

Informatics College Pokhara



Application Development

CS6004NP

Group Coursework

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Date: 2021-April-30

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1. Introduction

This coursework was a group project which is about developing a web-based application with ASP .net framework. The main theme of this coursework is to develop the web-based application which will support the operations of the company, specifically for the stock management. This project expects us to develop Stock Management System that have features which is used to manage the detail of items, the customer's details and keep records of selling items to the customers. All the data are needed to store in the database.

ASP.NET is a Microsoft-created open-source server-side web application architecture that operates on Windows and was first released in the early 2000s. Web apps, web utilities, and interactive content-driven websites will all be created with ASP.NET. ASP .NET provides best feature when creating a website or program Among the most important advantages are the high speed, low cost, and extensive language support. Other web development platforms must be developed and configured separately. Since ASP.NET is integrated into the familiar Windows server environment, it requires less setup and configuration. Because of ASP.NET's success, finding online tools and talented developers is easy (Wiseley, 2018).

The programming language we used for this project is C# programming language. C# programming language is a modern, easy and versatile language. This language is mainly used to develop desktop application, web application and also game in unity. C# is a platform-independent programming language. You can create .NET programs that run on Windows, Linux, and Mac computers. Cloud and container deployments are also possible for C# applications (Chand, 2020).

This report describes about the trillionaires stock management system sufficiently to determine the feasibility and usability of the finished system. Trillionaires stock management system is a complete web-based application designed on .Net technology using Visual studio software. The main aim of the project is to develop stock management system model software in which all the information regarding the stock of the company will be presented

Stock management system is the backbone of any business company. With the availability of process driven software applications, stock management has undergone revolutionary changes. This software can be used by retailers, shopkeepers, manufacturing units and other merchants across different businesses.

Those days are gone where shop owner used to manage all their sales and accounts on paper. This job is now performed with these management applications.

The main functions of our stock management system are as follows:

- To store items details into the system.
- To record customer details such as name, number, age, etc.
- To provide user a privilege to get items details with just item name.
- To allow user to sell items to customers.
- To provide user a privilege to remove any items from stock.
- To allow user to sort products and customers on different criteria such as the products not sold in last 31 days, customers who has not bough anything in last 31 days etc.

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2. Background

In today's changing lifestyle computer has become the most essential part of life. Most of the works being performed by the humans is now done by the computer. The computer is being used in each and every field nowadays. So to make easy for business organization, trillionaires stock management system is developed. With the help of this system any organization can be more efficient and accurate in storing their products as well as customer's data. The system is made very attractive and user-friendly so that owners of any generation can use it comfortably. It also provides many unique facilities for the user which can be great support for the development of the company.

Advantages of stock management system:

1. Fast data processing
2. Less paperwork
3. Time saving
4. More accurate
5. User friendly environment
6. Easy to keep records

Scope of the stock management system:

1. To provide user, efficient working environment.
2. To help in tracking records.
3. To provide high level security for data leaking as only admin can access the database and no changes can be made until it verifies the user login id and password.

3. User Manual

User manual to run the Trillionaires Stock Management System is described in the simplest language below:

3.1 Login

To login into the system, the end user must provide their username and password in the respective text boxes and click on “Login” button.

Trillionaires Stock Management System

Username

Password

[LabelMessage]

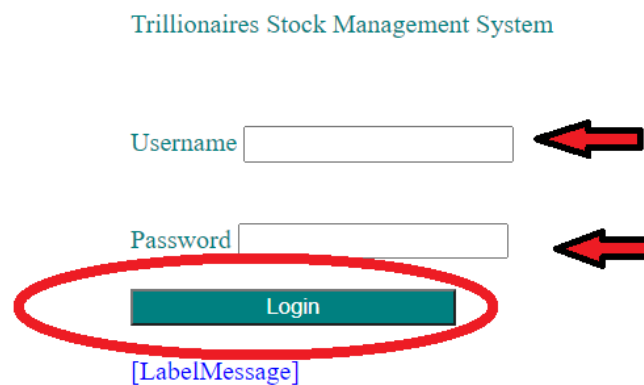


Figure 1: Login user manual

3.2 Navigate to different screens

localhost:44344/Admin/viewOldItems.aspx

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Trillionaires Stock Management System

List of Old items										
	Item ID	Category ID	Name	Description	Price	Purchase date	Manufacture date	Expiry date	Quantity	
1	Admin									
2	Add Category									
3	Add Item									
4	Manage Customer									
5	Manage User									
6	View Category items									
7	View Items Quantity									
8	Item Sales									
9	View Limited Items									
10	List of old items									
11	Purchase									
12	Customer Report									
13	Out Of Stock									
14	Customer with no purchase									
15	Items not sold in 31 days									
16	Profile									
17	Date wise sales report									
	Log Out									

Edit Delete	20	100	Tomato	Fresh Tomato	100	10/10/2016 12:00:00 AM	9/20/2016 12:00:00 AM	2/2/2022 12:00:00 AM	1000	
Edit Delete	21	102	Nike	Nike Air	9899	10/10/2015 12:00:00 AM	1/30/2015 12:00:00 AM	10/10/2030 12:00:00 AM	348	
Edit Delete	22	102	Adidas	Black and white	4500	9/30/2013 12:00:00 AM	8/30/2013 12:00:00 AM	9/30/2030 12:00:00 AM	198	
Edit Delete	23	103	Gucci	Amazing quality	299999	12/30/2016 12:00:00 AM	11/30/2016 12:00:00 AM	1/30/2030 12:00:00 AM	200	
Edit Delete	24	103	LV	Luis Vuiton	399999	10/10/2014 12:00:00 AM	9/10/2014 12:00:00 AM	2/10/2040 12:00:00 AM	150	
Edit Delete	26	101	Dell Laptop	Inspiron 7000 series	105000	10/10/2010 12:00:00 AM	9/10/2010 12:00:00 AM	10/10/2020 12:00:00 AM	8	
Edit Delete	27	101	Iphone	Iphone 4s	25000	12/30/2008 12:00:00 AM	11/30/2008 12:00:00 AM	9/11/2014 12:00:00 AM	7	

Figure 2: Navigate to different screens user manual

After logged in, the end user can navigate to any screens as numbered in the left side of the screen.

1: Add new category.

2: Add new item.

3: Add, update and delete customer details.

4: Only Admin can add, update and delete all users' details. Hence if end user is admin, then only "Manage User" button will be visible.

5: View category wise items.

6: View quantity of items.

7: For any specific customer, add any items to cart for sales purpose.

8: View items with stock quantity less than 10.

9: List of old items which were purchased by company before 2017/01/02.

10: Make payment for items which were added to cart.

11: Report of specific customer about their purchase details.

12: Out of stock items which can be viewed according to name (ascending order), stock date (descending order) and stock quantity (high to low).

13: Customer with no purchase in the last 31 days.

14: Items which were unsold in the last 31 days.

15: Change password of end user.

16: Date wise sales report.

17: Log out.

3.3 Add category

To add new category, enter category name and description in their respective text boxes and click on “ADD” button.

The screenshot shows a web application interface for 'Trillionaires Stock Management System'. On the left is a vertical sidebar menu with the following items: Admin, Add Category, Add Item, Manage Customer, Manage User, View Category items, View Items Quantity, Item Sales, View Limited Items, List of old items, Purchase, Customer Report, Out Of Stock, and Customer with no purchase. The main content area is titled 'ADD Category' and contains two text input fields: 'Category Name :' and 'Description :'. Both fields have red arrows pointing to them from the right. Below the 'Description :' field is a green 'ADD' button, which is circled in red.

Figure 3: Add category user manual

3.4 Add item

To add new item, enter all item details in their respective text boxes and click on “ADD” button.

The screenshot shows a web application titled "Trillionaires Stock Management System". On the left is a sidebar menu with options: Admin, Add Category, Add Item, Manage Customer, Manage User, View Category items, View Items Quantity, Item Sales, View Limited Items, List of old items, Purchase, Customer Report, Out Of Stock, and Customer with no purchase. The main content area is titled "Add Item" and contains the following form fields:

- Item name :
- Price :
- Purchased date :
- Manufactured date :
- Description :
- Category :
- Expiry date :
- Quantity :

A red circle highlights the "ADD" button at the bottom right of the form. Red arrows point to each of the eight input fields.

Figure 4: Add item user manual

3.5 Manage customer

To add new customer, enter all customer details in their respective text boxes and click on “ADD” button. To update customer details, select a customer on the grid view below and click on “Edit” button and update details. To delete customer details, click on “Delete” button.

Trillionaires Stock Management System

Manage Customer Details

Customer name :

Age :

Address :

Contact number :

Email address :

Member type :

ADD

	Member Number	Name	Age	Address	Contact Number	Email Address	member_type
Edit Delete	1	Mason Mount	22	Matepani-12, Pokhara	9000000000	mason@gmail.com	Regular
Edit Delete	1001	Lampard	48	Mahendra Pool, 11	9111111111	lampard08@gmail.com	Old
Edit Delete	2001	Hello	10	Ranipauwa-11, Pokhara	9822299999	hello@gmail.com	Regular

Figure 5: Manage customer user manual

3.6 Manage user

To add new user, enter all user details in their respective text boxes and click on “ADD” button. To update user details, select a user on the grid view below and click on “Edit” button and update details. To delete user details, click on “Delete” button.

[Note: End user can only manage user details if s/he is admin. If end user is just a normal user, s/he cannot manage user details. Hence, “Manage user” button will only be visible if end user is an admin.]

localhost:44344/Admin/manageUser.aspx

Trillionaires Stock Management System

Manage user details

Add new user:

Full name:

Contact number:

Address:

Gender:

Position:

Email Address:

Username:

Password:

Confirm Password:

New admin account?

ADD

Manage user details:

User ID	Name	Username	Email	Password	Contact	Address	Gender	Position	Is Admin
Edit Delete 1	Kushal Gurung	kushal23	kushal23@gmail.com	kushalgurung	9811111111	Gaundakomukh-13, Pokhara	Male	Manager	1
Edit Delete 2	Roshan Khattri	roshan12	roshan@gmail.com	khattri12	9111111111	Dharan	Male	Receptionist	0
Edit Delete 3	Sita Thapa	sita01	sita01@gmail	thapa01	9000010101	Butwal	Female	Cashier	0
								Staff	

Figure 6: Manage user user manual

3.7 View Category wise items

Select category on drop down list to view category wise items.

localhost:44344/Admin/viewCategoryItems.aspx

Trillionaires Stock Management System

Category Items

Select Category:

List of Items:

Item ID	Category ID	Name	Description	Price	Purchase date	Manufacture date	Expiry date	Quantity
17	101	test item	test description	100	1/10/2021 12:00:00 AM	1/1/2021 12:00:00 AM	4/10/2021 12:00:00 AM	200
18	101	another test	New item	100	10/10/2021 12:00:00 AM	12/12/2019 12:00:00 AM	10/10/2030 12:00:00 AM	230
26	101	Dell Laptop	Inspiron 7000 series	105000	10/10/2010 12:00:00 AM	9/10/2010 12:00:00 AM	10/10/2020 12:00:00 AM	8
27	101	Iphone	Iphone 4s	25000	12/30/2008 12:00:00 AM	11/30/2008 12:00:00 AM	9/11/2014 12:00:00 AM	7

Figure 7: View Category wise items user manual

3.8 View Items Quantity

Select item on drop down list to view it's quantity.

