

# Software Requirements Specification

Version 1.0

<<Annotated Version>>

May 27,2021

Paying by points system

Farah Team leader

Ruba Alali

Mai AlSuliman

<<Any comments inside double brackets such as these are *not* part of this SRS but are comments upon this SRS example to help the reader understand the point being made.>>

Refer to the SRS Template for details on the purpose and rules for each section of this document.>>

## Table of Contents

Table of Contents .....	i
List of Figures .....	ii
1.0. Introduction .....	1
1.1. Purpose .....	1
1.2. Scope of Project .....	1
1.3. Glossary .....	2
1.4. References .....	2
Overview of Document .....	3
2.0. Overall Description .....	3
2.1 System Environment .....	3
2.2 Functional Requirements Specification .....	4
2.2.1 Shop Manager Use Case .....	4
Use case: Make Order.....	4
Use case: Update Products info.....	5
Use case : log in.....	6
2.2.2 Customer Use Case .....	7
Use case: Choose a Gift.....	7
Use case : scan barcode.....	8
Use case :log in.....	9
2.2.3 Manager Use Case .....	10
Use case: Add/Update Shops .....	10
Use case: Create Account.....	11
Use case :update customer/shop manager info.....	12
Use case: Add Gifts.....	13
2.3 User Characteristics .....	13
2.4 Non-Functional Requirements .....	14
3.0. Requirements Specification .....	14
3.1 External Interface Requirements .....	14
3.2 Functional Requirements .....	15
3.2.1 Make Order.....	15
3.2.2 Update products info.....	16

3.2.3 log in shop manager.....	17
3.2.4 Choose a Gift .....	18
3.2.5 scan barcode .....	19
3.2.6 log in customer .....	20
3.2.7 Add Shops .....	21
3.2.8 update shop.....	22
3.2.9 Create Account.....	23
3.2.10 Add products info.....	24
3.2.11 update customer/shop manager info.....	25
3.2.12 Add Gifts.....	26
3.3 Detailed Non-Functional Requirements .....	27
3.3.1 availability.....	27
3.3.2 security and privacy.....	27
3.3.3 performance.....	27
3.3.3.1 processing time.....	27
3.3.3.2 response time.....	27
3.3.3.3 querying time.....	27
3.3.4 usability.....	27
3.3.5 Portability.....	27
3.3.6 recovery.....	27

## List of Figures

Figure 1 - System Environment .....	3
-------------------------------------	---

## 1.0. Introduction

### ***1.1. Purpose***

The purpose of this document is to present a detailed description of the paying by points system, it will explain the purpose and feature of this 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 both the stakeholders and the developers of the system

### ***1.2. Scope of Project***

This software will be a paying by points system for specific series of markets for a company, to find a new way for improving the customer shopping experience by collect points and then change it with a gifts, this will increase demands on the company products and make it more famous by providing mobile application in which the customer will be able to review his orders and the points related to, scan the barcode to add new orders, check points and choose gifts, and a website to manage this system where shop manager control both products and gifts, generate a barcode for each order made by the costumer .The system also contains a relational database containing users in both customers and shop managers, products, gifts and shops.



### ***1.3. Glossary***

<b>Term</b>	<b>Definition</b>
Customer	Any person has account to collect points by buying the products.
Shop manager	Employee who manage the shop.
User	Shop manager or customer.
Order	Group of products bought by the customer.
Points	for each product sailed there is number of free point later the customer can change it with another product or gift.
Barcode	machine readable representation of numerals and characters a barcode consists of bars and spaces of varying width that can be read by camera scanning.
bill	contains paying method and the order date, points and price.
Gift	gift cards including dining ,travel and entertainment
Database	Collection of all the information monitored by this system.

### ***1.4. References***

IEEE. *IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications*. IEEE Computer Society, 1998.

*SOFTWARE ENGINEERING*-Ian Somerville book.

