	Project Objectives	40
	6.1.	2	Background	41
	6.1.3	3	Technical Approach	41
	6.1.4	4	Special Resources Required	42
	6.1.	5	Project Plan	43
	6.1.0	6	Research	43
	6.1.	7	Evaluation	44
7.	Mor	nthly	Journals	44
	7.1	Sept	tember	44
	7.2	Octo	ober	45
	7.3	Nov	ember	46
	7.4	Dec	ember	47

7.5	January	48
7.6	February	49
7.7	March	50

### 1. Executive Summary

The idea or concept behind this project and topic was chosen based on previous experience with working in the food and beverage industry. I was able to see first-hand the amount of food wastage on a daily basis. I decided to research further into the issue at hand and develop my project around coming up with a solution.

A variety of elicitation techniques were used to assist in the creating and making of this project. These techniques from the Business Analysis Body of Knowledge (BABOK) consisted of Surveys, Brainstorming, Interviews and the creation of a prototype. A number of stakeholders were analysed and prioritised at the start of the project. This was based on how influential and important they were to the project. Once I was able to identify the key stakeholders, the requirements eliciting was put into effect and requirements were gathered. A detailed IEEE requirements specification document was created based around the results and requirements gathered from the stakeholders. This IEEE requirements document will be the foundation of the development of the Food Application.

## 2. Requirements Elicitation & Analysis Planning

#### 2.1 Introduction

When gathering the requirements for the project I first had to sit down and decide on what elicitation techniques I was going to use and what techniques would most suit my project. The requirements that will be gathered will go towards the development of my project. My project is to create a website/app called Foodie Shelter whereby shops and restaurants sign up to have excess food that they have ordered in or food that will go to waste such as breads, pastries, food from the deli and various other foods that will potentially be thrown out to be collected from their store by this service and then delivered to chosen homeless shelters or charities to reduce waste food in Ireland while helping homeless shelters and charities also. The service is that shops and restaurants can upload the food that they consider good food that won't be sold by the end of the day to the website and homeless shelters and charities that are also signed up can view this food through the uploaded pictures and place an order

on it, giving the shop a notification telling them a certain shelter is interested in the food that they have. A delivery van/driver will also get a notification through the website telling them that food needs to be collected and delivered at a certain time to a certain place.

When I first thought of the idea to create this website/app for homeless shelters and shops to link up, I knew there would be various obstacles and road blocks that I would have to face throughout such as what types of food would be eligible to send from shops to homeless shelters or charities. These issues would be addressed and faced throughout the project by researching and involving relevant stakeholders. Numerous surveys will be distributed to the various stakeholders that will be involved to gather some basic information for the interface design of my project and for other information that I will find useful. Interviews is another technique I will use to get a more in depth analysis or to identify or find high priority of requirements and what is required of me to complete this project in the best way possible. Using these techniques will allow me to get a feel of what the stakeholder or customer wants. A management technique or approach called MoSCoW will be used to prioritise requirements and will be ranked in order of must haves, should haves, won't haves and should haves. By the end of this I will hope to have a set of functional and non-functional requirements.

#### 2.2 Business Need

A lot of food in Ireland and across the world are being thrown out, when in fact there is nothing wrong with the food at all. For example, shops such as Spar may order in a certain amount of hot chicken for a deli, but might only sell half of what they ordered in. At the end of the day or when they are closing the deli these items that weren't sold will potentially be thrown out, while places such as homeless shelters and other charities would benefit greatly from this food. This is the same as breads and pastries in shops that are ordered in and just thrown out at the end of the day when they shouldn't be. I see a need or a niche to develop a website to reduce the wastage of good food in shops and the food and beverage industry to help homeless shelters and/or charities as a result and to essentially make this website the middle man between shops/restaurants and homeless shelters.

To understand the business need in more detail, a substantial amount of research will need to be conducted in order for me to satisfy the needs of the stakeholders that will be involved. Various requirements elicitation techniques will be used to help gather requirements that stakeholders would want my app to do and what functions should be required.

#### 2.3 Business Case

I will be developing my business case and business need around an agile approach which will consist of various scrum meetings with my supervisor and certain stakeholders like the homeless shelters and quite possibly the Food Safety Authority for certain rules and regulations around food. This is to ensure constant feedback and reviews of the pending project.

Shops will be given certain collection times depending on what time their deli closes at and what type of food will be collected and delivered to the various shelters and charities. Certain foods will need to be transported via a delivery service with refrigeration or food heaters to ensure the food is to remain fresh and edible. The homeless shelters will then be able to access the shops information through the app in terms of what foods they have, the volume of food they have, what location they are in and when the food can be delivered. They can then put an interest on this food from the shop and the shop will then be notified.

The implementation of this app will hopefully attract more and more and shops to join and will hopefully increase the awareness of food wastage around the country. There are unfortunately a series of risks involved in this project, seeing as this project revolves around the topic of food, there are a number of rules and regulations that are in place by law that I must adhere to.

#### 2.4 Stakeholder List

Below are a number of stakeholders that will be involved in the ongoing process of this project. These stakeholders will be involved in the gathering and eliciting of requirements.

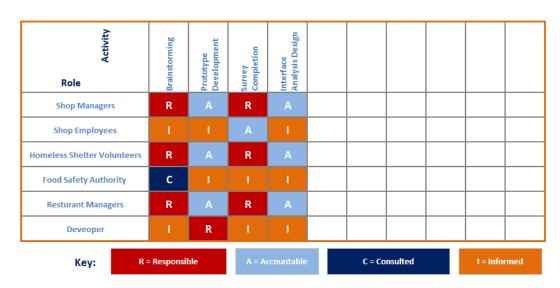
- Managers/Owners of shops
- Managers/Owners of restaurants
- Volunteers at Homeless Shelters
- Third Party Delivery service
- Food Safety Authority
- Developer
- The Public

## 2.5 Importance/Influence Matrix

High		Managers of Shops
Food Safety Authority		
Delivery Service		
Hotels	Staff Volunteers	
Public		
Low	Influence	

The Importance/Influence matrix is a method or technique used to prioritise or identify the highly influential stakeholders. The stakeholders in the top right box or quadrant are the highly influential stakeholders. These stakeholders are the managers and owners of the shops that will be contacted throughout the project. The stakeholders in the top left quadrant are important but will not contribute to the overall design or functionality of the application. Stakeholders such as the public are of little or no influence but hopefully as the project develops these low influential stakeholders could become important.

### 2.6 RACI Matrix



Above is a simple RACI Matrix that shows some of the tasks that needs to be completed throughout the project. It shows who is Responsible, Accountable, Consulted with and Informed.

#### **Key responsibility roles:**

<u>Responsible</u>: The stakeholders who do the work to achieve the task. There is at least one role with a participation type of responsible, however, others can be delegated to help in the work that is required.

