Software Requirements Specification

Version 1.0

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Dunder Mifflin Infinity 2.0

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Table of Contents

1. Introduction

1.1 Purpose

The purpose of this document is to present a detailed description of Dunder Mifflin Infinity 2.0. It shall explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for Dr. Tamer Aldwairi for his approval.

1.2 Document Conventions

This document utilizes **bold** to delineate sections throughout the document. Throughout section 2.2 we use diagrams to help illustrate the relationship between the user and the program. At the end of the document is a glossary in case any terms are unclear.

1.3 Intended Audience and Reading Suggestions

This document is intended for viewing by developers of the software, Dunder Mifflin management, and Dunder Mifflin stock holders. We suggest reading this document in chronological order to get an overall understanding of the system. If a specific topic is desired, consult the Table of Contents to find where the information is located. If one wants to get a general understanding of the system without specifics they only need to read the introduction.

1.4 Product Scope

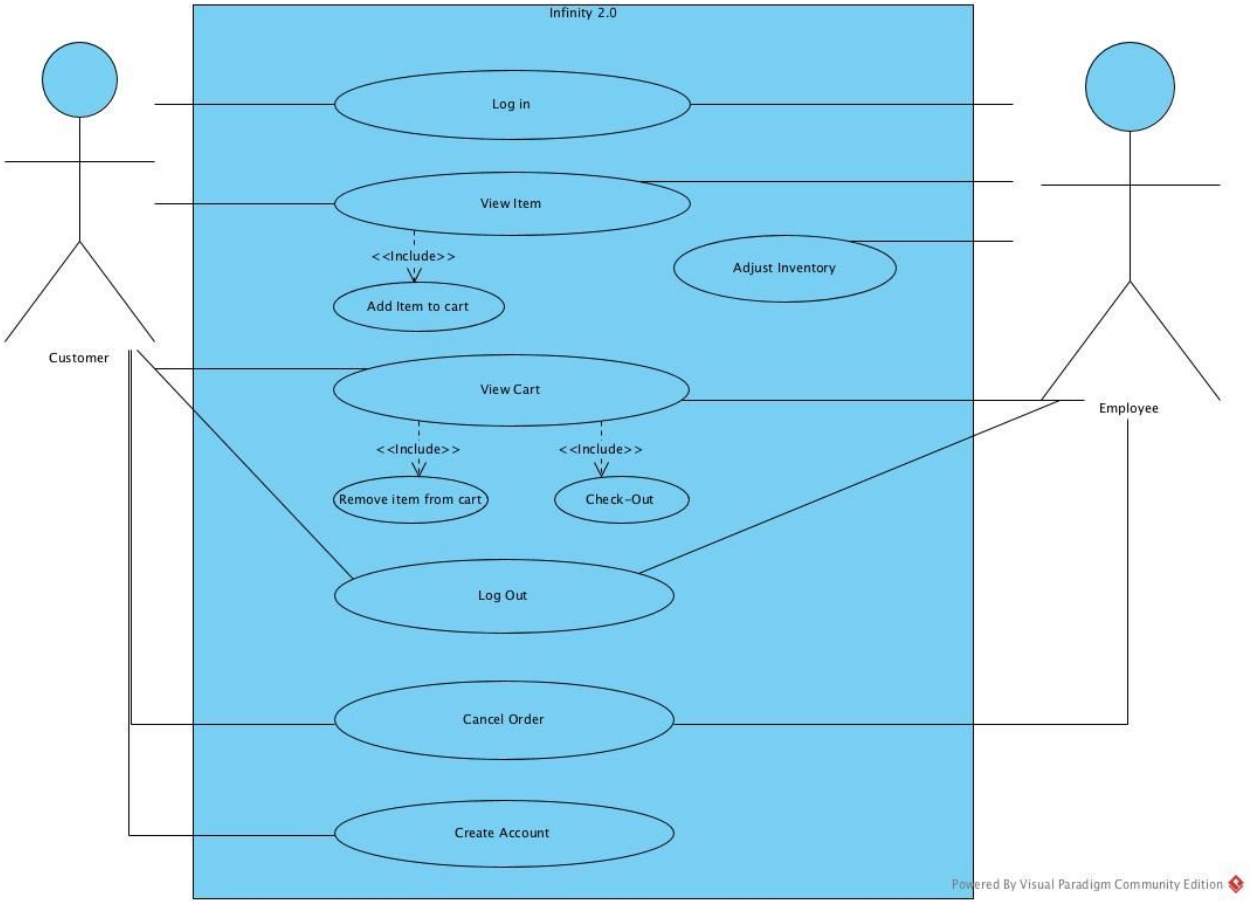
This program shall be an ordering system for paper products for a local paper company called Dunder Mifflin. This software system shall be an easily accessible interface for making paper orders within the US, removing the customers' need to travel to a physical store location to buy paper. The customer shall select the items they wish to order from the products listed and shall be able to add them to their cart making it easy to order multiple products at once. This system shall allow customers to place orders using their computer, which shall make it easier for individuals and makes the employee's life easier by not having as many orders through phone. Also, The employee shall be able to use the website themselves when placing orders for a customer which shall be more efficient since some parts of the ordering process shall be automated.