The screenshot shows the 'Trillionaires Stock Management System' interface. On the left is a sidebar menu with the following items: Admin, Add Category, Add Item, Manage Customer, Manage User, View Category items, View Items Quantity (highlighted), Item Sales, View Limited Items, List of old items, Purchase, Customer Report, Out Of Stock, and Customer with no purchase. The main content area has a header 'Items Quantity'. Below the header, there are two input fields: 'Select Item:' with a dropdown menu showing 'Cauliflower' and 'Total Quantity:' with a text input showing '195'. Red arrows point to these fields.

Figure 8: View Items Quantity user manual

3.9 Items Sales

First, select item category on drop down list, then select item. Available quantity and price of that particular item will be displayed. Then, select quantity of item and customer name and click on “Add to cart” button. The details will be stored in the grid view below.

localhost:44344/Admin/itemSales.aspx

b Gmail YouTube Maps

Trillionaires Stock Management System

- Admin
- Add Category
- Add Item
- Manage Customer
- Manage User
- View Category items
- View Items Quantity
- Item Sales
- View Limited Items
- List of old items
- Purchase
- Customer Report
- Out Of Stock
- Customer with no purchase

Item Sales

Select Item Category: Shoes

Select Item : Nike Available Quantity : 348

Select Quantity: 1

Price: 9899

Customer name: Mason Mount

Add to cart

List of cart items:

Cart ID	Member Number	Item ID	Quantity	Line Total	Status
500	1	1	12	100	1
505	2001	20	5	500	1
506	2008	23	4	1199996	1
508	1001	17	1	100	1

Figure 9: Item Sales user manual

3.10 View Limited Items

Click on “View Limited Items” on left side of the screen to view items running out of stock.

localhost:44344/Admin/viewLimitedItem.aspx

ab Gmail YouTube Maps

Trillionaires Stock Management System

- Admin
- Add Category
- Add Item
- Manage Customer
- Manage User
- View Category items
- View Items Quantity
- Item Sales
- View Limited Items
- List of old items
- Purchase
- Customer Report
- Out Of Stock

List of items running out of stock:

Item ID	Category ID	Name	Description	Price	Purchase date	Manufacture date	Expiry date	Quantity
10	102	a	a	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1
12	105	qa	as	12	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1
13	100	as	as	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1
14	103	we	w	12	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	2
15	100	test	test	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	2
26	101	Dell Laptop	Inspiron 7000 series	105000	10/10/2010 12:00:00 AM	9/10/2010 12:00:00 AM	10/10/2020 12:00:00 AM	8
27	101	Iphone	Iphone 4s	25000	12/30/2008 12:00:00 AM	11/30/2008 12:00:00 AM	9/11/2014 12:00:00 AM	7

Figure 10: View Limited Items user manual

3.11 List of Old items

Click on “List of old items” button on the left side of the screen to view list of old items which were purchased by company before 2017/01/02.

localhost:44344/Admin/viewOldItems.aspx

Gmail YouTube Maps

Trillionaires Stock Management System										
List of Old items										
	Item ID	Category ID	Name	Description	Price	Purchase date	Manufacture date	Expiry date	Quantity	
Edit Delete	20	100	Tomato	Fresh Tomato	100	10/10/2016 12:00:00 AM	9/20/2016 12:00:00 AM	2/2/2022 12:00:00 AM	1000	
Edit Delete	21	102	Nike	Nike Air	9899	10/10/2015 12:00:00 AM	1/30/2015 12:00:00 AM	10/10/2030 12:00:00 AM	348	
Edit Delete	22	102	Adidas	Black and white	4500	9/30/2013 12:00:00 AM	8/30/2013 12:00:00 AM	9/30/2030 12:00:00 AM	198	
Edit Delete	23	103	Gucci	Amazing quality	299999	12/30/2016 12:00:00 AM	11/30/2016 12:00:00 AM	1/30/2030 12:00:00 AM	200	
Edit Delete	24	103	LV	Luis Vuiton	399999	10/10/2014 12:00:00 AM	9/10/2014 12:00:00 AM	2/10/2040 12:00:00 AM	150	
Edit Delete	26	101	Dell Laptop	Inspiron 7000 series	105000	10/10/2010 12:00:00 AM	9/10/2010 12:00:00 AM	10/10/2020 12:00:00 AM	8	
Edit Delete	27	101	Iphone	Iphone 4s	25000	12/30/2008 12:00:00 AM	11/30/2008 12:00:00 AM	9/11/2014 12:00:00 AM	7	

Admin
Add Category
Add Item
Manage Customer
Manage User
View Category items
View Items Quantity
Item Sales
View Limited Items
List of old items
Purchase
Customer Report
Out Of Stock
Customer with no purchase

Figure 11: List of Old items user manual

3.12 Purchase

Select customer on drop down list, then the items which were added to cart on Items Sales page for the selected customer will be displayed on the grid view along with total amount. Then, click on “Confirm Payment” button to make payment.

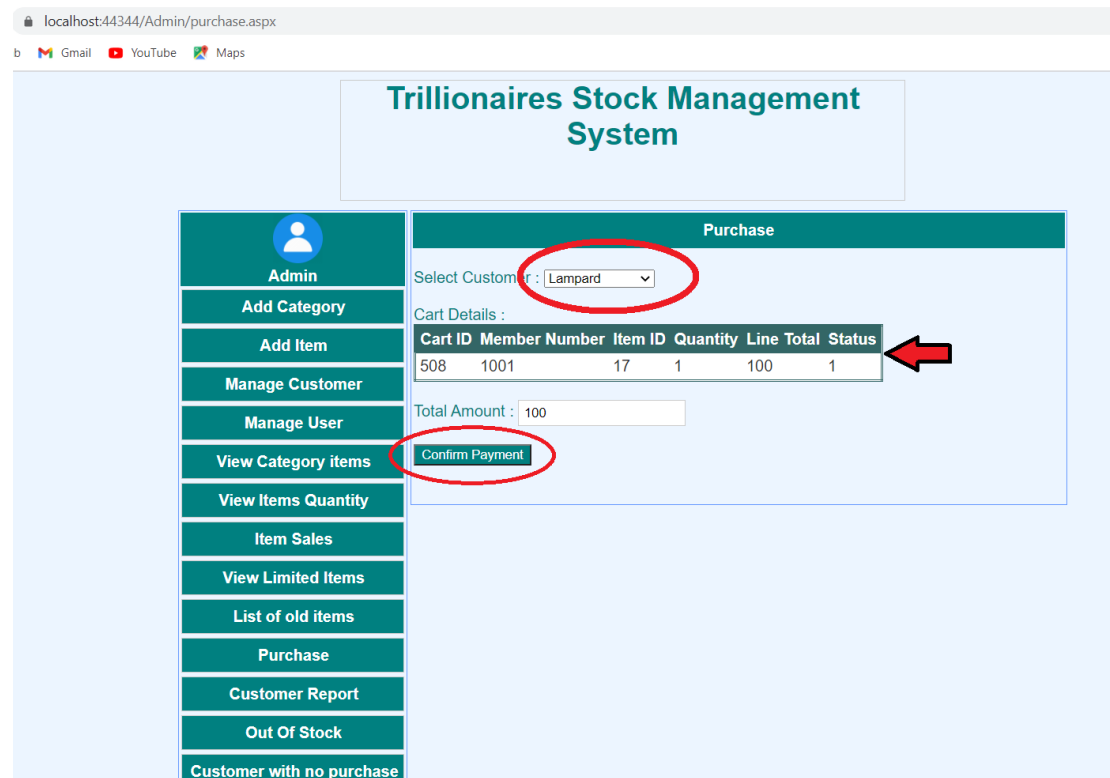


Figure 12: Purchase user manual

3.13 Customer Report

Select customer on customer drop down list to view all of their purchase details.

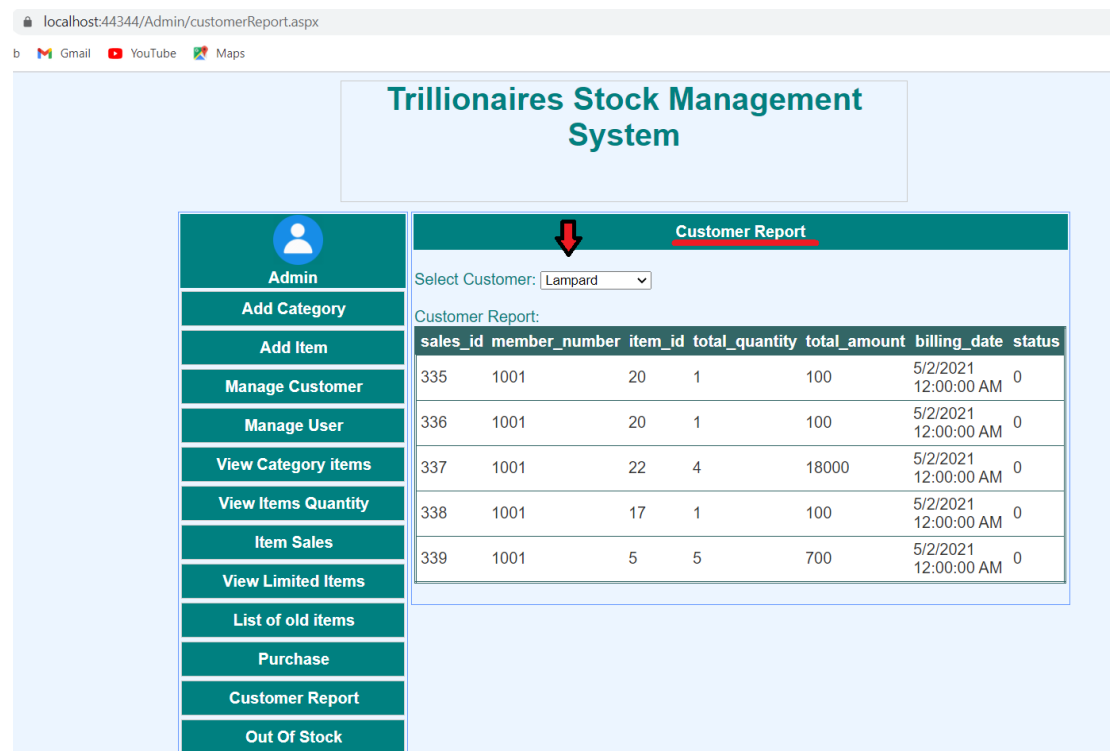


Figure 13: Customer Report user manual

3.14 Out of Stock

Click on:

“Sort by name (Asc)” button: To view out of stock items according to name in ascending order.


“Sort by stock date (Desc)” button: To view out of stock items according to stock date in descending order.