<u>Accountable:</u> This person is answerable for the correct completion of this task. This person also delegates the work to those who will be responsible. In other words, an accountable must sign off (approve) on work that responsible provides. There must only be only one person accountable for each task or deliverable.

<u>Consulted:</u> These are the people whose opinions are looked for, usually subject matter experts and where there is two-way communication.

<u>Informed:</u> These are the people who are kept in the loop or up to date on whatever progress is being made, often only involves one-way communication.

## 2.7 Requirements Elicitation Techniques

#### 2.7.1 Brainstorming

#### **Brief Overview:**

A brainstorm is a type of meeting used to generate ideas. The main overview for the brainstorming session is to sit with a number of stakeholders to gather some ideas and some requirements from homeless shelters, restaurant managers and shop owners/supervisors. This will benefit the project on a greater scale as the different types of stakeholders are getting involved.

#### **Objectives of the Brainstorm:**

When the brainstorming sessions takes place, there will be the objective to gather a few requirements and ideas to see if it could incorporate into the project. The overall idea and objective will be explained and other views and ideas will be included and accepted. Everything that will be said will be taken on board and will be evaluated and documented.

#### 2.7.2 Surveys

#### **Brief Overview:**

Another technique that will be used will be to design two surveys to gather more requirements from a broader audience. The aim is get as many responses from as many relevant stakeholders on these surveys for the project. Two surveys have been conducted for the two different stakeholders involved. The distribution of these surveys will be sent via email.

#### Objectives of the survey:

The idea or objective behind these surveys are to reach a broader audience and to identify as much information and requirements as possible from the relevant stakeholders. It will be used to get a feel for some of the more popular features that may be added into the app and other relevant information such as preferred collection/delivery times.

### **Contributors of the survey:**

- 1. Volunteers at Homeless Shelters
- 2. Staff/Employees of Shops
- 3. Owners/Managers of Shops
- 4. Owners/Managers of Restaurants/Hotels

Survey 1: <a href="https://docs.google.com/forms/d/1p2-gkadY1XLXbVkdY\_ZjYG\_L\_zsb0WihmwOi5YAizno/edit">https://docs.google.com/forms/d/1p2-gkadY1XLXbVkdY\_ZjYG\_L\_zsb0WihmwOi5YAizno/edit</a>

Survey 2: <a href="https://docs.google.com/forms/d/1CYmX1jDRqnn5qmS3--TmPFSsrSijNfks3kaq1\_PgYr8/edit">https://docs.google.com/forms/d/1CYmX1jDRqnn5qmS3--TmPFSsrSijNfks3kaq1\_PgYr8/edit</a>

#### **Sample Survey Questions:**

1. How often would you have to throw food away?

Once a week 2-3 days a week Daily

2. On a scale of 1 to 5 (1 being the lowest) how likely would you be to donate food to homeless shelters?

1 2 3 4 5

These survey questions were to get a broad notion of some of the concepts that are behind the idea of this project. It will be used as a guide throughout the project.

#### 2.7.3 Interview

#### **Brief Overview:**

An interview is a group of individuals that meet face to face, particularly for discussion. The plan for conducting two interviews with stakeholders is to gather a more in depth analysis for requirements and to get their opinion on the overall idea and to see what they would like to feature on the app and what they would utilise the most. The interviews will be unstructured even though there will be a set of questions made out beforehand meaning that questions may vary based on the interviewees responses. The MoSCoW approach will be used in order to prioritise requirements into categories that are either in scope or out of scope.

#### **Objectives of the Interview:**

The objective of the interview is to meet with various stakeholders face to face and to gather important information. The preferable outcome of this interview is to identify any issues or certain aspects of this app that should be made aware and to see if there are any current issues that can be solved through this app. The answers from the participants being interviewed will be recorded and documented. As there will be two interviews conducted, there will be two different sets of interview questions.

#### Participants being interviewed:

- 1. Owner and Manager of Spar Carpenterstown
- 2. Two senior volunteers at Cross Care Homeless Shelter

#### **Interview Questions 1: Shop Owner**

- 1. How often would your store throw away food? And what would the volume of food be?
- 2. Would you be interested in tracking this food wastage in your store? How would you feel the best way to track food would be?
- 3. What features would you particularly use or feel would be beneficial most on this application?
- 4. For your store, what kind of information would you want shared on this app?
- 5. What do you feel could be incorporated to attract more stores onto this application?
- 6. Would you be interested in getting in partnership with chosen charities and Homeless Shelters?

#### Interview Questions 2: Homeless Shelter Volunteer

- 1. How often would food be delivered to this homeless shelter? Where is the main source of food coming from?
- 2. What changes (if any) would you make to the delivery of food to your shelter?
- 3. Would your shelter be willing to get involved in this project?
- 4. What information would you feel is best to display for homeless shelters on this app?
- 5. Are there any difficulties with regards to the actual food in your shelter? What would the volume of food be that is being delivered?

#### 2.7.4 Prototyping

#### **Brief Overview:**

Based off of the results from the brainstorming sessions, surveys and interviews a prototype will be developed as a mock-up of the real thing. It will be a visual representation of this food application. My analysis on what I believe are the stakeholders needs will be represented in this prototype.

#### Objectives of the prototype:

The objectives of this prototype will be to limit any misunderstanding or any mistakes that may arise between the developer and the stakeholders. It is to act as a visual representation of what the app will look like and any recommendations or any additional functions or features can be added into the second prototype version that will be developed that will be close enough to the real thing with any additional features that need to be added in. The objective is then to have this prototype made for the workshop that will be held.

#### 2.7.5 Requirements Workshop

#### **Brief Overview:**

Key stakeholders will be identified prior to this workshop. This requirements workshop has been set to gather key stakeholders together to discuss further what the website or final product will look like and the layout/design. The workshop will be

held in a neutral venue. It is an important step in gathering final requirements and to further clarify any misunderstandings. A prototype will be presented to the stakeholders at this workshop to give them a visual representation.

#### **Objectives of the Requirements Workshop:**

The key objectives of this workshop will be to summarise and define final deliverables and features. Also to gather what type of layout and design the stakeholders involved want or desire. The first prototype will be discussed using MoSCoW to determine what are essentials for the website and what are the nice to haves. This will then narrow certain features down. All participants involved in the workshop will be allowed to voice their opinion or views at any time.

#### 2.7.6 Interface Analysis Design

#### **Brief Overview:**

Requirements for the interface analysis design are mainly focused on describing the inputs to and outputs from that interface, any validation guidelines that manage those inputs and outputs, and events that might trigger interactions. This interface design will be completed after the prototype and workshop are completed. There may be a great number of different interaction types, each of which needs to be specified and clarified. A Use Case diagram will be developed for stakeholders to have specific access to the website. Shelters will only have access to their side of the website and shops will also only have access to their part. The public will also fit in to this analysis as well. The delivery van or person behind the deliveries will also have particular access as to where to collect from and where to deliver to.