### 1.5. Overview of Document

The next chapter, the Overall Description section, of this document gives an overview of the functionality of the product. It describes the informal requirements and is used to establish a context for the technical requirements specification in the next chapter. The third chapter, Requirements Specification section, of this document is written primarily for the developers and describes in technical terms the details of the functionality of the product.

Both sections of the document describe the same software product in its entirety, but are intended for different audiences and thus use different language.

## 2.0. Overall Description

### 2.1 System Environment

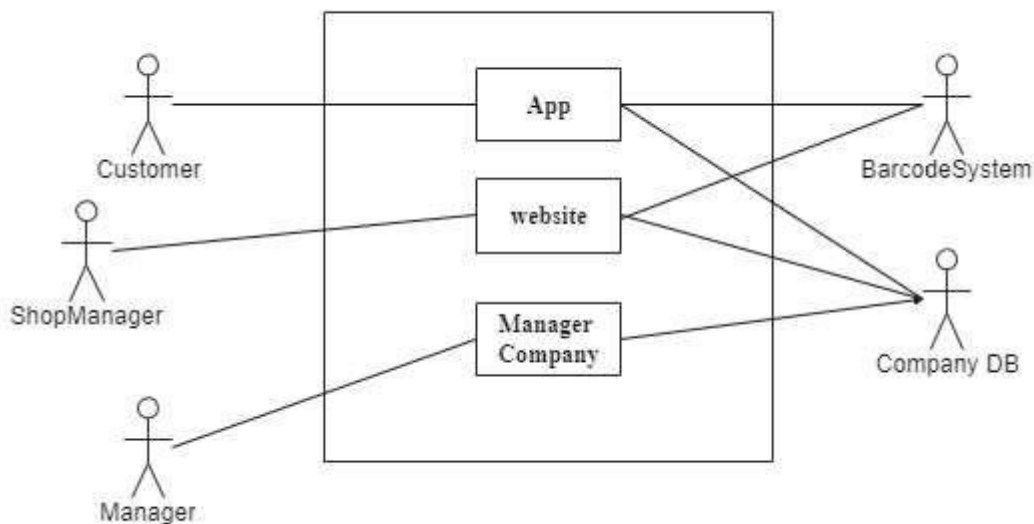


Figure 1 - System Environment

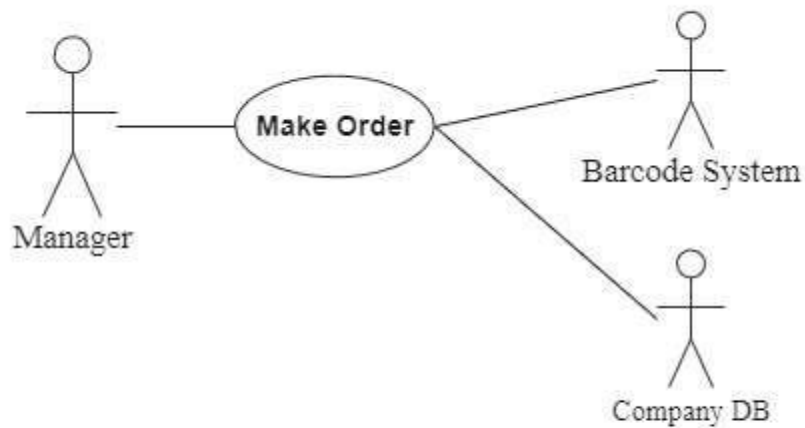
paying by points system has three active actors, the customer, shop manager and admin manager and three component system, customer communication with the system through the application, manager and shop manager assess directly to the website.