“Sort by stock quantity (High-Low)” button: To view out of stock items according to stock quantity from high to low.

localhost:44344/Admin/outOfStock.aspx

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Trillionaires Stock Management System

-  Admin
- Add Category
- Add Item
- Manage Customer
- Manage User
- View Category items
- View Items Quantity
- Item Sales
- View Limited Items
- List of old items
- Purchase
- Customer Report
- Out Of Stock
- Customer with no purchase

Out of stock items

name	quantity	description	expiry_date
a	1	a	10/11/2018 12:00:00 AM
as	1	as	10/11/2018 12:00:00 AM
Dell Laptop	8	Inspiron 7000 series	10/10/2020 12:00:00 AM
Iphone	7	Iphone 4s	9/11/2014 12:00:00 AM
qa	1	as	10/11/2018 12:00:00 AM
test	2	test	10/11/2018 12:00:00 AM
we	2	w	10/11/2018 12:00:00 AM

Sort by name (Asc)

Sort by stock date (Desc)

Sort by stock quantity (High-Low)

Figure 14: Out of stock user manual

3.15 Customer with no purchase in last 31 days

Click on “Customer with no purchase” button on left side of the screen to view details of customers with no purchase in last 31 days.

localhost:44344/Admin/customerNotBought.aspx

Gmail YouTube Maps

Trillionaires Stock Management System

List of customers with no purchases in last 31 days:						
Member Number	Name	Age	Address	Contact Number	Email Address	Member Type
1	Mason Mount	22	Matepani-12, Pokhara	9000000000	mason@gmail.com	Regular
2001	Hello	10	Ranipauwa-11, Pokhara	9822299999	hello@gmail.com	Regular
2004	test1	12	as	123	q@gmail.com	Regular
2005	haha	12	haha address	9081111111	test@gmail.com	New
2006	s	12	s	s	test@gmail.com	SELECT
2007	haha	12	haha address	9081111111	q@gmail.com	Regular
2008	New Customer	20	Nepal	9876	q@gmail.com	Regular

Admin

Add Category

Add Item

Manage Customer

Manage User

View Category items

View Items Quantity

Item Sales

View Limited Items

List of old items

Purchase

Customer Report

Out Of Stock

Customer with no purchase

Figure 15: Customer with no purchase in last 31 days user manual

3.16 Items not sold in last 31 days

Click on “Items not sold in 31 days” button to view details of items which were unsold in last 31 days.

localhost:44344/Admin/noltemSold.aspx

Tab Gmail YouTube Maps

Trillionaires Stock Management System

List of items unsold in last 31 days:									
Item ID	Category ID	Name	Description	Price	Purchase date	Manufactured date	Expiry date	Quantity	
7	100	a	q	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	200	
8	100	a	q	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	200	
9	110	a	q	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	200	
10	102	a	a	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1	
11	104	s	s	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	2222	
12	105	qa	as	12	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1	
13	100	as	as	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1	
					1/20/2021	10/10/2020	10/11/2018		

Figure 16: Items not sold in last 31 days user manual

3.17 Profile

Select user id and enter old password. Then, enter new password and re-enter new password and click on “Confirm” button. Then, an email will be sent to the email address of end user regarding password change.

localhost:44344/Admin/profile.aspx

Trillionaires Stock Management System

Admin

Add Category

Add Item

Manage Customer

Manage User

View Category items

View Items Quantity

Item Sales

View Limited Items

List of old items

Purchase

Customer Report

Out Of Stock

Customer with no purchase

Profile

User ID : 1

Old Password :

New Password :

Confirm Password :

Confirm

Figure 17: Profile user manual

3.18 Date wise sales report

Click on “Click to select date” button, then select a date in calendar. Sales report of the selected date will be displayed in grid view.

localhost:44344/Admin/dateWiseReport.aspx

Trillionaires Stock Management System

Admin

Add Category

Add Item

Manage Customer

Manage User

View Category items

View Items Quantity

Item Sales

View Limited Items

List of old items

Purchase

Customer Report

Out Of Stock

Customer with no purchase

Date wise sales report

Date : Click to select date

May 2021

5/2/2021

Sales ID	Member Number	Item ID	Total Quantity	Total Amount	Billing date	Status
330	2002	18	1	100	5/2/2021 12:00:00 AM	0
331	2002	22	4	18000	5/2/2021 12:00:00 AM	0
332	2002	18	1	100	5/2/2021 12:00:00 AM	0
333	2002	22	4	18000	5/2/2021 12:00:00 AM	0
334	2002	1	10	700	5/2/2021 12:00:00 AM	0

Figure 18: Date wise sales report user manual

3.19 Log Out

Click on “Log Out” button on left side of the screen to log out of the system.

localhost:44344/Admin/viewOldItems.aspx

ab Gmail YouTube Maps

Trillionaires Stock Management System

- Admin
- Add Category
- Add Item
- Manage Customer
- Manage User
- View Category items
- View Items Quantity
- Item Sales
- View Limited Items
- List of old items
- Purchase
- Customer Report
- Out Of Stock
- Customer with no purchase
- Items not sold in 31 days
- Profile
- Date wise sales report
- Log Out**

List of Old items									
	Item ID	Category ID	Name	Description	Price	Purchase date	Manufacture date	Expiry date	Quantity
Edit Delete	20	100	Tomato	Fresh Tomato	100	10/10/2016 12:00:00 AM	9/20/2016 12:00:00 AM	2/2/2022 12:00:00 AM	1000
Edit Delete	21	102	Nike	Nike Air	9899	10/10/2015 12:00:00 AM	1/30/2015 12:00:00 AM	10/10/2030 12:00:00 AM	348
Edit Delete	22	102	Adidas	Black and white	4500	9/30/2013 12:00:00 AM	8/30/2013 12:00:00 AM	9/30/2030 12:00:00 AM	198
Edit Delete	23	103	Gucci	Amazing quality	299999	12/30/2016 12:00:00 AM	11/30/2016 12:00:00 AM	1/30/2030 12:00:00 AM	200
Edit Delete	24	103	LV	Luis Vuiton	399999	10/10/2014 12:00:00 AM	9/10/2014 12:00:00 AM	2/10/2040 12:00:00 AM	150
Edit Delete	26	101	Dell Laptop	Inspiron 7000 series	105000	10/10/2010 12:00:00 AM	9/10/2010 12:00:00 AM	10/10/2020 12:00:00 AM	8
Edit Delete	27	101	Iphone	Iphone 4s	25000	12/30/2008 12:00:00 AM	11/30/2008 12:00:00 AM	9/11/2014 12:00:00 AM	7

Figure 19: Log Out user manual

4. System Architecture

System architecture is a representation of a system that people use to abstract the overall outline of a software system and create limits, relationships, and boundaries between components. It offers a comprehensive view of the virtual system's physical implementation and describes roles of different users (Freeman, 2021).

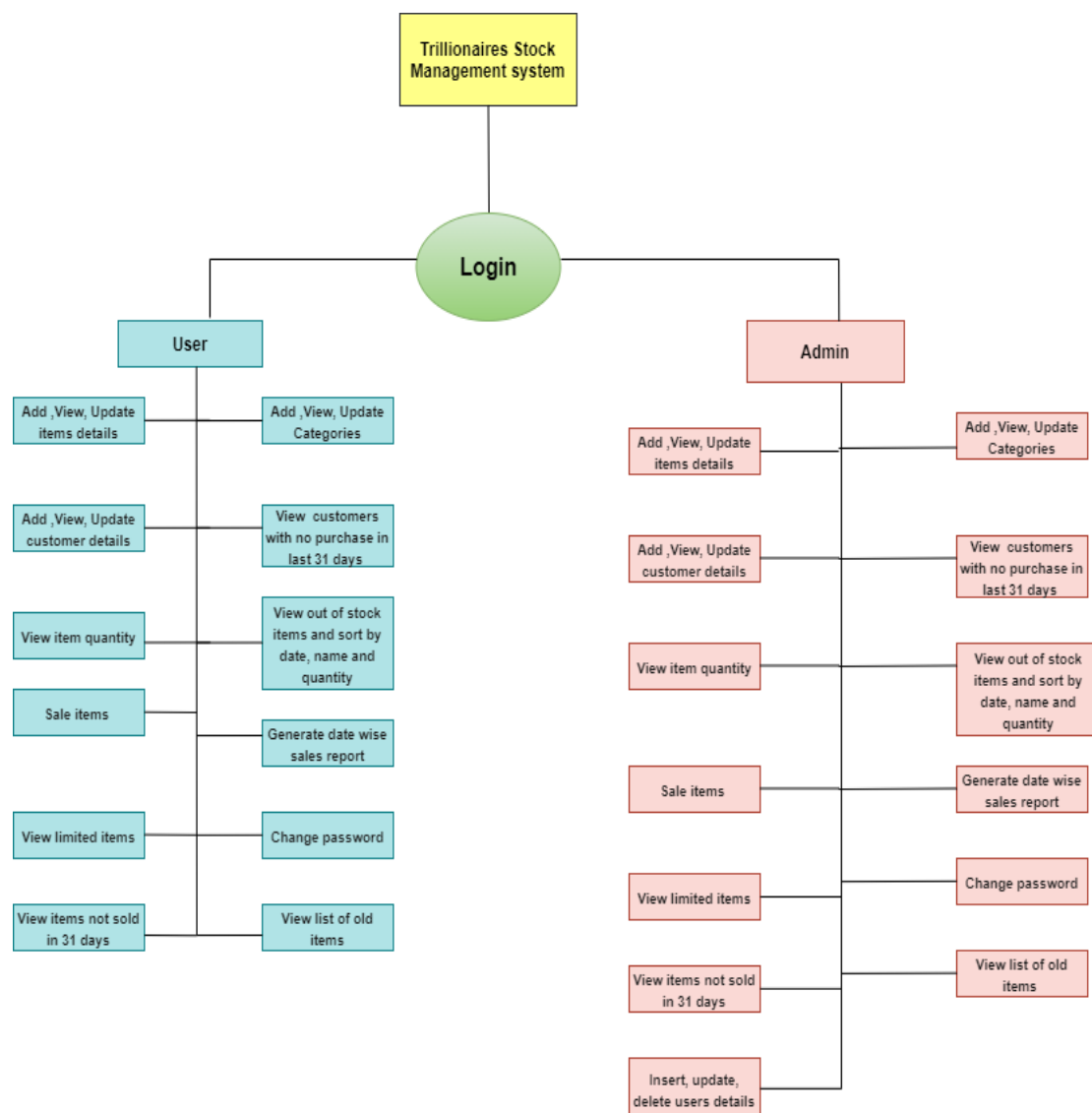


Figure 20: System Architecture

5. Use case:

A use case diagram is a graphical depiction of a user's possible interactions with a system. A use case diagram shows various use cases and different types of users the system has and will often be accompanied by other types of diagrams as well (Contributor, 2020). All the possible interactions of user in trillionaire stock management system are shown below:

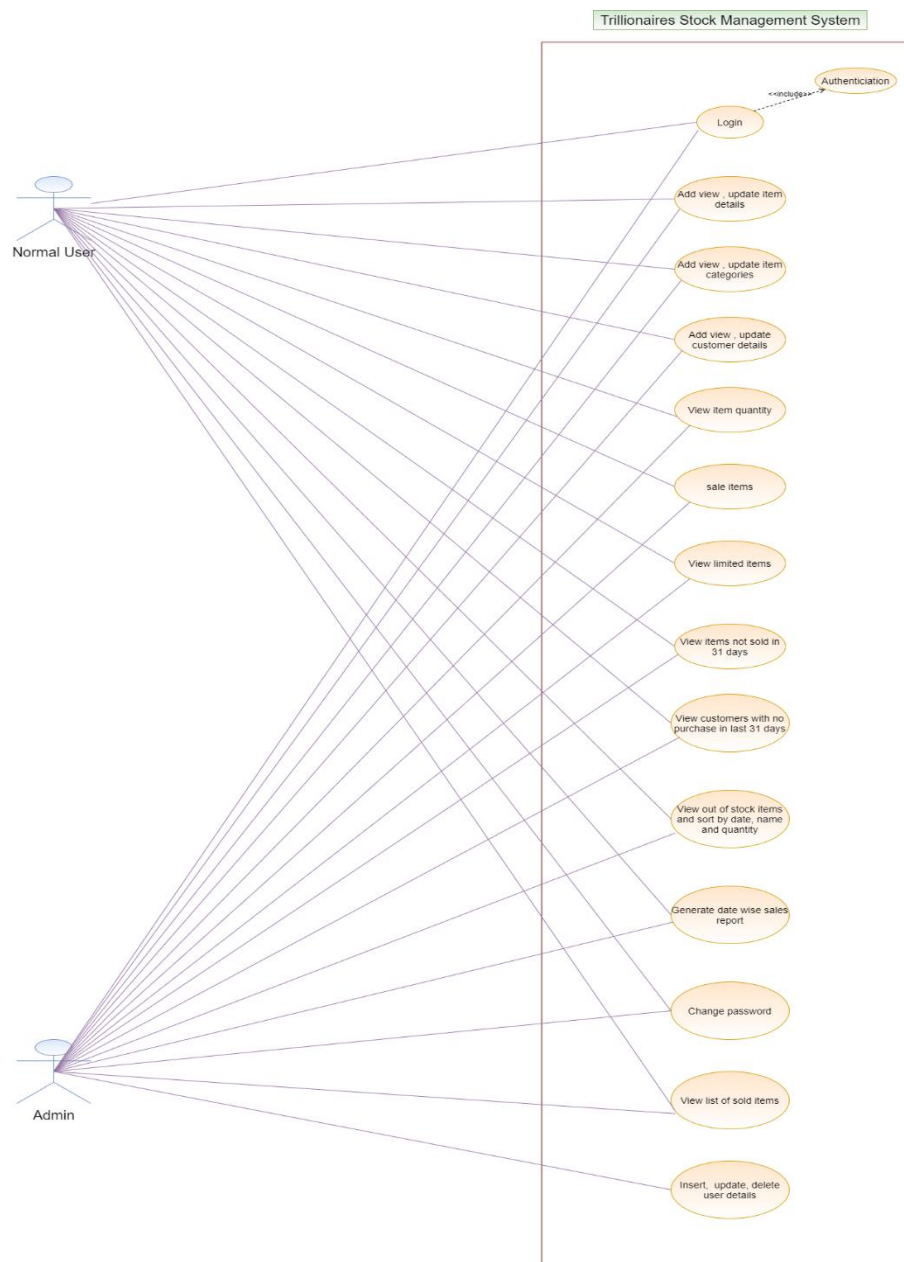


Figure 21: Use case diagram

6. Class Diagram

A class diagram is a type of diagram that describes and provides the description and configuration of a system in terms of classes, properties, and procedures, as well as the relationships between various classes. It is part of the unified modeling language (UML) (techopedia, 2013).

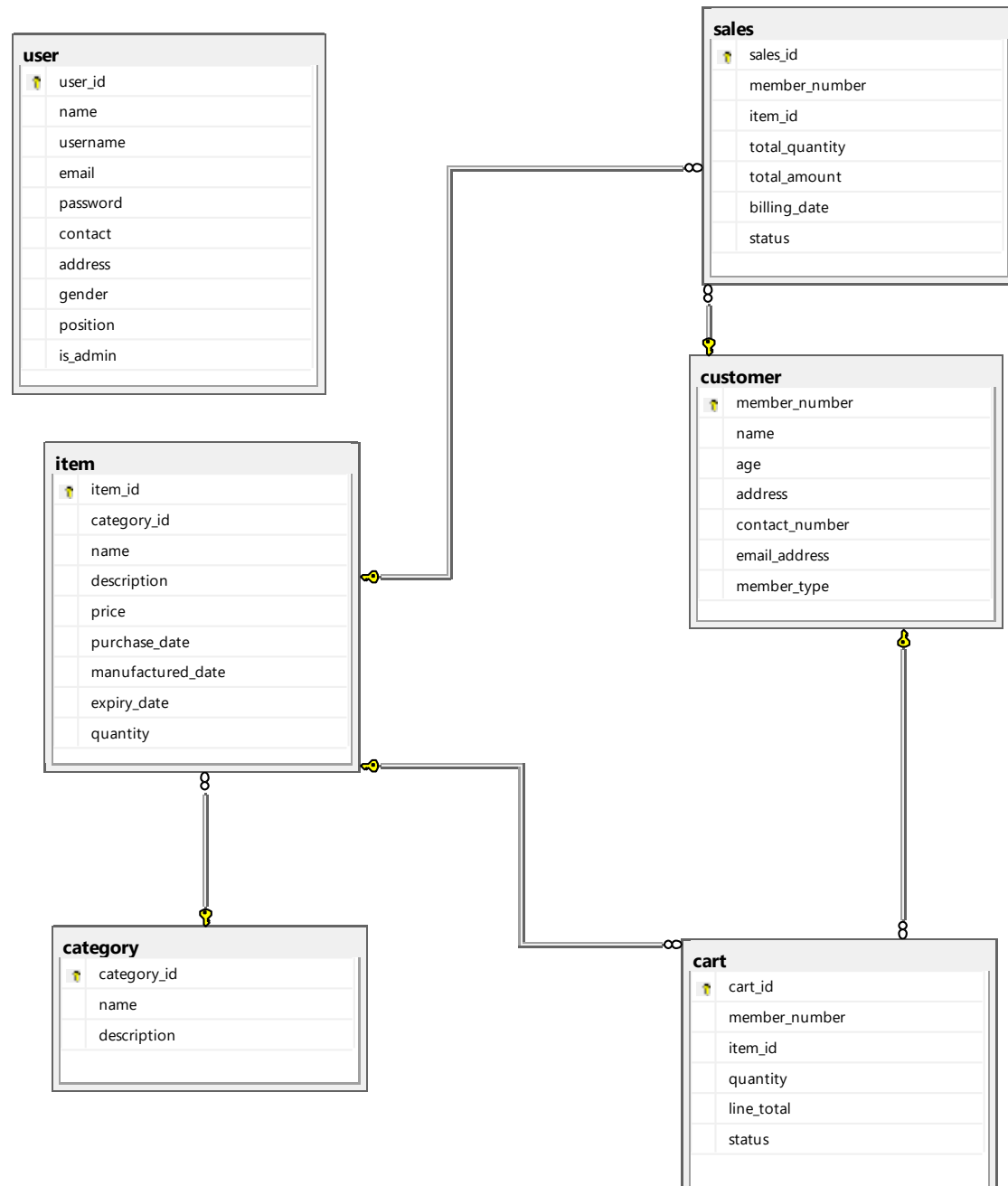


Figure 22: Class Diagram

7. Data Dictionary

Data dictionary means the set of information's describing the contents, format and structure of a database and the relationship between its elements used to control access to and manipulate of the database. It is very important such as what is in the database, who is allowed to access it, where is the database physically stored etc. the users of the database normally don't interreact with the data dictionary. It is only handled by the database administrators.

7.1 Data dictionary of category table

Attributes	Data Type	Field Size	Constraints	Attribute example
Category_id	Int	11	Primary Key	100
Name	Nvarchar	100	Null	Mobile
Description	Nvarchar	100	Null	Mobile products

Table 1: Data dictionary of category table

7.2 Data dictionary of customer table

Attributes	Data Type	Field Size	Constraints	Attribute example
Member_number	Int	11	Primary Key	1001
Name	Nvarchar	100	Null	Mason Mount
Age	Int	11	Null	22
Address	Nvarchar	100	Null	Matepani-12, Pokhara
Contact_number	Nvarchar	10	Null	9000000000
Email_address	Nvarchar	100	Null	mason@gmail.com
Member_type	Nvarchar	10	Null	Regular

Table 2: Data dictionary of customer table

7.3 Data dictionary of item table

Attributes	Data Type	Field Size	Constraints	Attribute example
Item_id	Int	11	Primary key	1
Category_id	Int	11	Foreign key referenced from category_id attribute of category table.	100
Name	Nvarchar	100	Null	Brinjal
description	Nvarchar	100	Null	Yummy brinjal
Price	Int	11	Null	70
Purchase_date	Date		Null	2021-04-17
Manufactured_date	Date		Null	2021-04-17
Expiry_date	Date		Null	2021-06-17
Quantity	Int	11	Null	290

Table 3: Data dictionary of item table

7.4 Data dictionary of sales table

Attributes	Data Type	Field Size	Constraints	Attribute example
sales_id	Int	11	Primary key	330
Member_number	Int	11	Foreign key referenced from member_number attribute of customer table.	2002
Item_id	Int	11	Foreign key referenced from	18

			item_id attribute of item table.	
Total_quantity	Int	11	Null	1
Total_amount	Int	11	Null	100
billing_date	Date		Null	2021-04-03
Status	Tinyint	4	Null	0

Table 4: Data dictionary of sales table

7.5 Data dictionary of user table

Attributes	Data Type	Field Size	Constraints	Attribute example
User_id	Int	11	Primary key	1
Name	Nvarchar	50	Null	Kushal Gurung
username	Nvarchar	50	Null	Kushal23
Email	Nvarchar	50	Null	Kushal23@gmail.com
Password	Nvarchar	50	Null	Gurung23
Contact	Nvarchar	50	Null	9811111111
Address	Nvarchar	50	Null	Gaundakomukh-13, Pokhara
Gender	Nvarchar	50	Null	Male
Position	Nvarchar	50	Null	Manager
Is_admin	Tinyint	4	Null	1

Table 5: Data dictionary of user table

7.6 Data dictionary of cart table

Attributes	Data Type	Field Size	Constraints	Attribute example
cart_id	Int	11	Primary key	504
Member_number	Int	11	Foreign key referenced from member_number attribute of customer table.	1001
Item_id	Int	11	Foreign key referenced from item_id attribute of item table.	22
Quantity	Int	11	Null	4
Line_total	Int	11	Null	18000
Status	Tinyint	4	Null	0