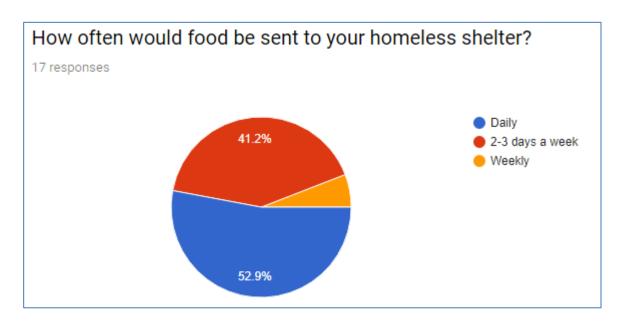
### **Objectives of the Interface Design:**

The objective is to do a detailed analysis of the interface which will include the exchange frequency, the exchange process between two entities, and even the name of the interface. By conducting this interface analysis design early on with a UML case diagram, it will give a detailed means of assigning requirements and will also show limitations to the final solution.

## 3. Requirements Elicitation & Analysis Results

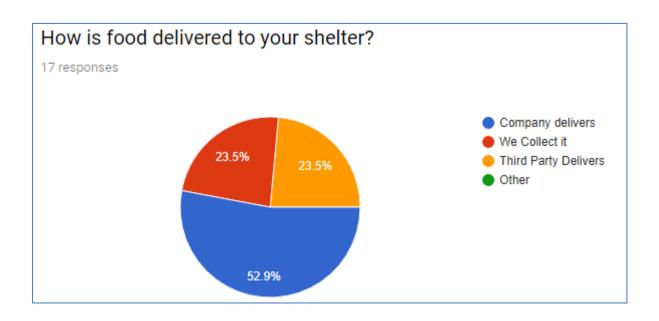
## 3.1 Survey

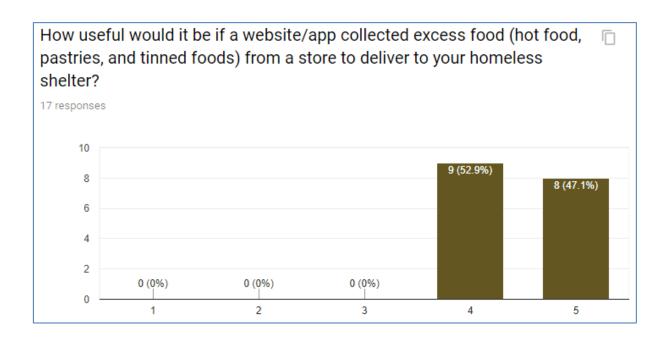
## Survey 1 Results - Homeless Shelters:

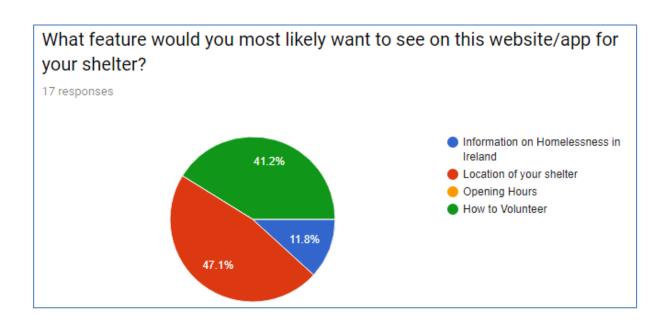












#### **Survey 1 Conclusion:**

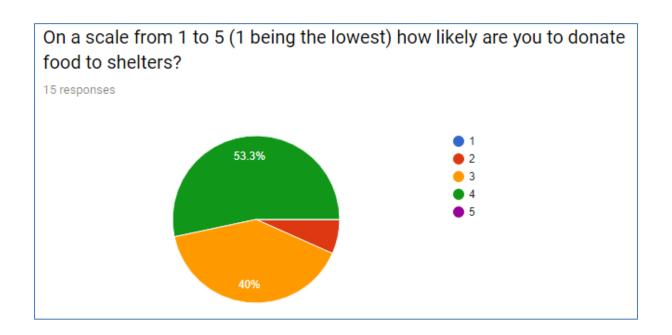
The stakeholders that were involved in completing this survey i.e. the Homeless Shelters varied from all over Dublin City, which meant that a wide variety of insights were gathered. The different results that showed from the individual shelters were of great benefit which was the desired objective. Out of the responses the majority of shelters (52%) had food delivered on a daily basis, this shows that any shop or restaurant signed up can have food ready at their ease and won't necessarily have to be tied to any particular day because 52% of the shelters accept food every day. The time of delivery that shelters receive food is also important so that the organisation donating the food can be matched to when they usually dispose of food.

From the results the majority of the shelters across Dublin City have their food delivered by a company. This indicates that a mode of transport is vital for Foodie Shelter to organise. These survey results gave a great insight into how Foodie Shelter can operate and what needs to be implanted. The results from survey 1 will be closely compared to the results of survey 2 so that the operation can run smoothly.

## Survey results 2 - Shops:

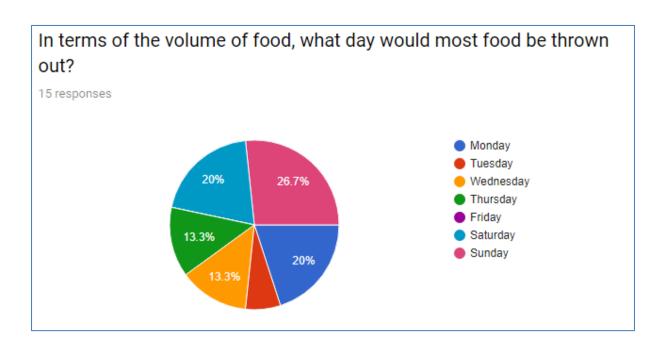


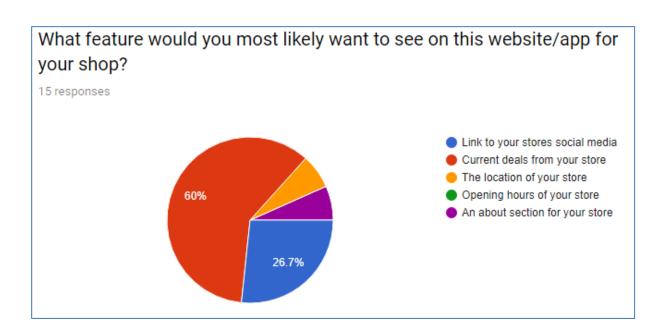


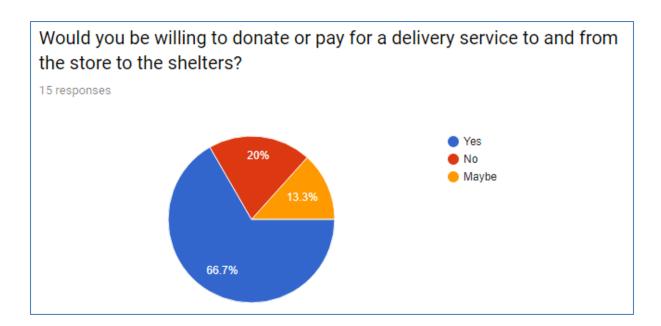












#### **Survey 2 Conclusion:**

The results from survey two that were sent out to a variety of mainly shops and supermarkets were fairly widespread as expected. It gave another good insight into an important stakeholder and how they viewed the service. The time at which these organisations throw away their good food is important to see if there is a match or similarity between the times at which shelters receive food. The majority of shops and supermarkets (66.7%) throw away food everyday which is important information, because the shelters receive and accept food everyday also which is a perfect match. Seeing as most shelters seem to have their food delivered, it is also important to know that 66.7% of shops said yes to paying for a delivery service. A

wide range of results were identified in the most preferred features to include in the website with 'current deals from their store' being the majority vote with 60%.