## 2.2 Functional Requirements Specification

### 2.2.1 Shop Manager Use Case

Use case: **make order**

**Diagram:**



#### **Brief Description**

Shop manager make order includes products that selected by customer

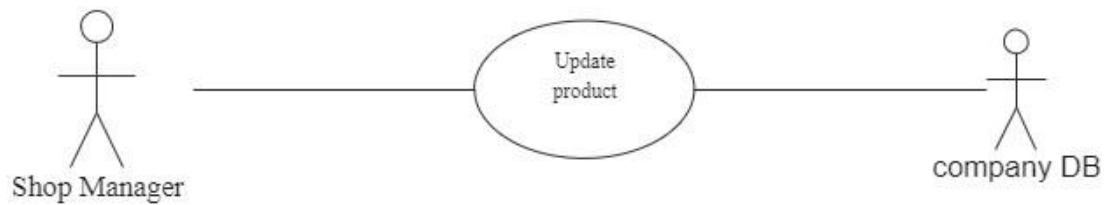
#### **Initial Step-By-Step Description**

1. Shop manager select to add new order
2. shop manger selects the products which the customer has bought.
3. system process the content of the order and generate a barcode, and view it on the shop manager page.
4. system add the order to the database and update the entry related with.



Use case: **update products info**

**Diagram:**



**Brief Description** shop manager enters new product or update information about one that exists.

**Initial Step-By-Step Description**

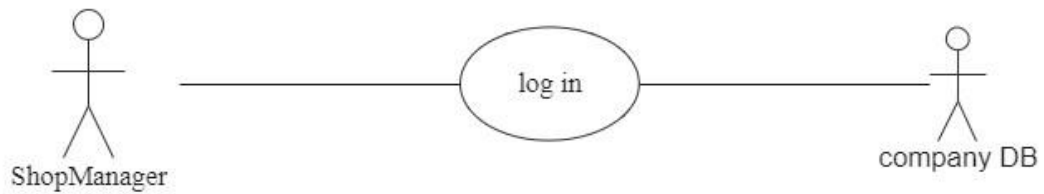
Before this use case can be initiated, the shop manager accessed his main page.

1. system present a choice of products.
2. System presents a list of products and shop manager selects one to update or selects add new product
3. System shows fields of product's details and the shop manager can fill the blank fields to add new or modifies information in field for existing product
4. shop manager selects to save the changes he did.
5. system save the information in data base and return the shop manager to the home page.



Use case: **login Shop Manager**

**Diagram:**



**Brief Description**

Shop manager login to his page on website.

**Initial Step-By-Step Description**

Shop manager open website and login with account that created by manager 1.

Login interface appears with fields of username and password

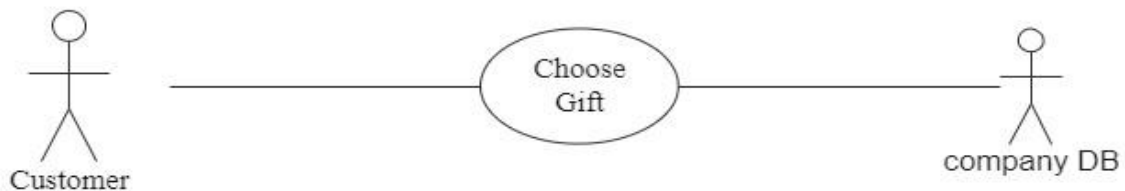
2.Shop manager enters his personal information.

3.system check the shop manager username and password if they are correct.