The user shall be able to add and remove items from their cart. They shall also be able to view their cart and delete their whole order before purchase if they change their mind. The system shall calculate shipping prices and total the cost of the customer's order and allow users to pay online via credit card. Additionally, the system shall track inventory levels to make sure that products displayed are actually in stock and available to be purchased. In case of the inventory levels changing without the system being updated, an employee shall be able to manually adjust the inventory.

2. Overall Description

2.1 Product Perspective

Dunder Mifflin Infinity 2.0 shall be used by both customers and employees. Both actors shall be able to place orders through the desktop application. Any communication with the system shall be done through the user interface.The employee shall be able to do everything a customer can do while also being able to adjust the inventory levels manually.



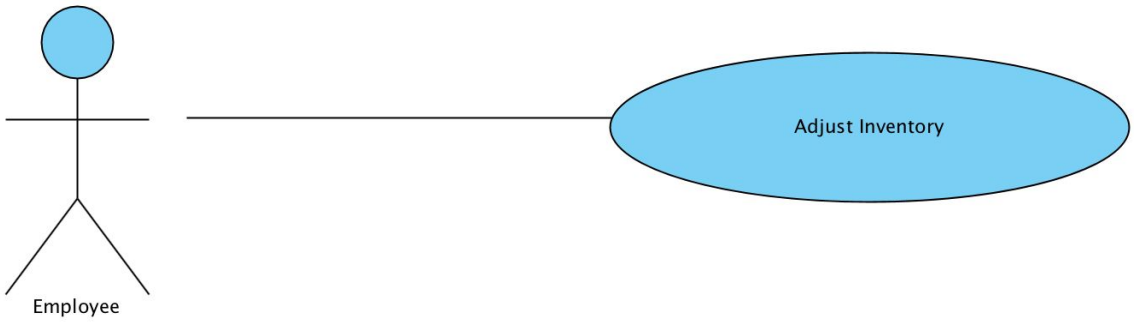
2.2 Product Functions

This section outlines each case of our use case diagram. The employee shall be able to access all the cases that the customer can, but has an additional case.

2.2.1 Employee Use Case

Use case: **Adjust Inventory**

Diagram:



Brief Description:

The employee can manipulate inventory items.