Table 6: Data dictionary of cart table

8. Classes, Properties and methods

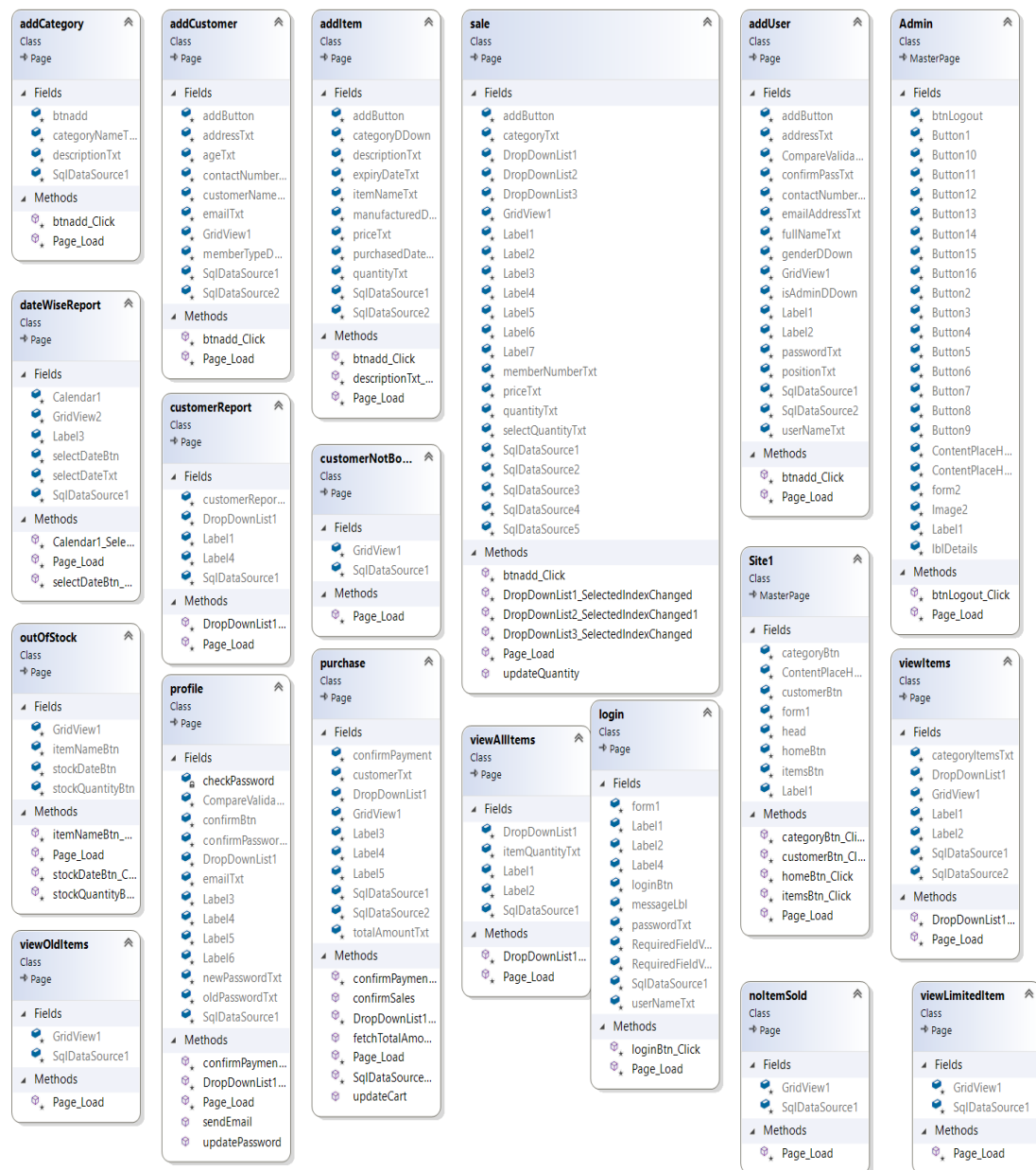


Figure 23: Classes, Properties and methods

8.1 Description of classes:

- ❖ **addCategory:** This class is responsible for adding new categories.
- ❖ **addItem:** This class is responsible for adding new items.
- ❖ **Admin:** This class is the site master which includes design of the system as well as buttons to navigate to different screens.
- ❖ **customerNotBought:** This class is responsible to display list of customers who haven't purchased any item in the last 31 days.

- ❖ **customerReport:** This class is responsible to display purchase details of customers.
- ❖ **dateWiseReport:** This class is responsible to display date wise sales report.
- ❖ **itemSales:** This class is responsible to help user and admin add items to cart for customers.
- ❖ **manageCustomer:** This class is responsible for helping user and admin to manage customer details (add, update and delete).
- ❖ **manageUser:** This class is responsible for helping only admin to manage user details (add, update and delete).
- ❖ **noItemSold:** This class is responsible to display list of items which were unsold in last 31 days.
- ❖ **outOfStock:** This class is responsible to display list of items which are running out of stock. End user will be able to view details based on name (ascending order), stock date (descending order) and stock quantity (high to low order).
- ❖ **profile:** This class is responsible for allowing user and admin to change their password.
- ❖ **purchase:** This class is responsible for allowing user and admin to make payment of customer.
- ❖ **viewCategoryItems:** This class is responsible to display items based on categories.
- ❖ **viewItemsQuantity:** This class is responsible to display quantity of selected items.
- ❖ **viewLimitedItem:** This class is the main screen that will be displayed after end user login to the system. It displays list of items whose quantity is less than 11.
- ❖ **viewOldItems:** This class is responsible to display list of items which were purchased by the company before 2017/01/02.
- ❖ **login:** This class allows end user to login to the system.

8.2 Description of properties

Description of properties of addCategory class:

- ❖ btnAdd: Button to add category.
- ❖ categoryNameTxt: Category name textbox.
- ❖ descriptionTxt: Description textbox.

Description of properties of addItem class:

- ❖ addButton: Button to add item.
- ❖ categoryDDown: Category name drop down list.
- ❖ descriptionTxt: Description textbox.
- ❖ expiryDateTxt: Expiry date textbox.
- ❖ itemNameTxt: Item name textbox.
- ❖ manufacturedDateTxt: manufactured date textbox.
- ❖ priceTxt: Price textbox.
- ❖ purchasedDateTxt: Purchased date textbox.
- ❖ quantityTxt: Quantity textbox.

Description of properties of Admin class:

- ❖ btnLogout: Log out button.
- ❖ Button1: Add Category button.
- ❖ Button5: Add Item button.
- ❖ Button2: Manage Customer button.
- ❖ Button4: Manage User button.
- ❖ Button7: View Category items button.
- ❖ Button8: View Items Quantity button.
- ❖ Button9: Item Sales button.
- ❖ Button11: View Limited items button.
- ❖ Button12: List of old items button.
- ❖ Button14: Purchase button.
- ❖ Button3: Customer Report button.
- ❖ Button10: Out of Stock button.
- ❖ Button6: Customer with no purchase button.
- ❖ Button13: Items not sold in 31 days button.
- ❖ Button15: Profile button.

- ❖ Button16: Date wise sales report button.
- ❖ form2: Main form.
- ❖ Image2: Admin/User avatar icon.
- ❖ Label1: Heading text “Trillionaires Stock Management System” label at top of the screen.
- ❖ lblDetails: Label text. If user logs in, it will be set to “User”, and if admin logs in, it will be set to “Admin”.

Description of properties of customerNotBought class:

- ❖ GridView1: Grid view to display details of customers who haven't bought any item in last 31 days.

Description of properties of customerReport class:

- ❖ customerReportGridView: Grid view to display purchase details of customer.
- ❖ DropDownList1: Customer name drop down list.
- ❖ Label1: Select Customer label.
- ❖ Label4: Customer Report label.

Description of properties of dateWiseReport class:

- ❖ Calendar1: Calendar to select date.
- ❖ GridView2: Grid view to display sales report of selected date.
- ❖ Label3: Date label.
- ❖ selectDateBtn: “Click to select date” button.
- ❖ selectDateTxt: Textbox that contains selected date.

Description of properties of itemSales class:

- ❖ addButton: Button to add items to cart.
- ❖ categoryTxt: Text box to store category ID.
- ❖ DropDownList1: Item Category drop down list.
- ❖ DropDownList2: Item drop down list.
- ❖ DropDownList3: Customer name drop down list.
- ❖ GridView1: Grid view to display items details which were added to cart.
- ❖ Label1: Select Item Category label.
- ❖ Label2: Select Quantity label.
- ❖ Label3: Select Item label.

- ❖ Label4: Available Quantity label.
- ❖ Label5: Customer name label.
- ❖ Label6: Price label.
- ❖ Label7: List of cart items label.
- ❖ memberNumberTxt: Text box to store member number.
- ❖ priceTxt: Text box to display price of item.
- ❖ quantityTxt: Text box to display available quantity of item.
- ❖ selectQuantityTxt: Text box to display selected quantity of item.

Description of properties of manageCustomer class:

- ❖ addButton: Button to add customer.
- ❖ addressTxt: Address textbox.
- ❖ ageTxt: Age textbox.
- ❖ contactNumberTxt: Contact number textbox.
- ❖ customerNameTxt: Customer name textbox.
- ❖ emailTxt: Email address textbox.
- ❖ GridView1: Grid view to display details of customers.

Description of properties of manageUser class:

- ❖ addButton: Add button to add new user details.
- ❖ addressTxt: Address textbox.
- ❖ compareValidatorPassword: Compare validator for password.
- ❖ confirmPassTxt: Confirm password textbox.
- ❖ conactNumberTxt: Contact number textbox.
- ❖ emailAddressTxt: Email address textbox.
- ❖ fullNameTxt: Full name textbox.
- ❖ genderDDown: Gender drop down list.
- ❖ GridView1: Grid view to allow admin to update and delete
- ❖ isAdminDDown: Yes/No dropdown list.
- ❖ Label1: Add new user label.
- ❖ Label2: Manage user details label.
- ❖ passwordTxt: Password text box.
- ❖ positionTxt: Position text box.
- ❖ userNameTxt: User name text box.

Description of properties of noltemSold class:

- ❖ GridView1: Grid view to view details of item which were unsold in last 31 days.

Description of properties of outOfStock class:

- ❖ GridView1: Grid view to view details of out of stock items.
- ❖ itemNameBtn: Button to sort data according to name in ascending order.
- ❖ stockDateBtn: Button to sort data according to date in descending order.
- ❖ stockQuantityBtn: Button to sort data according to stock quantity in high to low.

Description of properties of profile class:

- ❖ checkPassword: password of selected user.
- ❖ compareValidator: Password compare validator.
- ❖ confirmBtn: Button to confirm password change.
- ❖ confirmPasswordTxt: Confirm password textbox.
- ❖ DropDownList1: Drop down to select user id.
- ❖ emailTxt: Email textbox.
- ❖ newPasswordTxt: New password textbox.
- ❖ oldPasswordTxt: Old password textbox.

Description of properties of purchase class:

- ❖ confirmPayment: Button to confirm payment.
- ❖ customerTxt: Member number text box.
- ❖ DropDownList1: Customer name dropdown list.
- ❖ GridView1: Grid view to view cart details of selected customer.
- ❖ totalAmountTxt: Total amount textbox.

Description of properties of viewCategoryItems class:

- ❖ DropDownList1: Category name dropdown list.
- ❖ GridView1: Grid view to view list of select category's items.
- ❖ categoryItemsTxt: Category id textbox.

Description of properties of viewItemsQuantity class:

- ❖ DropDownList1: Item name dropdown list.
- ❖ itemQuantityTxt: Select item's quantity textbox.

Description of properties of viewLimitedItem class:

- ❖ GridView1: Grid view to view details of limited items.

Description of properties of viewOldItems class:

- ❖ GridView1: Grid view to view details of old items.

Description of properties of login class:

- ❖ userNameTxt: Username textbox.
- ❖ passwordTxt: Password textbox.
- ❖ loginBtn: Login button.

8.3 Description of methods**Description of methods of addCategory class:**

- ❖ btnadd_Click: This method is responsible for adding category into category table in database.

Description of methods of addItem class:

- ❖ btnadd_click: This method is responsible for adding item into item table in database.

Description of methods of Admin class:

- ❖ Page_Load: This method is responsible for displaying “Admin” if admin logs into system, and “User” if user logs into system.
- ❖ btnLogout_Click: This method is responsible for abandoning the session and redirecting to login screen.

Description of methods of customerReport class:

- ❖ DropDownList1_SelectedIndexChanged: This method is responsible for displaying purchase details in grid view according to selected customer.

Description of methods of dateWiseReport class:

- ❖ selectDateBtn_Click: This method is responsible for make Calendar visible.
- ❖ Calendar1_SelectionChanged: This method is responsible for storing selected date in a textbox.

Description of methods of itemSales class:

- ❖ DropDownList1_SelectedIndexChanged: This method is responsible for assigning category id in category textbox.
- ❖ DropDownList2_SelectedIndexChanged: This method is responsible for displaying selected item's quantity and price in textboxes.
- ❖ DropDownList3_SelectedIndexChanged: This method is responsible for assigning member number in member number textbox.
- ❖ btnadd_Click: This method is responsible for adding cart details of customer in gridview.
- ❖ updateQuantity: This method is responsible for updating item's quantity.

Description of methods of manageCustomer class:

- ❖ btnadd_Click: This method is responsible for adding new customer details in database.

Description of methods of manageUser class:

- ❖ btnadd_Click: This method is responsible for adding new user details in database.

Description of methods of outOfStock class:

- ❖ itemNameBtn_Click: This method is responsible for displaying data according to name in ascending order.
- ❖ stockQuantityBtn_Click: This method is responsible for displaying data according to stock quantity in descending order.
- ❖ stockDateBtn_Click: This method is responsible for displaying data according to stock date in high to low order.