Both surveys conducted by stakeholders proved very beneficial towards this project as it gave a great insight in to how this service can run by matching up some of the results gathered from both surveys.

#### 3.2 Brainstorm

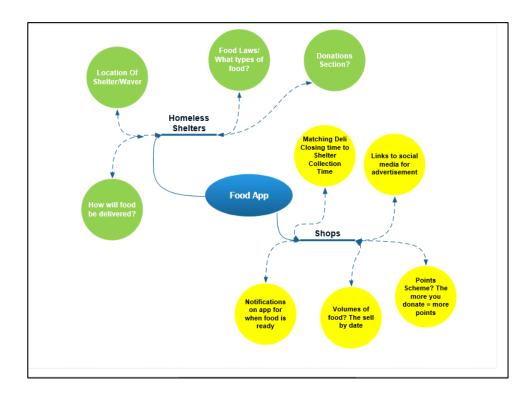
#### One Shop Supervisor:

There are no websites or apps on the market today that are similar to the idea of this food app. In order for this app to run smoothly and efficiently a lot of preparation, work and organisation is going to have to go in. There is no repetitive process that allows shops and/or restaurants to send excess food to organisations such as charities or homeless shelters who would benefit greatly from this.

A lot of thought and ideas went into the brainstorming sessions. In terms of how shelters are notified that food is ready and available from a nearby shop/restaurant, an email or notification/invitation will be sent to their device notifying them that there is food available for their shelter. An 'accept' or 'decline' feature will be implemented to let the shop know to look elsewhere or to click deliver. It will work or run similar to a dating site such as Tinder, except it will be food for shelters.

A waver must be presented to the stakeholders to ensure that liability will not be on the head of this app in the case of something out of the ordinary to happen. This will act as a contract for participants that are signing up to this app.

Location will play a big role in shops finding nearby shelters to send their excess food to. This is to ensure that food won't have to travel too far. A brief brainstorming diagram was constructed to take down a few possible features or ideas that could possibly be used.



A sign up page must be added in with all details of the app and how it will operate. Once they are signed up an automatic email will be sent with a waver that must sign. When this is complete the shelter or shop may start adding or looking for food.

There are current charities that exist with websites that will be similar to this one but the difference is they are not linking shelters/charities with shops/restaurants. A donations section from the public or from other organisations will be added to ensure that there will always be food for collection or delivery.

#### **Food & Beverage Hotel Manager:**

When the idea or concept came about at the start of the brainstorming sessions, the idea was to include shops and restaurants. Having done some research and got in contact with shops, the idea was then to elicit requirements from restaurant managers and employees either from restaurants and/or restaurants in hotels.

Restaurants have a large amount of food waste on a daily basis. A major problem with restaurants that was addressed at the second brainstorming session was that large amounts of food that is thrown out cannot be reused again. Simply because food that is cooked in a restaurant is being presented or made for a customer that has ordered the food. When the customer is then finished with this food, it has to be thrown out for hygienic reasons.

However, some of these restaurants and hotels have functions/events for various companies on a weekly basis that would suit this idea perfect. Large amounts of

packaged foods including bottled water are bought in for these events/functions. The majority of the time they over order and are left with excess amount of food that would benefit this app greatly. An events page for the app was discussed for restaurants in hotels. Whereby a hotel can indicate that they have an event on in the upcoming week. This can then allow shelters know that there could possibly be food coming from that particular hotel.

#### **Dublin Simon Community Volunteer:**

Dublin Simon Community runs a programme called 'Food for Simon' in partnership with several corporate partners of theirs. The programme they run sees them work with some of Ireland's leading food and beverage corporations with the aim of supplying healthy and nutritious meals, snacks and drinks to our clients in their services. The programme has been running since 2009, and proves to be an extremely successful model for them.

This app can link in nicely with charities such as Dublin Simon Community and various other shelters. The supply of food from shops and other organisations would benefit these charities and also reduce the waste of good food. More awareness of homelessness in Ireland can be incorporated into this app. The encouragement of others to get involved is vital for the running of these charities.

#### Conclusion:

The overall objective set out when conducting these brainstorms was to gather the thoughts of the stakeholders that are involved. This objective was met, and a great insight was given as to what to add to the website/application, how it could operate and other important features. A major factor going forward was to potentially remove restaurants from the ongoing process and idea and it was good to find out that at such an early stage. Overall the brainstorming sessions were a success and will be carried forward and implemented into developing the project further.

#### 3.3 Interview

#### **Interview Answers:**

#### **Interview 1: Shop Owner Spar**

## How often would your store throw away food? And what would the volume of food be?

He indicated that his particular store would throw away food every day, if not every second day. In terms of volume it would vary, depending on deliveries. The main food types being thrown out on a daily basis that are still fresh would be rolls, donuts, deli food such as Chicken Breasts, wedges, and on the weekend sausages and bacon rashers. He reckons that in terms of the volume being thrown out, it could possibly feed 3-4 people a day comfortably.

## Would you be interested in tracking this food wastage in your store? How would you feel the best way to track food would be?

He would absolutely be on board with tracking the food wastage in his store if it was implemented correctly. The best possible way to implement this would be to take pictures of the leftover food at the end of the day or every second day and upload it onto his shops profile on the app, with a brief description of the food (where it is from, what is it). Therefore, shelters can view this and put an interest on it.

## What features would you particularly use or feel would be beneficial most on this application?

Location feature is important to ensure we know where the food is going and how far it is for us to wait before the food is collected. A chat section, where we can get in contact if any issues where to arise. A feedback section. A rating feature where shelters can rate our store or other stores, so other shelters know that we are okay.

#### For your store, what kind of information would you want shared on this app?

A bio of our store or profile which would include where we get food from, where our store is. Maybe links to our websites and social media so whoever visits the app can view our store also, and like our pages.

## What do you feel could be incorporated to attract more stores onto this application?

Incorporating incentives for stores such as prizes or rewards for the more they donate the more points they get or the more awareness they get. Sustainability rewards possibly.