Initial Step-By-Step Description

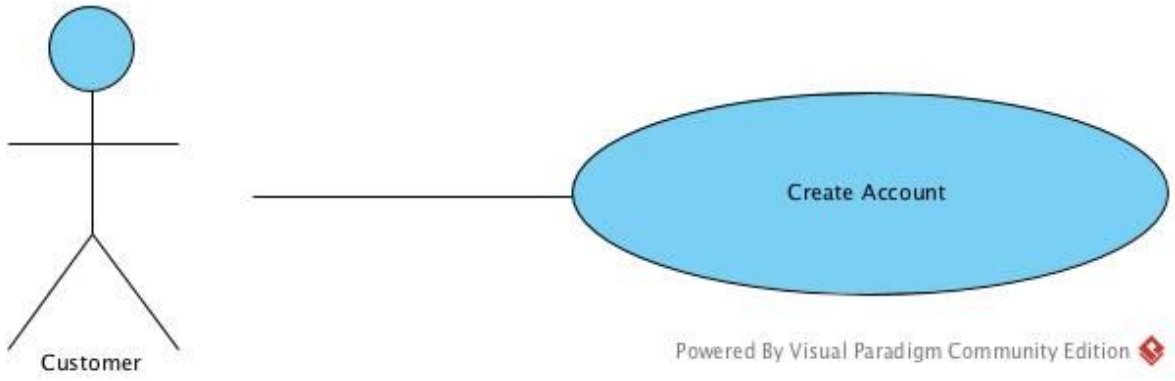
Before this use case can be initiated, the Employee has already successfully logged-in to an Employee account.

1. The employee selects Inventory adjustment.
2. Employee selects item they wish to adjust.
3. Employee types in correct value for item.
4. The employee saves adjustment and is brought back to the item list.

2.2.2 Customer Use Case

Use Case: **Create Account**

Diagram



Brief Description:

The Customer creates an account to be able to place orders.

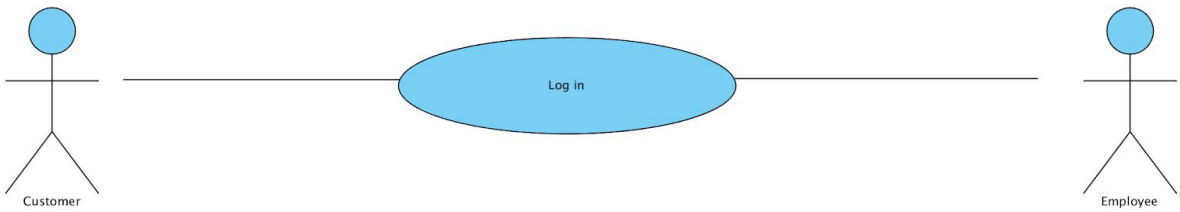
Initial Step-by-Step Description:

1. The customer selects Create Account.
2. The customer inputs username and password.
3. The Log-in data is confirmed.
4. The user is brought back to the item list.

2.2.3 User/Employee Use Case

Use Case: **Login**

Diagram:



Brief Description:

The customer and employee both begin by logging in with their login credentials.

Initial Step-by-Step Description

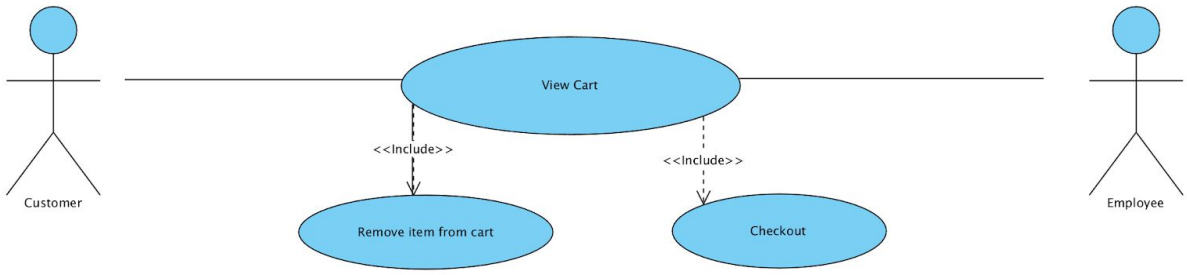
The program is assumed to be launched at this stage in the program.

1. The user will enter their login credentials.
2. The user will press enter.
3. If the user enters invalid credentials, they will be prompted to re-enter their credentials.

2.2.4 User/Employee Use Case

Use Case: **View Cart**

Diagram:



Brief Description:

The user views the items currently in their cart. Here they can also chose to remove certain items from their cart or check out.

