

University of Buea

Faculty of Engineering and  
Technology

Department of Computer  
Engineering



Universite de Buea

Faculte d'ingenieurie et de  
Technologie

Genie Informatique

## **CEF 440: INTERNET AND MOBILE PROGRAMMING**

### **COLLECTION AND ANALYSIS OF REQUIREMENTS FOR A FOOD WASTAGE APPLICATION**

- TENDONGFAC GEORGE NJIMO FE20A116
- DONGHO NONGNI GUIROLE FRANCIS FE20A230
- ARVELLA CHRISTIE PETTOUN TCHOUAKWE  
FE20A011
- MBUNGAI MICHAEL BERNARD FOMO FE20A064
- NGUEMGNE FOTSO VINY ANGELE FE20A078

#### **Supervisor:**

Dr. NKEMENI Valery

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## INTRODUCTION

**Food waste can be described as all the food that is dumped or otherwise left to rot away that could have been salvaged one way or the other.** This could be caused by many factors which could be conscious or accidental.

### Problem Description

Nearly one-third of all the food produced around the world is never eaten. By some estimates, we waste **1.3 billion tons** worldwide every year. On the other hand according to these same estimates 20% of the world population face acute food shortage and all this waste has a huge economic, environmental and social impact.

In an article co-authored by **Harold L. Feukam in the Science Direct journal**, it was reported that an estimate of 16% of households are experiencing food insecurity in Cameroon. Based on the 2015 Global Hunger Index (GHI), Cameroon was classified in a state of “serious” severity of food insecurity with a score of 24.2 (World Food Program, 2017).

It is to be noted that right at top with plastic and paper waste is to be found food waste.

### Causes of Food Wastage

- It begins on the farm and can be driven by a whole host of factors beyond the grower’s control. Weather, pests, disease, low market prices or high labor costs all lead to food left in the field. Food that may look perfectly ripe and edible in the field may be too ripe by the time it reaches the consumer, so it’s never harvested.
- It’s not just consumers that are picky about their produce. Market-based quality or grade standards also play an unintentional role in food waste.
- Buying more than what is needed, overstocking shelves, inaccurately predicting shelf life or damaging products, poor storing practices, etc. These factors could, at the consumer level, lead to expired or otherwise neglected food that end up in the trash.
- Restaurants also waste food by mismanaging inventory, poor menu choices or oversized portions.

All these factors, and many others, influence the amount of food that ends up being thrown away, which could have been prevented if the proper measures were put in place and effectively implemented.

### Solutions to Food Wastage

- Proper establishment of a plan before buying food.
- Food recycling: Food recycling efforts are already underway but the technologies and methods used should be bettered. Starch-rich foodstuffs

such as crisps, bread, biscuits, and breakfast cereals can, for instance, be recycled into high quality feeds for livestock.

- Farms can evaluate food losses during processing, distributions and storage and adopt best practices. Farms can sell fresh but unmarketable products to food banks at a reduced rate.
- Businesses such as grocery stores, restaurants and institutional food services can evaluate the extent of their food waste and adopt best practices. Examples include supermarket selling damaged or nearly expired food at discounted prices or offering “half-off” promotions instead of “buy-one-get-one-free” promotions.

## **Problem Statement**

The idea behind this project is to reduce or even avoid the waste of food stuffs in our society. This will permit those who have food stuffs and who are no longer in need to upload to this platform. The food stuffs uploaded can be free or at a discount price. This can permit others to search for available food stuffs.

## **Project Objectives**

To develop a functional mobile application which will aid in the reduction of food wastage.

## **COLLECTION OF REQUIREMENTS**

After several discussions with all the stakeholders. It was decided and agreed upon that the application will have the following functionalities.

From the user point of view, the user should be able to:

- Create an account and login into the account.
- View available food stuffs on the platform.
- Upload a food stuff.
- Remove a food stuff.
- Get in contact with a seller from his profile.
- Use cellular data or Wi-Fi.
- Receive a notification each time a new food stuff is available.
- Report other users

From the administrator’s point of view, the administrator should be able to:

- View the system.
- Add a user.
- View the users’ activities on the system.
- Disable an account.
- Classify users according to main purpose for using the app.

- Showcase promotions.

## **ANALYSIS OF REQUIREMENTS**

**During** the analysis of the requirements **obtained**, the functionalities were separated into 2 categories functional and non-functional requirements.

### **Functional Requirements**

- 1. Create an account**

On arrival on the app, the user is required to fill his or her personal information such as name, telephone number, location.

- 2. Login**

The user is expected to login using the credentials provided during the account creation.

- 3. View available food Items**

Upon successful login, the user is presented a list of available food item such that the cheapest are shown first by default.

- 4. Upload or Remove food Items**

Users have the possibility to upload a picture of the food item he/she wants to sell or give away.

If for one reason or another, the user should have the possibility to delete the post.

- 5. Filtering Options**

The user should have the possibility to display the various food items according to various preferences such as, by price, type, date, or a combination of these preferences.

- 6. View Other Profiles(Users)**

Through a post, a user should be able to access the profile of the seller from where he/she could obtain the contact, review/rating, with the location.

- 7. Notifications**

Each user in the system should be able to receive notifications each time a new food stuff is uploaded in the system.

- 8. Report Other Users**

Through a rating system, users should be able to comment (report or appreciate) the services of another user.

- 9. View and Manage Users**

The app's administrator should be able to view the activities, that is, number of users, number of daily posts, the uploaded and deleted pictures.

- 10. Taking Sanctions**

The administrator is able to sanction user reported for misconduct or users whose ratings have a certain low standard.

## **A. Non-Functional Requirements**

### **1. Light weight**

The installation package should be light and once installed, it should occupy as little space as possible.

### **2. Less data Usage**

Given the availability of internet resources within the country, the app should use as little data as possible.

### **3. User Friendly**

The interface should be intuitive for the user, that is, it should be easy to learn and use.

### **4. Promotion**

The app should have a platform for advertisement where users or third parties could promote their services.