4. System enables the shop manager to log in to his main page

### 2.2.2 Customer Use Case

Use case: **choose a gift Diagram:**



**Brief Description** customer then can change his points with affordable gift from the gifts list in the app.

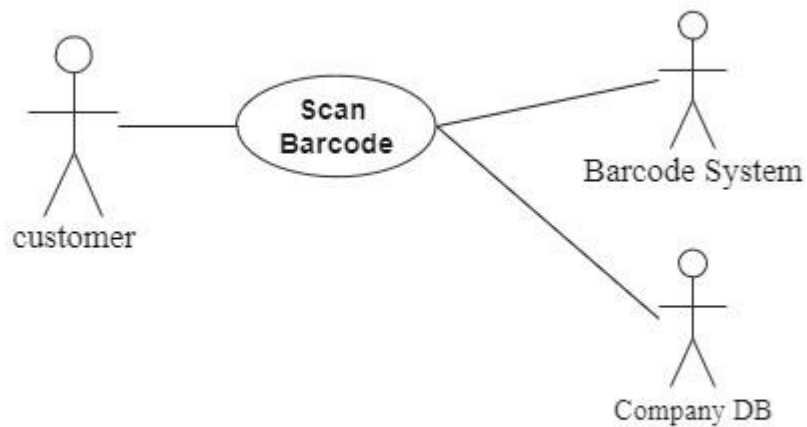
#### **Initial Step-By-Step Description**

Before this use case can be initiated, customer already log in to the application.

1. customer select get gift button from the application.
2. system present the list of gifts.
3. customer choose his gift.
4. system check the customer points and subtract the gift value from his points.
5. system send a message to the company include the customer information.
6. customer then go and get his gift.

Use case: **scan barcode**

**Diagram:**



### **Brief Description**

Customer scans barcode of the order he want to buy

### **Initial Step-By-Step Description**

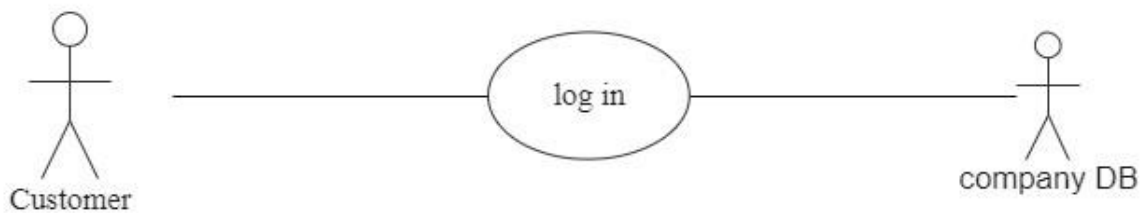
Before this use case can be initiated, customer already log in to the application.

1. customer selects new order from the app and the camera of mobile opens waiting for a barcode to be scanned.
2. Barcode system enables the customer to scan the barcode from shop manager web page.
3. system add points according to the order and update customer point information in data base.

May27/5/2021

Use case: **login Customer**

**Diagram:**



**Brief Description**

Customer log in to the application

**Initial Step-By-Step Description**

Customer open the application and login with account that created by manager 1.

Login interface appears with fields of username and password

2. customer enters his personal information.
3. system check the customer username and password if they are correct.
4. System enables the customer to log in to his interface

Use case: **add/update shops**

**Diagram:**



**Brief Description** manger add new shop to the database or update on it.

**Initial Step-By-Step Description**

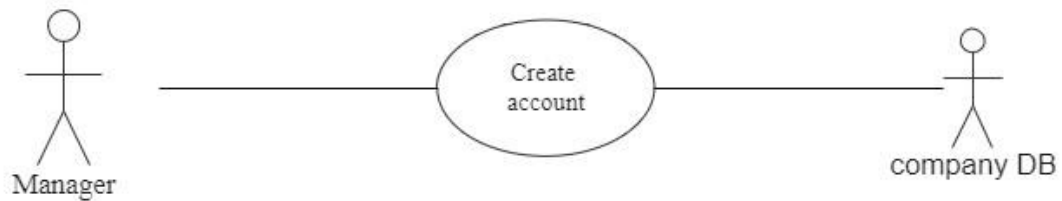
Before this use case can be initiated, the shop manager accessed the administration main page

1. The manger selects to Add/Update shop.
2. The system presents a choice of adding or updating.
3. The manger chooses to add or to update.
4. The manger is updating a shop, the system presents a list of shops to choose from and presents a grid filling in with the information; if the admin chooses to add, the system presents a blank grid to fill it with new shop info



Use case: **Create Account**

**Diagram:**



**Brief Description:**

manager add new Customer/Shop Manager to the system

**Initial Step-By-Step Description**

Before this use case can be initiated, the shop manager accessed the administration main page