## Would you be interested in getting in partnership with chosen charities and Homeless Shelters?

Yes, it is a great idea and important to get involved in issues such as this one.

### Interview 2: Homeless Shelter Volunteer

# How often would food be delivered to this homeless shelter? Where is the main source of food coming from?

Every day there is food coming in. We have various corporate partners and companies who support us by giving us excess food from their shops, this includes companies such as Tesco. The Tesco community work with our shelter to ensure that any left-over or unused foods are donated to our services. They also supplied us with a delivery van, complete with refrigerated storage, for collecting and transporting the food to our services.

#### What changes (if any) would you make to the delivery of food to your shelter?

Time is important. We only have one van that has refrigeration. If your app was to supply more transport and more sources of food, this would be a great idea.

### Would your shelter be willing to get involved in this project?

Most Definitely, this app would not only help us, but other shelters and charities around Dublin.

# What information would you feel is best to display for homeless shelters on this app?

All Homeless Shelter related issues should be displayed. The more awareness the better. A possibility of implementing the opening times of each shelter so the organisation providing the excess foods know when to organise the delivery on the app.

# Are there any difficulties with regards to the actual food in your shelter? What would the volume of food be that is being delivered?

Before food gets delivered, information on the food is presented so that the shelter knows where the food is from and if any allergens need to be noted. Food is not accepted if it has been cooked and then frozen. Weekly soup kitchens are held where organisations volunteer and provide soups and various other foods. Food that is good is never turned down, the more food the better.

#### **Conclusion:**

The interview process was a more in depth analysis in gathering and eliciting requirements from stakeholders. Many good points and ideas were brought forward and recorded at both interviews. These were also taken into consideration going forward and will benefit the project immensely.

## 3.4 Prototyping

### Home Page:



### Our Services:



## My Profile:



## Contact Us:



#### Sign Up:



With the results that were gathered from the elicitation techniques a prototype was developed. This was developed based on the brainstorming sessions, surveys and interviews which were conducted with the involved stakeholders. This prototype will be shown to stakeholders at the workshop, where they will be able to voice their opinions and give any last recommendations before development.

The prototype that was developed, has five pages that were deemed as important to have based on the results gathered. Features such as Location map, Social Media accounts of the partners that have signed up, how to volunteer, waver forms to accept were all included along with other important features. A section for feedback may also be included in the Home Page of the developed product. These features and requirements are all important and were analysed in the MoSCoW approach because not all requirements could be used in the development.

### 3.5 Requirements Workshop

The Requirements Workshop took place on the 2<sup>nd</sup> of May at 14:00 with various stakeholders, the participants present were two employees of Spar, a Senior Manager of Spar, a Supervisor of Tesco and three volunteers from two different shelters in Dublin City Centre. After creating the prototype, it was in the interest of the project to present this to the relevant stakeholders and gather feedback on each page in the prototype.

In relation to the design and the potential layout of the application, the response at the workshop was all positive with some additional features being mentioned about the 'My Profile' page in particular. Two different 'My Profile' pages were discussed from a shops point of view, and a shelters point of view. The reason being that they will both have different but important features. For Example, the shops point of view and interface will display an upload section were they will be able to upload food, and the shelters point of view will need a swipe section to view these foods. The Senior Manager of Spar put emphasis on having a chat feature implemented so that other shops and shelters could have informal conversations about delivery times and food. Also, having a notification bar at the top of the 'My Profile' page indicating when food is ready for collection and when delivery is on its way. This is so that shelters and shops do not miss any opportunities they will be notified on their phone straight away. All these additions were noted and passed on to the developer so that it could be implemented into the final product.

The requirements were quite beneficial simply because certain features were brought to light and mentioned that could possibly be implanted in to the final website, but will definitely be passed on to the analysts. The MoSCoW approach was used to show what was important to have and what wasn't.

#### MoSCoW:

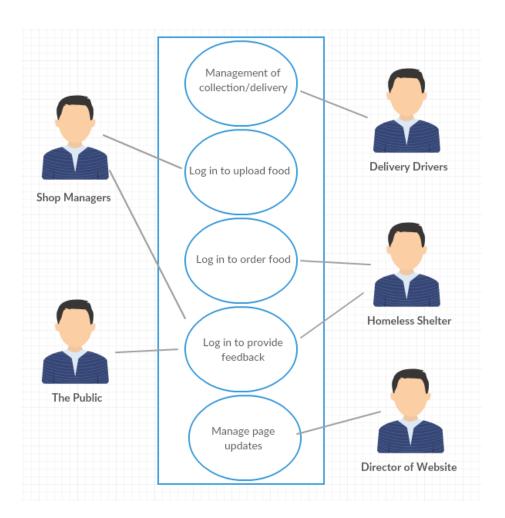
Must Haves	Should Haves
Sign Up page	Feedback section
Waver Form	Social Media
Information on Foodie Shelter	Partnership information
Contact Section	Notification Bar for delivery/collection
Food Upload for shops	Delivery calendar
Food Swipe for shelters	Information on the food
Location	Background Image
Logo	Transport Information
Home Page	

Could Haves:	Won't Haves:

Chat service	Money donations
Real timer section on delivery	Clothes delivery/service
Rating on shops/shelters	Walk in service
Food donations from the public	
Video Links	

## 3.6 Interface Design & Analysis

### **UML Case Diagram**:



#### Conclusion:

The UML Case Diagram is used and created to show the relationship and interactions between the involved stakeholders and with the new website. The actors are marked as people outside the diagram with arrows connecting them with at least one use case in the blue boxes. This indicates what actors are associated with what. From the diagram above, you can see that only homeless shelters can only log in to view and order food, on the other hand shops can only then log in to upload the food they have available. The delivery drivers that will be delivering and collecting the food will only have access to when the collections are ready and where it needs to be delivered to. The constant updates and management of the website will be accessed and controlled by the director of the website. The idea and concept behind this use case diagram is to allow and ensure that the website is secure and that it will run smoothly in its operation.

## 4. IEEE Website Requirements Specification

#### 4.1 Introduction

#### 4.1.1 Purpose

The purpose for creating this IEEE website requirements specification document for Foodie Shelter website is to clearly identify and separate the functional and non-functional requirements. This will be shown to the stakeholders prior to any development action taking place on the website. There must be a final approval before development.

#### 4.1.2 Scope

The website is being developed to improve and help homeless shelters whilst also improving the wastage of good food in shops. This website is helping a number of stakeholders with this unique service that is being offered as there isn't a service that acts as the middle man between organisations such as shops and Homeless Shelters. The website is aiming to attract more and more shops to sign up to help the homeless shelters that are signed up as well. The more recognition and the more the website becomes known, the more successful this website will become.

Organisations signed up will have the ability to upload food and select food based on preference and quantity available. A refrigerated van will then be able to transport to and from places with the desired foods, leaving the shelters satisfied and providing excellent service. Even guests from the public will be able to view and donate food and provide feedback if they wished.