Initial Step-By-Step Description

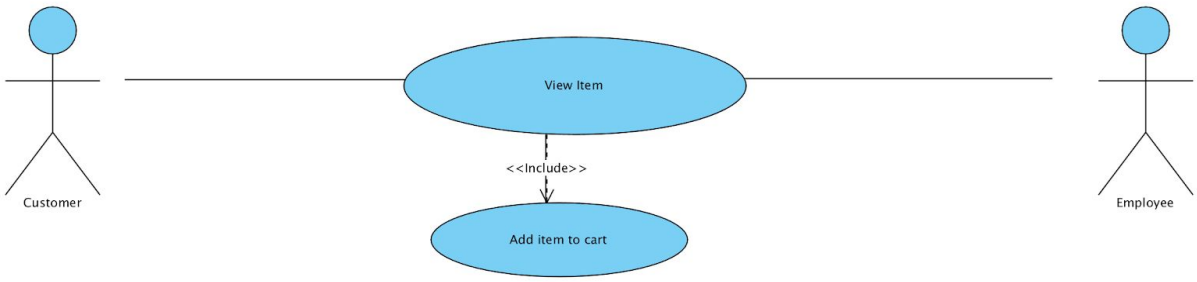
Before this use case can be initiated, the user has already successfully logged-in to an account.

1. The user selects View Cart.
2. The user is able to remove items from their cart.
3. The user can chose to check out.
4. This brings the user to a check out screen where they input payment and shipping information.
5. Checks the information to make sure it is valid.
6. User confirms order and is brought back to item list.

2.2.5 User/Employee Use Case

Use Case: **View Item**

Diagram:



Brief Description:

The user views an item. After viewing an item they have the option of adding it to their cart.

Initial Step-By-Step Description:

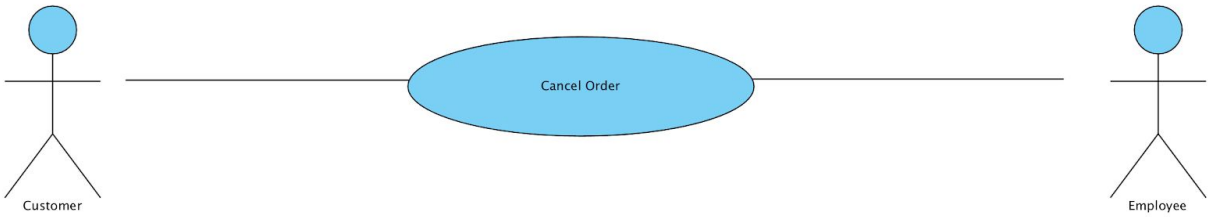
Before this use case can be initiated, the user has already successfully logged-in to an account.

1. The user selects an item they wish to view
2. They are now able to see a description of the item
3. The user is able to add the item to their cart.

2.2.6 User/Employee Use Case

Use Case: **Cancel Order**

Diagram:



Brief Description:

Removes all items from cart.

Initial Step-by-Step Description:

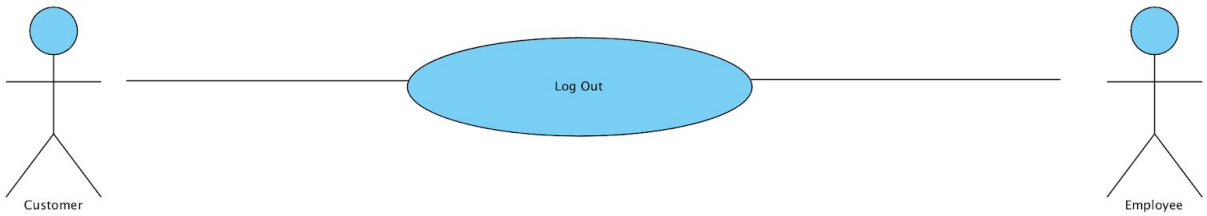
Before this use case can be initiated, the user has already successfully logged-in to an account.

1. The user selects cancel order.
2. The user confirms that they would like to cancel order.
3. All items are removed from the cart.

2.2.7 User/Employee Use Case

Use Case: **Log Out**

Diagram:



Brief Description:

The user may log out of their account.