- 1- manager choose to add Customer/Shop Manager
- 2-the system present a blank field for Customer/Shop Manager's information
- 3-manager fill it with information and submit/save the form
- 4-The system verifies the information and returns the manager to the main Page

Use case: **Update Customer/Shop Manager Diagram:**



**Brief Description:**

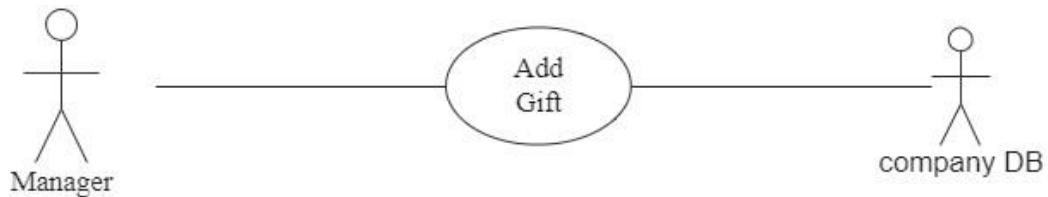
**manager update Customer/Shop Manager to the database**

**step by step Description:**

Before this use case can be initiated, the manager accessed his main page

- 1- manager choose to update Customer/Shop Manager
- 2- System shows fields of Customer/Shop Manager's information and the shop manager can fill the blank fields to modifies information in field for existing Customer/Shop Manager
- 3-manager fill it with information and submit/save the form
- 4-The system verifies the information and returns the manager to the main Page

Use case: **add gifts** **Diagram:**



**Brief Description** manager enters new gift.

**Initial Step-By-Step Description**

Before this use case can be initiated, the manager accessed his main page.

1. system present a choice of gifts.
2. System presents a list of gifts and manager selects add new gift
3. System shows fields of gift's details and the manager fills the blank fields to add
4. shop manager selects to save the changes he did.
5. system save the information in data base and return the shop manager to the home page.

**2.3 User Characteristics**

*No certain characteristics required.*

## ***2.4 Non-Functional Requirements***

The Manager will run on the Manager's PC and will contain an Access database.

The shop Manager will run on the shop Manager's PC and will contain an Access database.

The customer will run on the customer's mobile and will contain an Access database. The system must run on android and iOS and run on windows, Linux and mac and users can use it any time

The system must safe, easy to use and very fast

## **3.0. Requirements Specification**

***3.1 External Interface Requirements*** There are two links to external systems.

The first one to Company database to verify information and add/update information Add, update, login and create account use cases require access database to add or to check information like password and user name or to get list of existing information like shops ,products, gifts and so one..

The second link is to barcode system that we need when customer scan barcode and when shop manager generate barcode for order he add in make order use case

**3.2 Functional Requirements****3.2.1 Make Order**

<b>Use Case Name</b>	make order
<b>Trigger</b>	the shop manager selects to make order.
<b>Precondition</b>	shop manager has accessed his page main screen.
<b>Basic Path</b>	<ol style="list-style-type: none"> <li>1. shop manager selects add order</li> <li>2. Shop manager select the pay method if it by money or points</li> <li>3.if the pay method is by points system check the customer points and subtract the order value from his balance.</li> <li>4.shop manager selects to add product/products that the customer has purchased</li> <li>5.System present a search field and shop manager types product he want</li> <li>6.System add product to order and shop manager select to save order or add new product</li> <li>7.If he selects to save order the system group these products and add order entry in the database after the barcode system has generated barcode for this order</li> <li>8.system shows the order details on the shop manager screen</li> </ol>
<b>Alternative Paths</b>	<p>In step 2, the pay method with money no update on points is done.</p> <p>In step 3, if there are no sufficient points System show message, you do not have points to this order</p> <p>In step 6, if shop manager selects to add new product System present a search field again and shop manager types product he want and continue to finish all products and save order</p>
<b>Post condition</b>	new order in customer account
<b>Exception Paths</b>	none
<b>Other</b>	The order details includes products in this order , barcode , price , customer who buy this and points.