## 4.2 Functional Requirements

A functional requirement is a statement of the proposed function of a system/website and its components. This section is going to list a number of functional requirements for the website.

**User Class One: User** 

#### 4.2.1 Functional Requirement 1

Title: Foodie Shelter Logo link

**Description:** This logo will be shown on every page in the Foodie Shelter website and will. When users click on the logo it will automatically direct them back to the Home Page of the website. It allows quick navigation back to the home page.

Location: Every Page on the website

**Priority:** High Priority

#### 4.2.2 Functional Requirement 2

Title: Link to upload and Log food

**Description:** One of the main functions for shops is to be able to upload and log pictures and information of food on to the website.

Location: My Profile Page after signing up

**Priority:** High Priority

#### 4.2.3 Functional Requirement 3

Title: Links for Social Media

**Description:** These Social Media links will bring the user to the Facebook accounts of the members signed up. This is to create brand awareness for the shops and shelters as an advertisement for them.

Location: Home Page

**Priority:** High Priority

#### 4.2.4 Functional Requirement 4

Title: Contact form link

**Description:** A contact form link is necessary for organisations to get in touch with

the director of Foodie Shelter in case any enquiries arise.

Location: Home Page & Contact Page

**Priority:** High Priority

#### 4.2.5 Functional Requirement 5

Title: Feedback section

**Description:** A feedback link is important for users to be able to write about their experience of this service and what they think, whether it is a member of the site or someone from the public. It will give an indication on how the website is doing.

Location: Home Page

**Priority:** High Priority

#### 4.2.6 Functional Requirement 6

Title: Allow shelters view the food logged

**Description:** This is to allow the end user (homeless shelter) view and match the

food that they want, so that it can be delivered.

Location: My Profile Page when signed in

**Priority:** High Priority

#### 4.2.7 Functional Requirement 7

Title: Push Notification

**Description:** Shelters, Shops, and delivery service will all need a notification function to notify them when things are available and ready for either delivery or collection.

Location: My Profile Page

**Priority:** High Priority

#### 4.2.8 Functional Requirement 8

Title: Sign Up Page link

Description: Users must be able to sign up to the website to be able to access the

features it offers.

Location: Sign Up Page

**Priority:** High Priority

#### 4.2.9 Functional Requirement 9

Title: About our services page link

**Description:** This will have to outline what Foodie Shelter as a service and how to get involved and volunteer also. A description of the website is important so that users know what is does.

Location: Our Services Page

**Priority:** High Priority

#### 4.2.10 Functional Requirement 10

Title: Delivery time/calendar system

**Description:** Users must be able to select when they need for and for what time, also users can put up food in advance by selecting a day on the calendar allowing the shelters to select this food in advance.

Location: My Profile Page

**Priority:** High Priority

#### 4.2.11 Functional Requirement 11

**Title:** Google maps location

**Description:** In order for deliveries to take place the location of the destination will need to be identified through a map. It will also locate nearby shelters for shops that are signed up.

Location: Home Page

**Priority:** Medium Priority

#### 4.2.12 Functional Requirement 12

**Title:** A chat system

**Description:** An informal chat system whereby users can interact with each other for any questions or information they might need.

**Location:** Home Page

**Priority:** Medium Priority

### 4.2.13 Functional Requirement 13

Title: Volunteer Video links

**Description:** A link that shows the profiles of all our volunteers and the work that they do in order for this service to stay running.

Location: Our Services Page

**Priority:** Medium Priority

## 4.2.14 Functional Requirement 14

Title: Waver Form Link

Description: A waver form for terms and conditions must be accepted when signing

in from any user. This will ensure that liability will not be on the website.

Location: Sign Up Page

**Priority:** High Priority

### 4.2.15 Functional Requirement 15

Title: Save previous transactions

Description: An option to save previous dealings with shops and shelters so they

can return there for future reference.

Location: My Profile Page

**Priority:** Low Priority

## <u>User Class Two – Administrator</u>

### 4.2.16 Functional Requirement 16

Title: Log in for Administrator

**Description:** Updates or changes to the website will be made by the administrator,

through a unique log in whereby access will be granted to the website.

**Priority:** High Priority

#### 4.2.17 Functional Requirement 17

**Title:** Contact page linked to administrator

**Description:** When a user contacts the website, it must be directed straight to the

director/owner of the website, so that he is aware.

**Priority:** High Priority

# 4.3 Non Functional Requirements

## 4.3.1 Security Requirements

The security of our user's profile must remain safe and secure on the data base. Any vulnerable information shared will be secure and managed by the website director. Pages remain secure so that no user can access anything that they should not be allowed to.

#### 4.3.2 Reliability Requirements

Our website must remain consistent and reliable throughout. When a shelter puts an interest on food put up by the shops, the collection of the food from the shop must be on time and arrive on time to the shelter.

#### 4.3.3 Availability Requirements

It is in the interest of our users that we remain available at all times, and that we are always able to provide food to the shelters from any shop signed up and that we match up the times correctly so nobody is waiting around.

#### 4.3.4 Performance Requirements

The performance of the website and the delivery of the food must be perfect. The performance of the website should be good at all times, and be easy to navigate around.

### 4.3.5 Maintainability Requirement

Any implementations or changes that need to be added in or made must not affect the user in any way.

#### 4.3.6 Extendibility Requirement

The website must be able to withstand multiple users using the website at once. Any crashes to the website will cause unsettlement and frustration to the users.

# **Developed Website**

The link provided is the link that will direct you to the developed website for Foodie Shelter, based on the requirements gathered in this specifications document - http://www.foodieshelter.com/

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# 6. Appendix

## 6.1 Project Proposal

### 6.1.1 Project Objectives

The primary objective for my final year project is to create a very detailed requirements specification document for a food collection website whereby excess food or food that could be going to waste in shops and restaurants will be collected and sent to homeless shelters or chosen charities/families through this website to reduce the amount of good food being wasted and to reduce starvation in Ireland. The foods that can be collected are foods that aren't seen to spread contamination under the food legislation and other foods that are packaged/in tins and can be traced etc.

This will be achieved by gathering information from key stakeholders such as homeless shelters where the food will be going to, and various shops/restaurants in Dublin where the excess food will be coming from. As a crucial step in this project, a vast amount of requirements will need to be gathered in order for this website to be successful. These requirements will come from volunteers in homeless shelters, owners/managers from Tesco and Spar and many other relevant stakeholders to investigate the need and the people/companies that would have an interest or benefit in this website. When dealing with these various stakeholders a number of important elements of this project will be discussed and dealt with such as who benefits from this website, the layout of the website, possible application design linked to the website, who should be involved, information/content that should be included on the website, possible partnerships, and various other aspects to gather requirements for this project. Putting the elicitation techniques to great effect will therefore help me in the process of creating a requirements specification document for this project.