Description of methods of profile class:

- ❖ DropDownList1_SelectedIndexChanged: This method is responsible for assigning email address of user in textbox.
- ❖ confirmPassword_Click: This method is responsible for changing password.
- ❖ sendEmail: This method is responsible for sending email about password change to the user's email address.
- ❖ updatePassword: This method is responsible for updating password in database.

Description of methods of purchase class:

- ❖ Page_Load: This method is responsible for setting visibility of Cart Details label to false.
- ❖ DropDownList1_SelectedIndexChanged: This method is responsible for assigning value of member number in customerTxt textbox and calling fetchTotalAmount() method.
- ❖ fetchTotalAmount(): This method is responsible for adding line total of all items and displaying total amount in textbox.
- ❖ confirmPayment_Click: This method is responsible for calling updateCart() and confirmSales() methods.
- ❖ updateCart: This method is responsible for updating status to 0 in cart table which means payment is done.
- ❖ confirmSales: This method is responsible for inserting sales details into sales table in database.

Description of methods of viewCategoryItems class:

- ❖ categoryItemsTxt: This method is responsible for assigning value of category id in textbox.

Description of methods of viewItemsQuantity class:

- ❖ DropDownList1_SelectedIndexChanged: This method is responsible for assigning item quantity of selected item in textbox.

Description of methods of login class:

- ❖ loginBtn_Click: This method is responsible for checking end user's login details. If authenticated, end user will be redirected to the page where details of items running out of stock are displayed.

9. Flowchart

Flowchart is generally known as a pictorial representation of an algorithm. It helps us to know the flow of the project. By using different types of symbols like terminal, Input/Output, processing, decision, connectors, and flow lines it gives us a general overview and information of the project. It also helps us to analyse a program easily. Some of the flowchart to describe our project are given below:

9.1 Flowchart of adding items

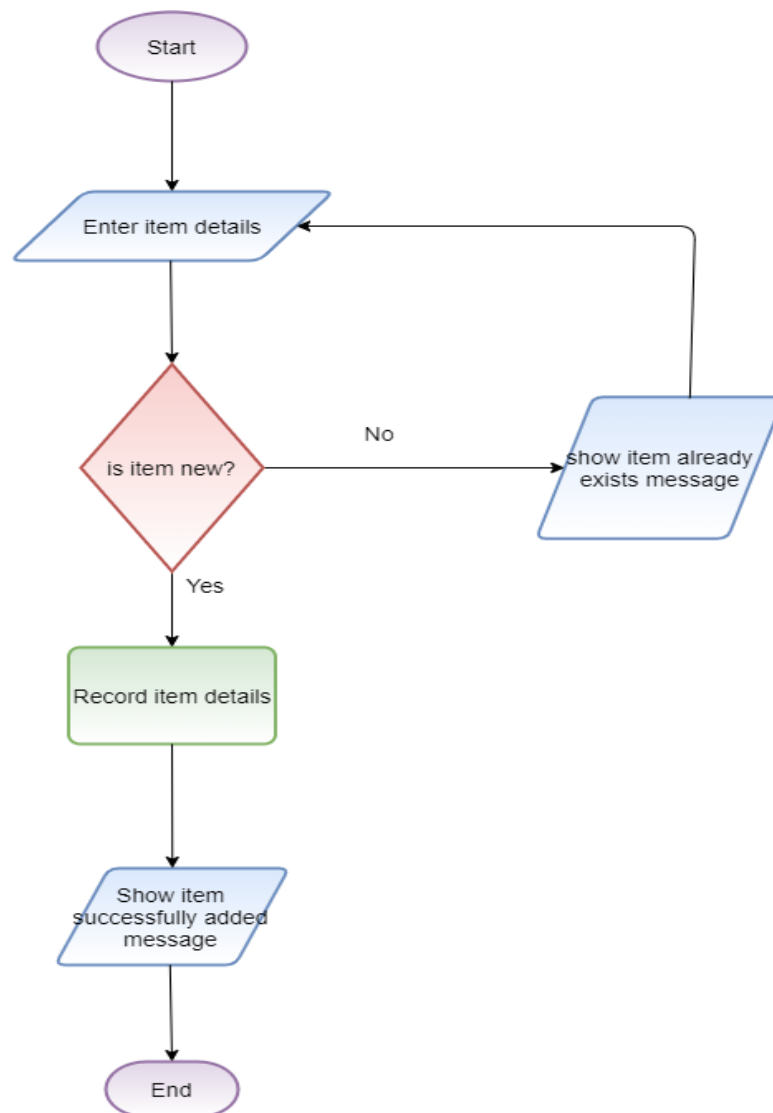


Figure 24: Flowchart of adding items

This flowchart is about adding items details in the system. First of all, user have to enter item and if the item already exists in the system, then the system then the system will request the user to enter the new item and if the entered item is new then the system will record item details.

9.2 Flowchart for adding customer

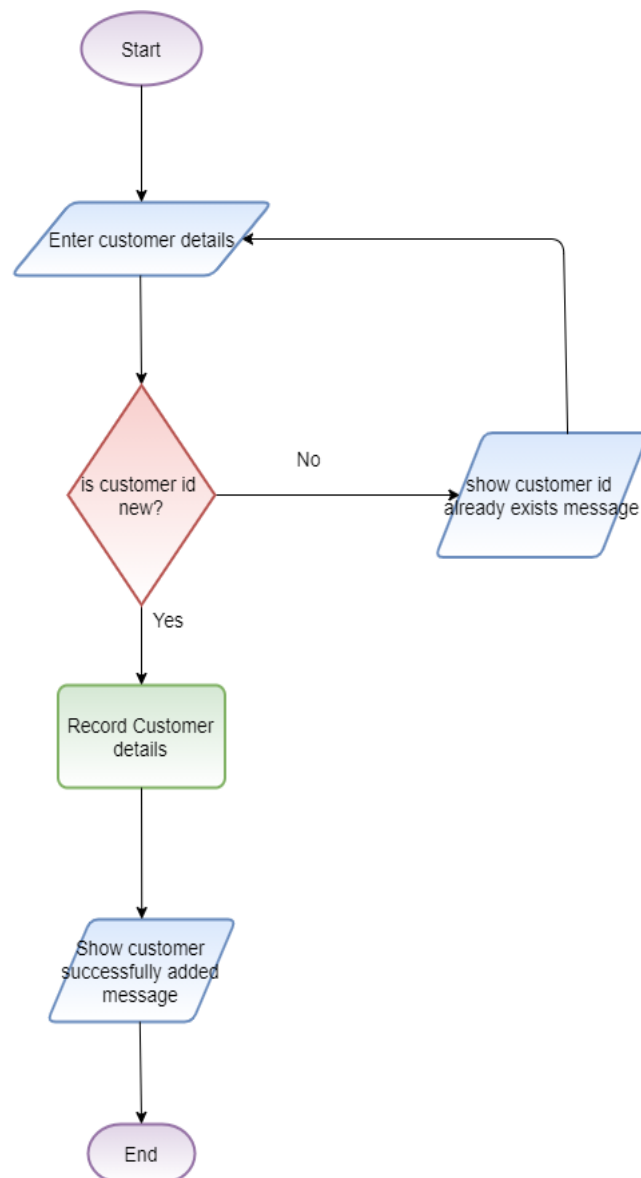


Figure 25: Flowchart of adding customer

This flowchart is about adding customer details in the system. First of all, user have to enter customer code and If the customer code already exists in the system then the system will force the user to enter the unique customer code to add customer details and if the entered customer code is new then the system will record customer details.

9.3 Flowchart for adding category

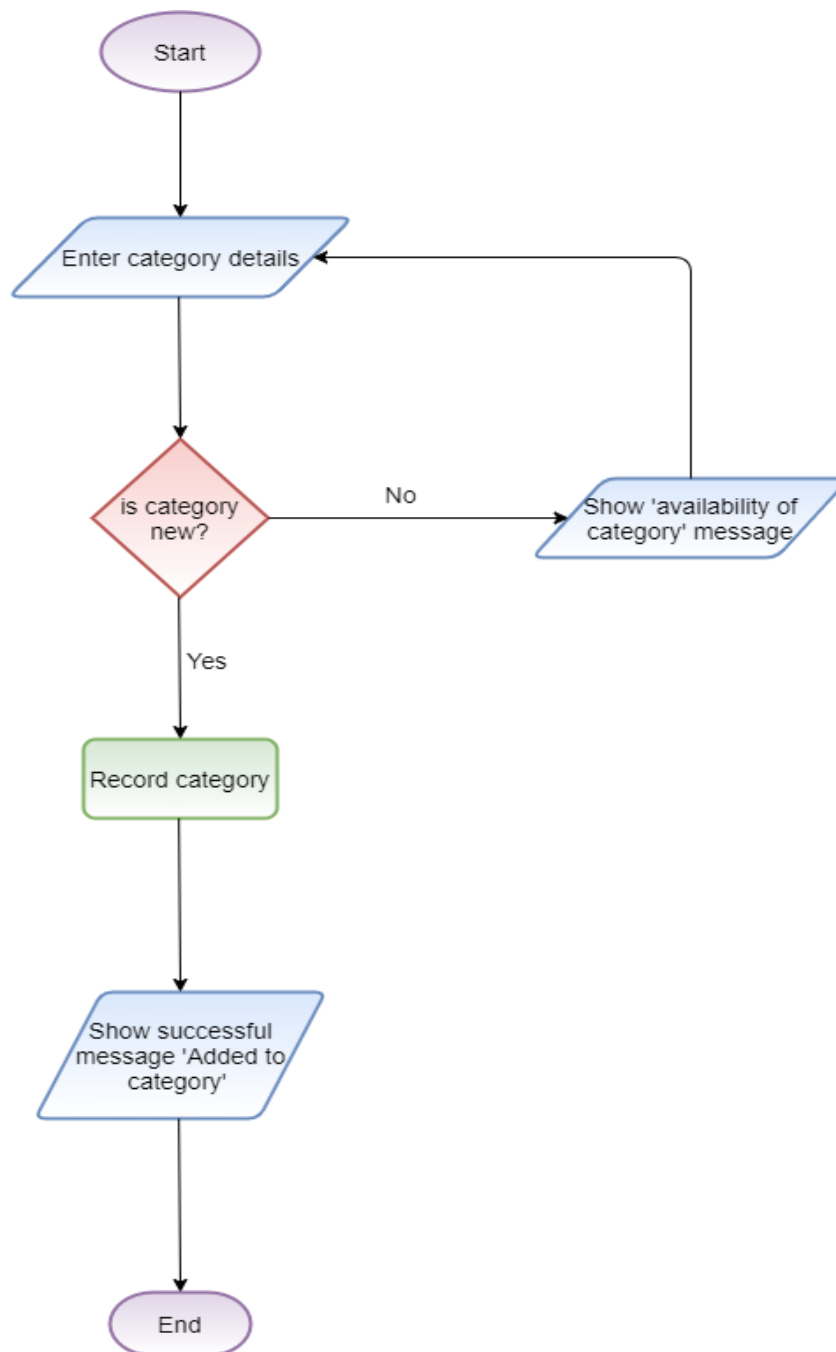


Figure 26: Flowchart of adding category

This flowchart is about adding category details in the system. First of all, user have to enter category and If the category already exists in the system, then the system then the system will force the user to enter the new category and if the entered category is new then the system will record category details.