### 3.2.2 Update products info

<b>Use Case Name</b>	update products info.
<b>Trigger</b>	shop manager select to update existing products
<b>Precondition</b>	shop manager accessed to his main screen.
<b>Basic Path</b>	<ol style="list-style-type: none"><li>1. shop manager selects product</li><li>2. system present a list to select from.</li><li>3. shop manager select item to update.</li><li>4. The system presents the database information in grid form for modification.</li><li>5. The shop manager updates the information and submits the form</li><li>6. The system checks that required fields are not blank.</li></ol>
<b>Alternative Paths</b>	in step 6, if any required field is blank, the shop manager is instructed to add an entry. No validation for correctness is made.
<b>Post condition</b>	The database has been updated
<b>Exception Paths</b>	if the product is not already in the database, the use case is abandoned. In addition, the shop manager may abandon the operation at any time.
<b>Other</b>	None..

### 3.2.3 Login Shop Manager

<b>Use Case Name</b>	Login Shop Manager
<b>Trigger</b>	shop manager login to check his role and can do his actions
<b>Precondition</b>	shop manager open website
<b>Basic Path</b>	<ol style="list-style-type: none"><li>1. Login page appears with username and password fields</li><li>2. Shop manager enters his personal information</li><li>3. system check the shop manager username and password if they are correct.</li><li>4. shop manager can access his main page</li></ol>
<b>Alternative Paths</b>	In step 1, if shop manager login for the first time system enable him to change his password after check his username so he fills a two fields of new password and confirm it. in step 2, if username is not found in data base the system show message tell user who try log in that he does not have account. in step 2, if username is found in data base but the password is not correct the system show message tell shop manager to try again with correct password and give him three attempts to login in step 2, shop manager can select to forget password and system enable him to reset it. in step 2,if shop manager finish his attempts with wrong password the system block him for three hours
<b>Post condition</b>	Any changes on password updates in data base

<b>Exception Paths</b>	The shop manger may abandon the operation at any time
<b>Other</b>	The main page contains shop of shop manager and links to his products and orders

### 3.2.4 Choose a Gift

<b>Use Case Name</b>	Choose a Gift
<b>Trigger</b>	the customer select to get gift.
<b>Precondition</b>	Customer access the gifts interface in application
<b>Basic Path</b>	<ol style="list-style-type: none"> <li>1. customer chooses his gift and select get it!</li> <li>2. system check the customer points and subtract the gift value from his balance.</li> <li>3. system show a message in the manager page include the customer and gift information for he can take it</li> </ol>
<b>Alternative Paths</b>	In step 2, if there are no sufficient points System show message, you do not have points to this gift
<b>Post condition</b>	the customer pay with points.
<b>Exception Paths</b>	if the gift is not already in the database, the use case is abandoned. In addition, the customer may abandon the operation at any time.
<b>Other</b>	Gifts view contains list of gifts with all details.



### 3.2.5 Scan Barcode

<b>Use Case Name</b>	scan barcode
<b>Trigger</b>	Customer scan barcode of order
<b>Precondition</b>	The customer has accessed the orders view in application
<b>Basic Path</b>	<ol style="list-style-type: none"><li>1. customer selects new order and the camera of mobile opens waiting for a barcode to be scanned.</li><li>2. Barcode system enables the customer to scan the barcode from shop manager web page.</li><li>3. system add points according to the order and update customer point information in data base</li></ol>
<b>Alternative Paths</b>	None..
<b>Post condition</b>	The points must added to customer and this change updated in database .
<b>Exception Paths</b>	The customer may abandon the operation at any time
<b>Other</b>	None..