Initial Step by Step Description:

Before this use case can be initiated, the user has already successfully logged-in to an account.

1. The user clicks the log out button on the top of the page
2. The user is logged out

2.3 User Classes and Characteristics

The customer is expected to be able to navigate a basic graphical interface. This interface will include buttons and images which can respond to the user interaction. The employee is expected to be able to navigate a basic ordering system and be capable of adjusting inventory levels.The employee will also be able to do all actions that a customer can do.

2.4 Operating Environment

Dunder Mifflin Infinity 2.0 will operate in a self contained GUI running on Java. The program will run in a Windows 7+ operating system. The program will only supports Windows 7+. The desktop application will have access to the local Dunder Mifflin inventory database.

2.5 Design and Implementation Constraints

The system will be using SQL and the Java FX package for its GUI. Limitations for the system will be a result of limitations that are based off of those systems. The Dunder Mifflin organization will be responsible for maintenance after the original delivery of the system.

2.7 Assumptions and Dependencies

We will be using SQL for our database functionality. Databases are a key component of our software. If SQL does not work out we will try to find another database system or we will utilize Java to store our data.

3. External Interface Requirements

3.1 User Interfaces

The user interface will allow users to access the login screen, the homepage, and the checkout screen. The login screen will allow username and password input and a ‘login’ button. There will also be a ‘create account’ button for new users. The homepage will display products, each with an ‘add item’ button. Also on the homepage will be a checkout button which will bring the user to the checkout screen. The checkout screen will display the user’s cart and allow the user to input their shipment and payment info. Both the homepage and the checkout page will have a ‘logout’ button on the top of the interface.

3.2 Software Interfaces

Our system shall take advantage of SQL for interacting with databases stored locally. Java FX shall be used for the software’s GUI. We shall take advantage of the Standard Java Libraries for other aspects of the software.

3.3 Communications Interfaces

The software will be locally self contained. The GUI will interact with parts of the program and access a local database. The local database will be protected so that they user's login information will not be compromised.

4. System Features

4.1 Login

4.1.1 Description and Priority

The user shall be able to login to a personal account. This account shall be created by the user. This is a High priority feature, as users are required to login to an account to place an order. Having separate accounts shall keep the user's information more secure. A penalty could potentially be a loss of customers from users who do not wish to create an account but are required to.

4.1.2 Stimulus/Response Sequences

A login button will be presented on the first screen the user is brought to. If the user presses this button, they are presented with textboxes where they are asked to input a valid username and password. If the information is valid, the user will be logged in, if the information is not valid it will re-prompt the user.

4.1.3 Functional Requirements

REQ-1: The system asks the user for a valid username and password

REQ-2: The system checks if the username and password are valid.

REQ-3: If the information is incorrect, the user is asked again to enter a valid username and password.

4.2 Logout

4.2.1 Description and Priority

The user shall be able to press a ‘logout’ button at any point after logging in. This will bring the user back to the login screen. This feature is of medium priority as it is not important for the key functionality of the software.

4.2.2 Stimulus/Response Sequences

A ‘logout’ button will appear at the top of the GUI after a user logs in. If the user presses this button, the logout process will occur and the user will be brought back to the login screen.

4.2.3 Functional Requirements

REQ 1: The system shall return to the login screen.

REQ 2: The system shall provide a ‘logout’ button once a user is logged in.

4.3 Add Item

4.3.1 Description and Priority

The user shall be able to add an item to their cart. This feature is of high priority as it allows the user to select the products they wish to purchase.

4.3.2 Stimulus/Response Sequences

While viewing a specific item, an add item button will appear on the GUI. If the user presses this button, the selected item will be added the user's cart.

4.3.3 Functional Requirements

REQ-1: The system will display an add item button while the user is viewing a specific item.

REQ-2: The system will access the customer's current cart.

REQ-3: The system will add the product, along with the product quantity to the customer's cart

4.4 Remove Item

4.4.1 Description and Priority

The remove item functionality shall allow the user to remove items from their order one at a time. This is of high priority to ensure a smooth user experience when making their paper order.