9.4 Flowchart for login

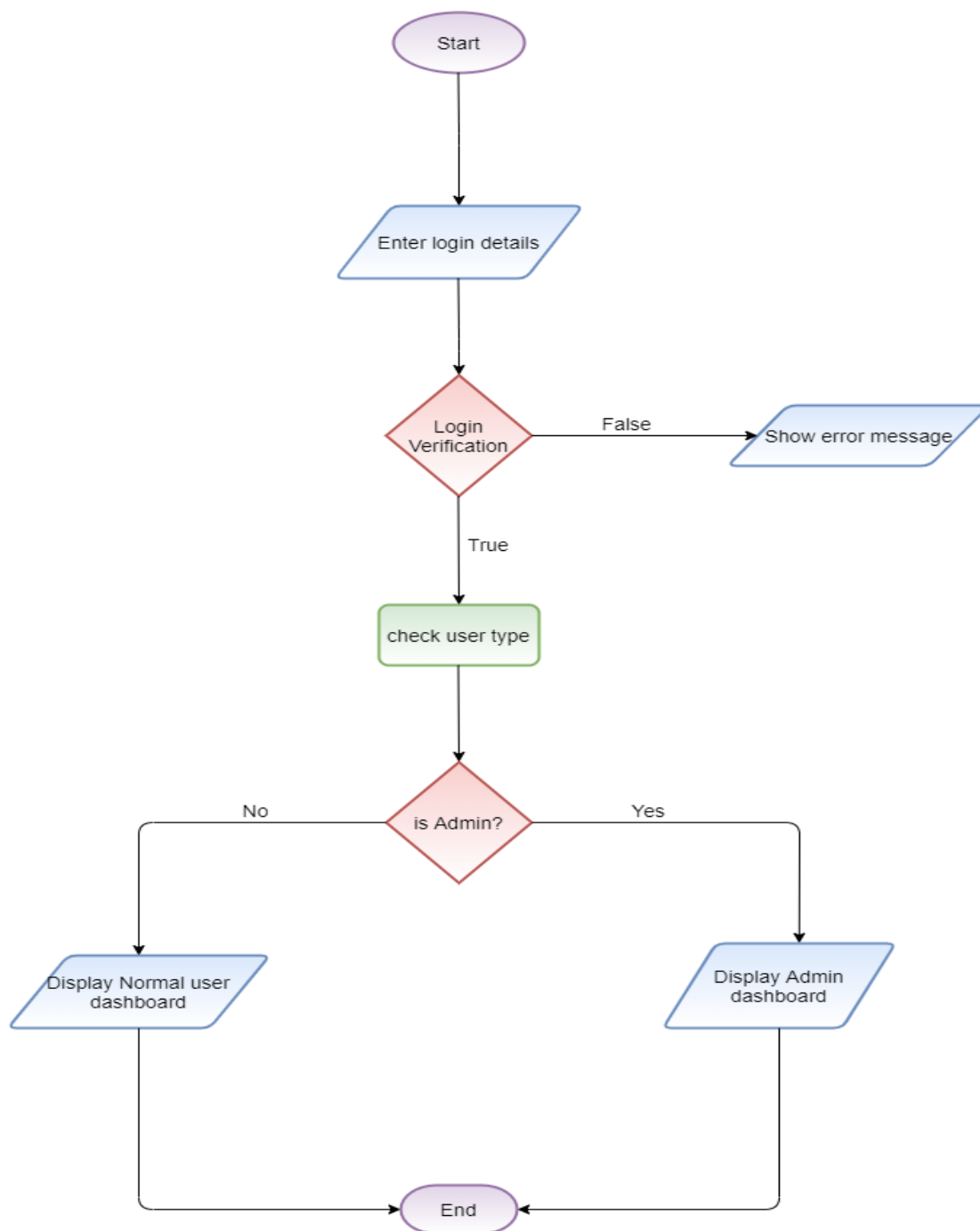


Figure 27: Flowchart for Login

Firstly, the system asks for the login. If the user isn't registered the system send the user to login page. Else, the user is logged in and move forward. Again, the system checks where the details is correct or not. If the details are incorrect the system shows the error message, Else, the user gets logged in. If the user is admin it shows admin dashboard else, it shows normal user dashboard.

9.5 Flowchart for items sale

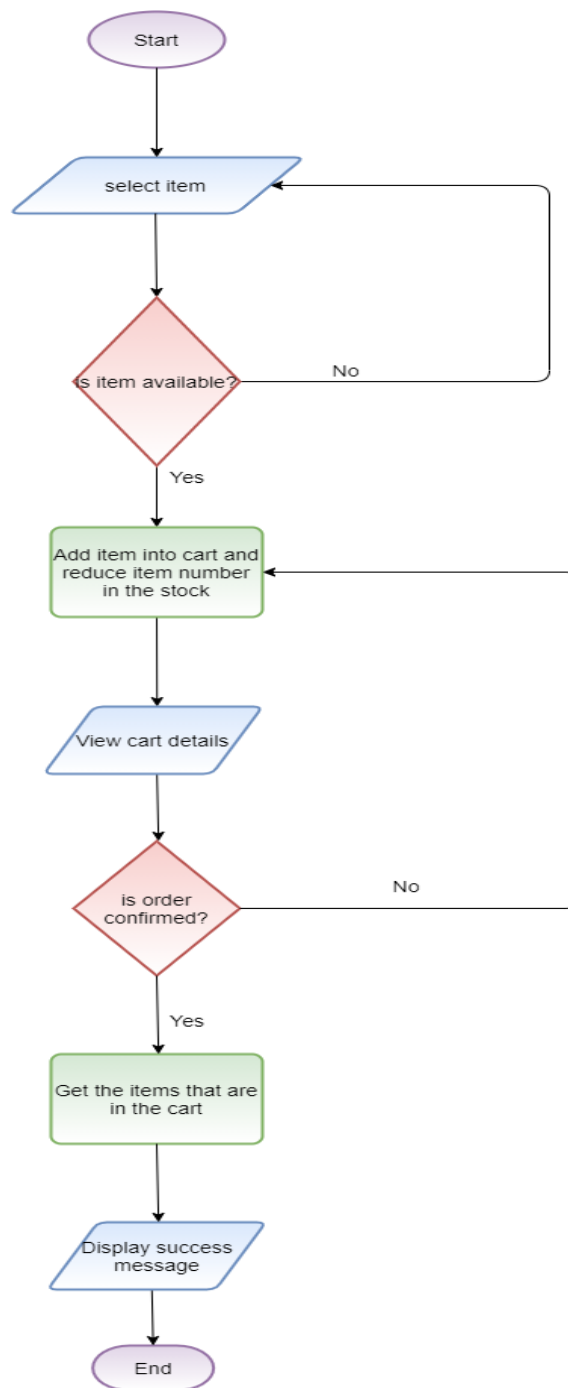


Figure 28: Flowchart for Items sale

This flowchart is about the items sales. First of all, user will select item and if the item is available then it will be added to cart otherwise system force user to enter items which are available in the system. After that system ask user if the orders are confirmed if yes then the items that are in the cart are carried out for further process.

9.6 Flowchart for password reset

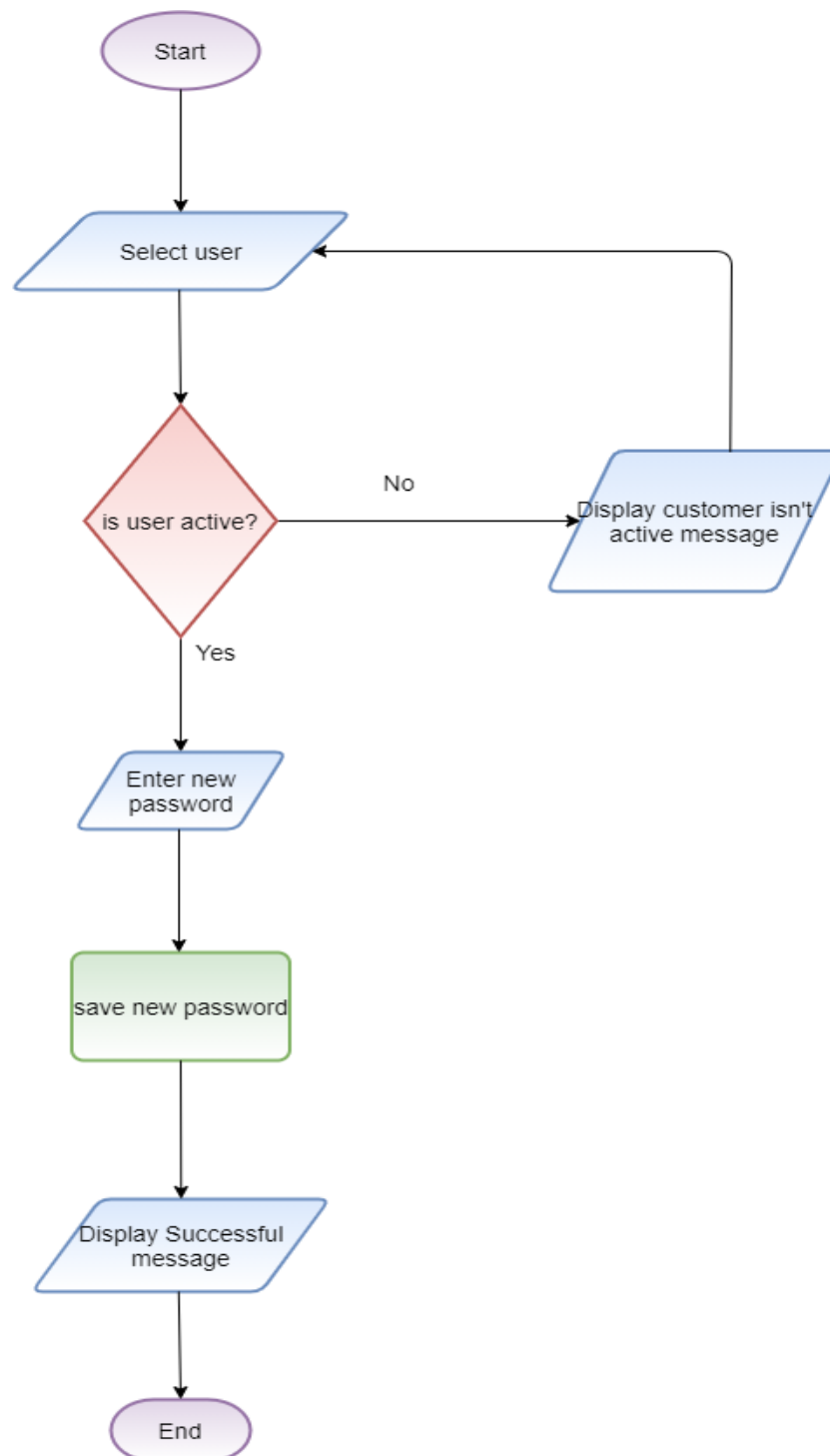


Figure 29: Flowchart for password reset

First of all, system checks if the user is active or not if yes then system urges user to enter new password and system saves it.