### 3.2.6 Login Customer

<b>Use Case Name</b>	Login Customer
<b>Trigger</b>	customer login to check his role and can do his actions
<b>Precondition</b>	Customer open application
<b>Basic Path</b>	<ol style="list-style-type: none"><li>1. Login page appears with username and password fields</li><li>2. customer enters his personal information</li><li>3. system check the customer's username and password if they are correct.</li><li>4. customer can access his main interface</li></ol>

<b>Alternative Paths</b>	In step 1, if customer login for the first time system enable him to change his password after check his username so he fills a two fields of new password and confirm it. in step 2, if username is not found in data base the system show message tell user who try log in that he does not have account. in step 2, if username is found in data base but the password is not correct the system show message tell customer to try again with correct password and give him three attempts to login in step 2, customer can select to forget password and system enable him to reset it. in step 2,if customer finish his attempts with wrong password the system block him for three hours
<b>Post condition</b>	Any changes on password updates in data base
<b>Exception Paths</b>	The shop manger may abandon the operation at any time
<b>Other</b>	The mobile interface contains buttons to show gifts, products, shops, orders, points and a message with customer id.

### 3.2.7 Add Shop

<b>Use Case Name</b>	add shop
<b>Trigger</b>	Manager selects to add a new customer to the database.
<b>Precondition</b>	The manger has accessed the administration page main screen.

<b>Basic Path</b>	<ol style="list-style-type: none"> <li>1. The system presents a blank field to enter the shop information.</li> <li>2. The manger enters the information and submits the form</li> <li>3. The system checks that the shop manager information and location fields are not blank and updates the database.</li> </ol>
<b>Alternative Paths</b>	If in step 2, either field is blank, the Manager is instructed to add an entry. No validation for correctness is made.
<b>Post condition</b>	The shop has been added to the database.
<b>Exception Paths</b>	The manger may abandon the operation at any time
<b>Other</b>	The shop information includes the name, phone number and location.

### 3.2.8 Update Shop

<b>Use Case Name</b>	update shop
<b>Trigger</b>	the manager select to update a shop and the shop is already in the database.

<b>Precondition</b>	The manger has accessed the administration page main screen.
<b>Basic Path</b>	<ol style="list-style-type: none"> <li>1. the manger selects to update shop list.</li> <li>2. the system presents a list of shops in the database.</li> <li>3. the admin select shop to update.</li> <li>4. The system presents the database information in grid form for modification.</li> <li>5. the admin updates the information and submits the form.</li> <li>6. the system cheeks that required fields are not blank.</li> </ol>
<b>Alternative Paths</b>	In step 5, if any required field is blank, the manager is instructed to add an entry. No validation for correctness is made.
<b>Post condition</b>	none
<b>Exception Paths</b>	if the shop is not already in the database, the use case is abandoned. In addition, the manager may abandon the operation at any time.
<b>Other</b>	none

### 3.2.9 Create Account

<b>Use Case Name</b>	Create account.
----------------------	-----------------

<b>Trigger</b>	manager selects to add a new customer or shop manager to the database.
<b>Precondition</b>	The manager accessed his page main screen.
<b>Basic Path</b>	<ol style="list-style-type: none"> <li>1. manager choose to add customer or shop manager</li> <li>2. if he adds customer The system presents a blank grid to enter the customer information</li> <li>3. The manager enters the information and submits the form</li> <li>4. The system checks that the requires fields are not blank and updates the database.</li> </ol>
<b>Alternative Paths</b>	<p>In step 1, if manager choose to add shop manager, system presents a blank grid to enter the shop manager information and search field to add the shop of this shop manager.</p> <p>in step 3, either field is blank, the manager is instructed to add an entry. No validation for correctness is made.</p>
<b>Post condition</b>	The customer/Shop Manager has been added to the database.
<b>Exception Paths</b>	The Manager may abandon the operation at any time.
<b>Other</b>	<p>The customer information includes full name, username, city, password, confirm password, age, birthday date, gender, phone number and email address.</p> <p>And shop manager information includes full name, salary, email address,</p>
	password, confirm password, username and shop he manage.