4.4.2 Stimulus/Response Sequences

When viewing their cart, the user will be shown a ‘remove item’ button next to the items they have added to their order. Clicking this button will remove one of the selected item then update the user’s order

4.4.3 Functional Requirements

REQ-1: The program shall remove one instance of the selected item from the user’s order.

REQ-2: The program shall update the users cart with the newly calculated cost and quantities.

4.5 Checkout

4.5.1 Description and Priority

The Checkout feature allows the user to place orders. Because it is necessary in placing an order, it would be a High priority feature.

4.5.2 Stimulus/Response Sequences

After the user is logged in, the system shall provide a checkout button. Clicking this button shall ask the user for shipping information and valid payment information. The system will re-prompt the user if invalid information is given.

4.5.3 Functional Requirements

REQ-1: The system shall ask the user for shipping and payment information

REQ-2: The system shall check to make sure information is valid.

REQ-3: If incorrect information is given, the user will be asked to input valid information.

REQ-4: The system calculates shipping and total cost.

REQ-5: The system places the order.

4.6 Adjust Inventory

4.6.1 Description and Priority

The employee will be able to change the available quantity of existing items and be able to add new items. This is a high priority feature as the business must be able to manage its inventory.

4.6.2 Stimulus/Response Sequences

To add a new item:

The employee will click an add item button and will enter the new item into the system.

To change the quantity of an existing item:

- The employee will select an existing item.
- The employee will change the quantity of the item.

4.6.3 Functional Requirements

REQ-1: The system will verify that the user is an employee.

REQ-2: The system must access the existing inventory.

4.7 Create Account

4.7.1 Description and Priority

A new user will be able to create an account in order to sign-in in the future. This is a high-priority feature as the business needs to be able to obtain new customers.

4.7.2 Stimulus/Response Sequences

The user selects create account. The system asks the user to input a username and password. The system confirms the information, making sure the username is available.

4.7.3 Functional Requirements

REQ-1: The user must select the create account option.

REQ-2: The username and password must not be in use by any other user.

4.8 Cancel Order

4.8.1 Description and Priority

The user shall be able to cancel their order once they have reached the checkout phase of their order. This functionality is of medium importance.

4.8.2 Stimulus/Response Sequences

A ‘cancel order’ button will appear in the GUI once the user selects ‘Checkout.’ Clicking this button will clear the user’s cart of all items and return the user to the store page.

4.8.3 Functional Requirements

REQ-1: The system shall add a ‘cancel order’ button once the user is in the checkout screen.

REQ-2: The system shall be able to clear the user’s cart of every item.

REQ-3: The system shall be able to return to the store page.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Performance requirements for Dunder Mifflin Infinity 2.0 are in line with the hardware requirements for Windows 7. Computers designed for older platforms are not guaranteed to function properly.

Windows 7 System Requirements:

- 1GHz 32-bit Processor
- 1GB Ram

5.2 Security Requirements

Dunder Mifflin Infinity 2.0 will require users to create a unique username and password that must be supplied to access their account. Without these, one will not be able to access the users information. Due to the storage of unique user credentials, it is advised that no user share his or her password with anyone. In the interest of account security, the system will also have specific requirements for the user's password.

5.3 Software Quality Attributes

The program will allow for new items to be added simply. The system will be designed so that every state in the US has its own tax scheme so that if one states tax changes it does not impact other states. The user interface will be designed to be as user friendly

as possible and self explanatory. The goal with the user interface is to be as easy to use as possible.

5.4 Business Rules

Dunder Mifflin will only allow managers to make manual adjustments to the inventory levels. If another employee notices something that must be adjusted they can alert a manager to change it.

6. Other Requirements

Appendix A: Glossary

Term	Definition
Customer	A person looking to purchase paper.
Employee	Assist a customer in ordering paper.
Java FX	A standard GUI Library for Java.
Paper Package	An available paper product to purchase.
SQL	Structured Query Language. SQL is used to communicate with databases.
Stock Database	Holds information pertaining the stock of paper packages.
Windows7+	Windows 7, Windows 8, WIndows 8.1, Windows 10
User	A customer or employee.