In order for me to fulfil these objectives to the best of my ability, time management will play a key role in the efficient completion of this project and in the completion of the other tasks at hand such the writing up of the project proposal, the midpoint presentation in December and other relevant tasks faced along the way. Other modules and assignments will take some time away from the project but keeping to a schedule will ensure everything will be given the right amount of attention.

The main objective of the project is to reduce waste in the country and to help homeless shelters and charities or families in need while doing so. The objective therefore is for shops such as Spar/Tesco and restaurants to sign up to this website called Foodie Shelter and to get in contact with us to organize collection times and days where the food they feel is going to be wasted can be picked up and dropped to

homeless shelters or chosen charities. For restaurants it could mean if the chef put on loads of cocktail sausages for a party and none of them were used, they could then get in contact with Foodie Shelter website for these sausages to be collected within the hour and delivered to a homeless shelter where this food would go to good use rather than being thrown out. This website will hopefully attract the attention of many other shops and restaurants around and could eventually grow and in turn reduce the amount of waste and reduce the amount of starving people/families. Various features on the website will be advertisements/links of the shops/restaurants signed up, a notification bar to inform users, information on foods such as allergens etc. pick up times and other features such as charity information.

#### 6.1.2 Background

Roughly, one third of the food produced around the world for human consumption is lost through waste, and 700 million people worldwide would fall into the bracket of suffering from starvation. The background or idea behind this website is to reduce these problems in Ireland. Having done some research there are very little companies that are linked between restaurants/shops and homeless shelters or charities. Since there is no company or website out there with a concept or idea like this, I feel I should base my project around this and be the middleman and try to make a change, as it is required.

As an employee who works in the food industry as a waiter I can see first-hand the amount of good food that is being thrown out on a daily basis that could be put to good use. Therefor I can see the possible advantages and benefits associated with creating this website/app to improve the amount of food being wasted and the amount of starving families and homeless shelters around Ireland. This website will facilitate the shops and/or restaurants that sign up to the website through advertisements of their products/deals being shown on the website, and it will also give a good image for them if customers see that they are working closely with charities etc. This could then possibly lead to an increase in sales. It will also create a 'feel good' factor for the likes of Spar/Tesco knowing that their food is going to a good place rather than throwing it out.

#### 6.1.3 Technical Approach

Before I went straight in and started creating the requirements document or started creating any prototypes, I first had to research the various tools that I could use for this project. After discussing with lectures and a number of other people the main

tool's I really needed were Excel, Microsoft Word, and prototyping platforms such as balsamiq to give a visual representation of the final website design.

#### The Tasks Involved:

#### 1. Gathering of Requirements

To get the requirements necessary for this project I will need to get in touch with stakeholders who will be involved in the process of building this website. Topics that will be discussed with the stakeholders are the essential features of the website, the design, what information they would like on this website and these requirements will all be recorded in a detailed report so it can be worked on.

#### 2. Prototype

Once all the requirements are gathered and studied, a prototype must be developed in order to show the stakeholders at the requirements workshop. This will be shown to the stakeholders to ensure that they are happy with it and if any changes need to be made. This Wireframe could be used in the midpoint presentation.

## 3. Development of Project Website

Once my clients are happy with the requirements and they are happy with the wireframe the website will be sent for development. At this stage, a lot of testing will need to be carried out to ensure there are no problems.

#### 6.1.4 Special Resources Required

Seeing as I am not a full-time IT student, I do not have as much knowledge on the programming language and I lack knowledge on how to develop a website. For this reason, I have watched various video tutorials and researched into the making of a website.

#### Resources that I will need:

- Google Drive: This will be used for the continuous saving of my documents.
- <u>Microsoft Word:</u> For taking notes, surveys or writing up documents.
- Balsamiq: This is to Create the design for my Prototype.
- Lecturer's notes and guides for elicitation techniques, formats etc.
- Microsoft Project: To complete my Gantt chart for my project plan.
- WordPress: This will be used for the development of the website.
- Google Forms: To conduct and make the surveys, google forms will be used.

These are some of the resources that I will be using throughout my project to help me not only gather information but to help me format and organise my document.

## 6.1.5 Project Plan



Above is a guideline or a project plan of all the project deliverables that I will be following throughout the year in order for me to complete my project on time. It also contains the duration and start date of each deliverable.

#### 6.1.6 Research

When I came up with the idea to build a website to reduce the waste of food from shops and restaurants, and to help homeless shelters and charities as a result, I had to undergo a lot of research. Seeing as this idea is based around food, there had to be research into the Food Safety Authority Legislation on laws about the contamination of food and what foods can be collected etc. I will be using the Food Safety Authority website throughout this project to strengthen my knowledge around the laws of food. It is also important for me to research into the shops and restaurants that could be signing up to this website and to determine the benefits involved in them signing up. It is important for me to have a knowledge and understanding on what foods they stock or sell and also how much waste they have

on a daily/weekly basis and what types of food they throwing out that could be used or collected for homeless shelters. Other information that is relevant is what times the delis from shops close at and what time the homeless shelters accept food at so that I can match up and make sure there is a crossover.

Another important aspect of research that will need attending to is the delivery to and from shops and shelters. A type of transport with refrigeration and heating systems to keep the transport of food safe and edible when it reaches the destination is vital.

A lot of research will be going into the various food charities and homeless shelters around Dublin that will appeal to this website to understand their location, policies and what needs and wants they have. Surveys and Questionnaires will be sent out to further my research to get a more in depth analysis on what I can do to improve the idea or website.

#### 6.1.7 Evaluation

To evaluate my requirements specification project, I will be using a few elicitation techniques to review and ensure the document is complete to the best of my ability. Techniques I could possibly use to evaluate the project are conducting brainstorming sessions and analysis sessions to see if any changes need to be implemented or added in.

Once this document is completed, the website must then be developed based upon the requirements that were elicited. Prior to the showcase, I will organise a meeting with my project supervisor to see if any changes or additional tips need to be given. I hope that the website created is a success.

# 7. Monthly Journals

# 7.1 September

#### **My Achievements**

This month, I was able to get the project title and had to think of a project title as the project proposal pitch dates were set. I needed to ensure that I had a good idea that would be realistic yet challenging. I was able to think of a few ideas and I was also able to narrow it down to one for the pitch.

My contributions to the projects included thinking and researching ideas for the project so that I could get it accepted in the pitch. When I thought of a few ideas I wrote them down and had to pick which idea I wanted take into the pitch.

## My Reflection

I felt, it worked well to get a few ideas together and try to pick or maybe join my ideas together. I had to make sure I documented everything I thought of so that I wouldn't forget anything.

However, I was not successful in getting ideas straight away, I had to keep trying until I felt I had a good enough idea to build a project around.

### **Intended Changes**

Next month, I will try to keep on top of the work that is suggested to me by my supervisor so it won't get in the way of any other assignments. I will continue to upload my reflective journals and to note dates so I know when things are due and when my presentations are etc.