### 3.2.10 Use case add product

<b>Use Case Name</b>	add product
<b>Trigger</b>	shop manager selects to add a new product to the database.
<b>Precondition</b>	The shop manager has accessed his page main screen.
<b>Basic Path</b>	<ol style="list-style-type: none"><li>1. The system presents a blank field to enter the product information.</li><li>2. The shop manger enters the information and submits the form</li><li>3. The system checks that the required fields are not blank and updates the database.</li></ol>
<b>Alternative Paths</b>	If in step 2, either field is blank, the shop manager is instructed to add an entry. No validation for correctness is made.
<b>Post condition</b>	The product has been added to the database.
<b>Exception Paths</b>	The shop manger may abandon the operation at any time
<b>Other</b>	The product information includes name, price, points, points to buy, manufacturer, type and picture

### 3.2.11 Update customer/Shop Manager

<b>Use Case Name</b>	Update customer/shop Manager
<b>Trigger</b>	manager selects to update an existing customer or shop manager in the database.
<b>Precondition</b>	The manager accessed his page main screen.
<b>Basic Path</b>	<ol style="list-style-type: none"><li>1. manager choose to update customer or shop manager</li><li>2.if he updates customer The system the system presents a list of customers in the database.</li><li>3.the manager select customer to update.</li><li>4.The system presents the database information in grid form for modification.</li><li>5.the admin updates the information and submits the form.</li><li>6.the system checks that required fields are not blank.</li></ol>
<b>Alternative Paths</b>	In step 1, if manager choose to update shop manager, presents a list of shop managers in the database. the manager selects shop manager to update and The system presents the database information in grid form for modification and search field to replace the shop of this shop manager. in step 5, either field is blank, the manager is instructed to add an entry. No validation for correctness is made.
<b>Post condition</b>	The customer/shop manager information has been updated in the database.
<b>Exception Paths</b>	if the shop manager/customer is not already in the database, the use case is abandoned. In addition, the manager may abandon the operation at any time.
<b>Other</b>	None..



### 3.2.12 Add Gift

<b>Use Case Name</b>	add gift
<b>Trigger</b>	manager selects to add a new gift to the database.
<b>Precondition</b>	The manger has accessed the administration page main screen.
<b>Basic Path</b>	<ol style="list-style-type: none"><li>1. The system presents a blank field to enter the gift information.</li><li>2. The manger enters the information and submits the form</li><li>3. The system checks that the gift information fields are not blank and updates the database.</li></ol>
<b>Alternative Paths</b>	If in step 2, either field is blank, the admin is instructed to add an entry. No validation for correctness is made.
<b>Post condition</b>	The gift has been added to the database.
<b>Exception Paths</b>	The manger may abandon the operation at any time
<b>Other</b>	The gift information includes the name, picture and points

### ***3.3 Detailed Non-Functional Requirements:***

#### 3.3.1 availability:

this system must be available in 24 hours permanently so users can use it any time.

3.3.2 security and privacy: the system should make use of encryption to ensure that data is stored securely SO passwords should be stored as SHA1 hashes.

the users can change their password after the first log in and they blocked for 3 hours after 3 attempts of entre false password to protect system The manager's PC in the company will have its own security. Only the manager will have physical access to the machine and the program on it.

#### 3.3.3 performance:

##### 3.3.3.1 processing time:

Login and requesting thumbnails of images should take less than three seconds

##### 3.3.3.2 response time:

Server should respond to client in less than one second 3.3.3.3

##### querying time:

querying the database should take less than one second 3.3.4

#### usability:

This system must be easy to use ,need training for mostly 10 minutes

3.3.5 Portability: must run on android and iOS and on windows

Linux and mac 3.3.6 recovery:

the system must contain one copy of all data that considered worthy of conservation such as users and orders information.

The system should backup data very frequently every hour to avoid any data loss.