I realised that I need to carry out a lot of research in order for this project to go well. I also need to take note of due dates for the proposals etc.

## **Supervisor Meetings**

My Supervisor has not yet been given. I will know in October after the pitch.

#### 7.2 October

#### My Achievements

This month, I was able to prepare for the project proposal pitch as I was given a time and date to pitch my idea for the project. My idea was accepted and therefore I was able to start my project proposal document.

My contributions to the projects included creating a project plan for the project including a plan with deadlines to meet and how long they will take. I included this into the proposal document. Most of my project proposal document was completed by the end of October.

#### My Reflection

I felt, it worked well to do a bit of the proposal every day so that I could keep on top of other assignments. Also seeing as I was given a supervisor this month I feel it will be important to keep in touch and to share all my ideas with him and to get feedback.

However, I was not successful in trying to do a bit of the proposal every day as I had other projects that needed to be done. However, I did not let it get in the way too much of the proposal.

### **Intended Changes**

Next month, I will try to meet with some stakeholders to gather some requirements for the project. I will also try to meet with my supervisor more.

I realised that I need to gather quite a few requirements and needs form stakeholders and to part take in interviews and surveys. There might be some slight changes to the idea of my project but hopefully nothing major.

## **Supervisor Meetings**

Date of Meeting: 14th October

Items discussed: The needs and wants of my idea. 5W's 2H's

Action Items: Researched into what my supervisor discussed with me by referring my project back to what was said.

#### 7.3 November

#### My Achievements

This month, I was able to complete my project proposal for submission. In this proposal I undertook a number of tasks, including conducting two brainstorming sessions where I was able to gather a few ideas and requirements as to what I could incorporate into my project. I drew out a brainstorm and made sure I included it into the midpoint presentation.

Also, a draft of my survey questions was written up and published on google forms. This is where my final survey questions will be published for response to reach a broader audience. I also included this into the midpoint presentation.

Also this month, I made a prototype of what the homepage could look like for the final project. This included some features that I gathered from the brainstorming sessions and with further research.

Another task in which I was able to complete this month was creating a few interview questions for when I am going to conduct an Interview after the Christmas period.

My Midpoint presentation was also this month.

#### My Reflection

I felt, it worked well to do a lot of research into the project and to talk to my supervisor more on weekly basis.

However, I was not successful in gathering all the requirements I needed but hopefully now that the midpoint is done and I've got feedback it will steer me closer to where I need to be.

#### 7.4 December

#### My Achievements

This month, I was able to get in contact with various key stakeholders such as Homeless Shelters and Shops. This was important because a draft of interview questions was written up so that I could get them approved for the actual interview process to take place. I have decided on all my elicitation requirements techniques, so the priority is to get the draft documents written up before I actually proceed with publishing the surveys and interview questions.

My contributions to the projects included getting my requirements elicitation techniques finalised and decided on. I have exams coming up at the start of January, so it is important to prioritise what needs to be done and how I will attend to the important tasks first.

#### My Reflection

I felt, it worked well to follow the project plan that was made for the proposal, especially because my exams are around the corner I need to manage my time effectively. I needed to fix up and change the proposal slightly that was submitted before.

#### Intended Changes

Next month, I will try to complete my survey and send it out to the stakeholders for responses.

I realised that I need to manage the requirements techniques and when best to do them so I can get as much information as possible for my document.

#### **Supervisor Meetings**

Date of Meeting: 06/12/2017

Items discussed: How will food be delivered from the shop to the shelter? How best to go about this? Who else can get involved? Would the government be an option?

Action Items: I researched in to various systems that are in place with shelters at the moment and to see if I could implement it in to my project. This then helped me going forward because it gave me a vision on how it will operate.

## 7.5 January

## My Achievements

This month, I feel like I got a lot of work done and out of the way. With the semester one exams finished at the middle part of this month, I was able to focus more on my project and focus on getting work done. I published my survey for response, and got a load of results towards the end of the month. My first proper brainstorming session took place at the end of this month. I had to document the results and information I gathered from the techniques I used and incorporate them in to my specifications document.

## My Reflection

I felt that when I had gathered the requirements from one technique, I had to keep going on to the next technique and to organise the focus group and my second brainstorming session. The survey has been out and has been gathering responses.

I didn't get a chance this month to create a proper prototype to show to my supervisor before showing it at the focus groups or workshop.

#### **Intended Changes**

Next month, I will have my first and second interview complete and documented and will hopefully have sufficient information from them that will add towards the project. Some sort of a mock up prototype will hopefully be completed or in progress so that I can get it approved and present it to the relevant stakeholders for their view and what they think can be added or removed.

#### **Supervisor Meetings**

Date of Meeting: 18/01/2018

Items discussed: After the exams were complete I met with my supervisor and the interview process was discussed and who I will be interviewing. We discussed what type of questions would be suitable to gather sufficient information and requirements.

## 7.6 February

#### My Achievements

This month, I was able to utilize or use the requirements I've gathered from the various techniques and put them to use in my document when developing my prototype. Last month I wanted to have made some progress if not have my prototype completed. I have conducted my two interviews this month also, which I set out to do this month. I had a brainstorming session earlier this month with a volunteer from a known shelter, and got a very good insight to the views and ideas that were expressed and will certainly guide me for the rest of the project.

#### My Reflection

I felt, it worked well to get in touch with my stakeholders earlier on in the year because organising times and dates for interviews and brainstorming sessions at this point would be too difficult in my opinion. I reached out to them in December/January to organise meetings etc.

#### **Intended Changes**

Next month, I will try to have made as much progress to nearly finalising everything as much as I can because I have other assignments that will be due soon also so I will need to allocate time for them as well.

I realised that I need to format and document everything in to one document soon enough before everything starts to pile up on top at the end.

#### **Supervisor Meetings**

Date of Meeting: 10/02/2018

Items discussed: The next step in gathering requirements and how to go about them in the best way possible. The results of the interviews and what they mean and how to utilize the information as best as possible.

#### 7.7 March

### My Achievements

My contributions to the project so far are the two interviews are complete and documented, my survey is more or less complete seeing as all the stakeholders I sent it to give me feedback and responded to the survey. My brainstorming sessions are also complete and ready to be documented. Having all this done and complete, it gave me the opportunity to complete my full prototype for the interface analysis design and the workshop to show the stakeholders involved what the end product could possibly look like.

## My Reflection

I felt, it worked well to be constantly working and progressing on the project and getting in touch with my supervisor for advice and feedback.

## **Intended Changes**

Next month, I will try to have the workshop complete so that the final changes can be made and the production of the app can be made.

## **Supervisor Meetings**

Date of Meeting: 09/03/2018

Items discussed: The prototype was discussed and what was being added in and what will be taken out before I show the shelters and managers/employees etc.

Action Items: I built the prototype to the best of my ability and tried to incorporate all the requirements and features in as best as I could.