9.7 Flowchart for purchase details

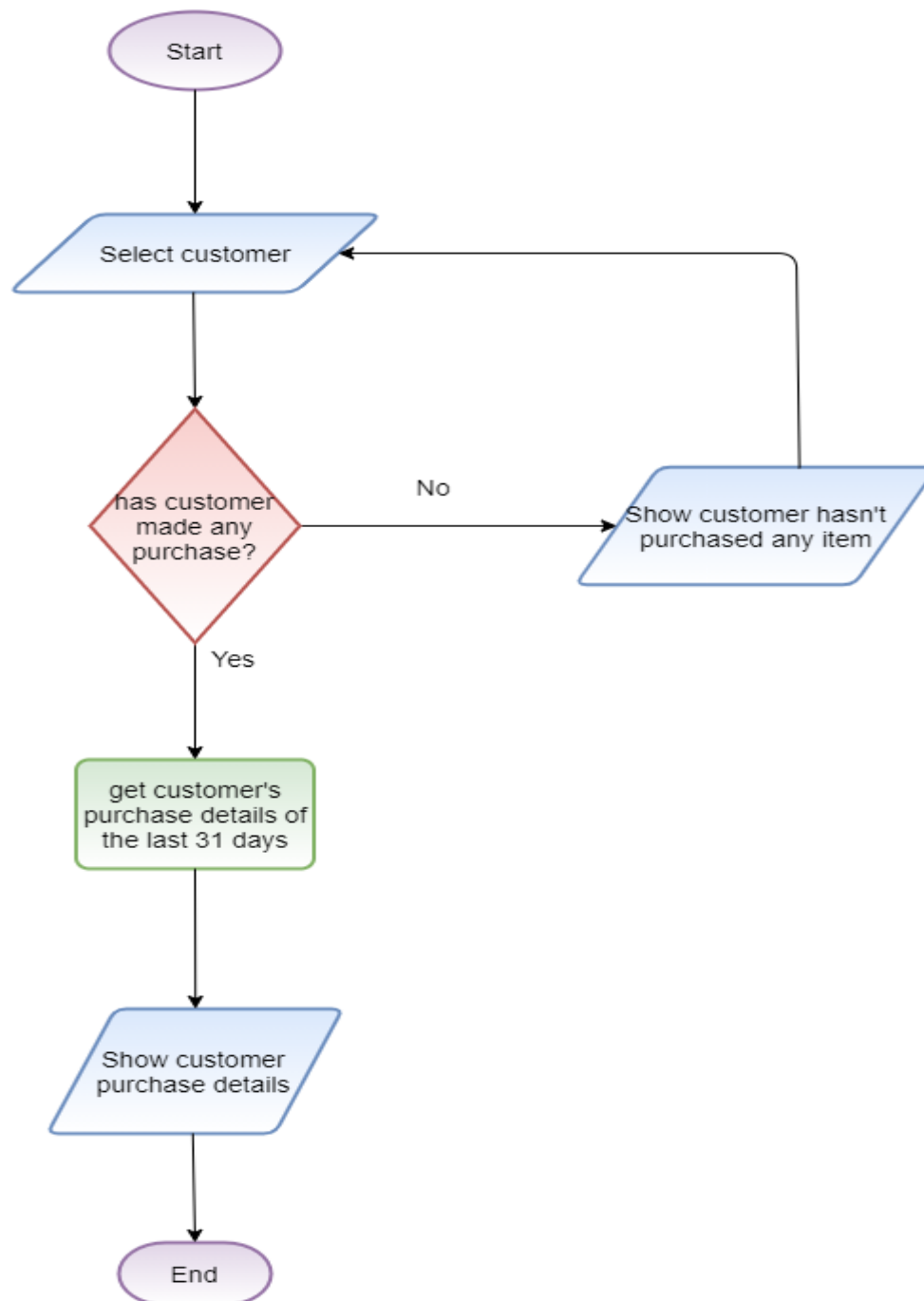


Figure 30: Flowchart for purchase details

This flowchart is about purchase details. First of all, user needs to enter customer code and if the customer has purchased any items in the last 31 days then system will display purchase details of the customer.

10. Algorithm

A sequence of instructions called an algorithm is used to execute a given operation. Algorithms are often generated as functions in computer programming. These functions act as mini programs that can be called from a larger program. In certain instances, inside a software application, there are multiple methods to execute a single procedure. As a result, most programmers strive to develop the most powerful algorithms possible. Developers can ensure that their applications run as quickly as possible by consuming the fewest machine resources possible by employing highly efficient algorithms (techterms, 2013). The algorithms that are used in our system are described below:

10.1 Login Algorithm

Step 1: Start

Step 2: Enter Login details

Step 3: If Login details are verified

 THEN

 Check User Type

 ELSE

 Show error message

Step 4: If user type is Admin

 THEN

 Display Admin Dashboard

 ELSE

 Display Normal User Dashboard

Step 5: End

10.2 Adding Category Algorithm

Step 1: Start

Step 2: Enter category details

Step 3: If category is new

 THEN

 Record category details

 ELSE

 Show “Availability of category” message

 AND

 Go to step 2

Step 3: Show “Added to category” message

Step 4: End

10.3 Adding Customer Algorithm

Step 1: Start

Step 2: Enter customer details

Step 3: If customer is new

 THEN

 Record customer details

 ELSE

 Show “customer id already exists” message

 AND

 Go to step 2

Step 3: Show “customer details added successfully” message

Step 4: End

10.4 Adding Item Algorithm

Step 1: Start

Step 2: Enter item details

Step 3: If item is new

 THEN

 Record item details

 ELSE

 Show “item already exists” message

 AND

 Go to step 2

Step 3: Show “item details added successfully” message

Step 4: End

10.5 Purchase details Algorithm

Step 1: Start

Step 2: select customer

Step 3: if customer had made any purchase

 THEN

 Get customer’s purchase details of the last 31 days

 ELSE

 Show “customer hasn’t purchased any item” message

 AND

 Go to step 2

Step 3: get customer’s purchase details of the last 31 days

Step 4: show customer purchase details

Step 5: End

10.6 Reset Password Algorithm

Step 1: Start

Step 2: select user

Step 3: If user is active

THEN

Enter new password

ELSE

Display customer isn't active message

AND

Go to step 2

Step 3: save new password in the database

Step 4: Display successful message

Step 5: End

10.7 Item sales Algorithm

Step 1: Start

Step 2: Enter customer details

Step 3: If customer is new

THEN

Record customer details

ELSE

Show "customer id already exists" message

AND

Go to step 2

Step 3: Show "customer details added successfully" message

Step 4: End

11. Testing:

The method of finding errors in software application or program so that the application functions according to the end user's requirement is called software testing. It involves execution of software/system components using manual or automated tools to evaluate one or more properties of interest. The testing of some of the requirements of the project was carried out which are listed below:

Test Case 1

Test objective	Step description	Expected outcome	Result
To test whether program runs without errors or not.	The program will be put to run mode and will check whether the programs successfully starts or not.	The program should be loaded in chrome without error.	Success.

Table 7: Test Case 1

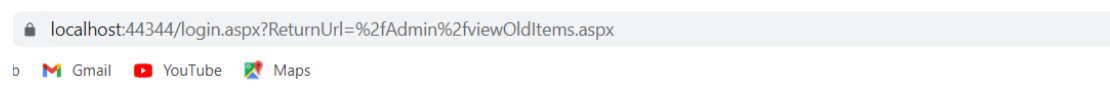


Figure 31: Login page

Test Case 2

Test objective	Step description	Expected outcome	Result
To test whether empty text boxes are taken or not in login interface.	Login button will be clicked without giving any inputs.	Empty text fields message should be shown.	Success.

Table 8: Test Case 2

localhost:44344/login.aspx?ReturnUrl=%2fAdmin%2fviewOldItems.aspx

b Gmail YouTube Maps

Trillionaires Stock Management System

Username Please enter your username

Password Please enter password

Login

[LabelMessage]

*Figure 32: Empty login details***Test Case 3**

Test objective	Step description	Expected outcome	Result
To test whether invalid login details are identified or not in login interface.	Login button will be clicked without giving authorized login details.	Incorrect username and password message should be shown.	Success.

Table 9: Test Case 3

localhost:44344/login.aspx?ReturnUrl=%2fAdmin%2fviewOldItems.aspx

ib Gmail YouTube Maps

Trillionaires Stock Management System

Username

Password

Login

[Incorrect login details](#)

Figure 33: Invalid login details

Test Case 4

Test objective	Step description	Expected outcome	Result
To test successful login with correct login details.	Login button will be clicked by passing correct inputs.	Login should be success and should be redirected to limited items page.	Success.

Table 10: Test Case 4

localhost:44344/Admin/viewLimitedItem.aspx

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Trillionaires Stock Management System

List of items running out of stock:									
Item ID	Category ID	Name	Description	Price	Purchase date	Manufacture date	Expiry date	Quantity	
10	102	Gold star	Made in Nepal	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1	
12	105	Harry Porter	Enjoy reading the best book of 21st century	12	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1	
13	100	Onion	Grown in Nepal	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1	
14	103	Roxy	Imported from France	12	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	2	
15	100	Ladys Finger	Grown in Nepal	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	2	
26	110	Mac	20 hours battery	105000	10/10/2010 12:00:00 AM	9/10/2010 12:00:00 AM	10/10/2020 12:00:00 AM	8	
27	101	Iphone 4s	Cheap cost	25000	12/30/2008 12:00:00 AM	11/30/2008 12:00:00 AM	9/11/2014 12:00:00 AM	7	


Figure 34: Login successful

Test Case 5

Test objective	Step description	Expected outcome	Result
To test whether user can enter category in the system or not.	All the data will be entered and add button will be clicked.	The added details should be stored in database.	Success.

Table 11: Test Case 5

Trillionaires Stock Management System


Admin

Add Category

Add Item

Manage Customer

Manage User

View Category items

View Items Quantity

Item Sales

View Limited Items

List of old items

ADD Category

Category Name :

Description :

This is new category test.

ADD

Figure 35: Adding new category details

Results		Messages	
	category...	name	description
1	100	Vegetables	Fresh vegetables grown in our own country, Nepal.
2	101	Mobile	Mobile products
3	102	Shoes	Get original branded shoes.
4	103	Bags	Find best bags from all over Nepal.
5	104	Mobile phones	Best mobile phones.
6	105	Books	Books made in Nepal.
7	106	Bus	Best buses in Nepal.
8	107	Truck	Heavy trucks.
9	108	Jeep	4x4 jeeps
10	109	Bicycle	Light body bicycles
11	110	Laptop	Best laptops with best specification.
12	111	Books	Books made in Nepal
13	112	Food	Delicious foods
14	113	Car	Best cars in Nepal.
15	114	New Category	This is new category test.

Figure 36: Category added in database successfully

Test Case 6

Test objective	Step description	Expected outcome	Result
To test whether user can store item details in the system or not.	Items details will be stored in the textboxes and submit.	The added details should be stored in database.	Success

Table 12: Test Case 6
Figure 37: Adding new item details

item_id	category...	name	description	price	purchase_d...	manufactured_d...	expiry_date	quant...
1	100	Brinjal	Yummy brinjal	70	2021-04-17	2021-04-17	2021-06-17	290
2	100	Cauliflower	Fresh cauliflower	140	2021-04-17	2021-04-17	2021-07-11	195
3	100	Potato	Fresh potato	1	2021-01-20	2020-10-10	2018-10-11	200
4	100	Pumpkin	Fresh pumpkin	1	2021-01-20	2020-10-10	2018-10-11	200
5	110	Dell Inspiron	Inspiron 7000 series	1	2021-01-20	2020-10-10	2018-10-11	200
6	102	Gold star	Made in Nepal	1	2021-01-20	2020-10-10	2018-10-11	1
7	104	Iphone 12	256 gb	1	2021-01-20	2020-10-10	2018-10-11	2222
8	105	Harry Porter	Enjoy reading the best book of 21st century	12	2021-01-20	2020-10-10	2018-10-11	1
9	100	Onion	Grown in Nepal	1	2021-01-20	2020-10-10	2018-10-11	1
10	103	Roxy	Imported from France	12	2021-01-20	2020-10-10	2018-10-11	2
11	100	Ladys Finger	Grown in Nepal	1	2021-01-20	2020-10-10	2018-10-11	2
12	102	Fila	Imported from Germany	12	2021-10-11	2021-01-11	2025-10-10	190
13	101	Samsung Note 10	Amazing performance	100	2021-01-10	2021-01-01	2021-04-10	200
14	101	One Plus 8T	Best price	100	2021-10-10	2019-12-12	2030-10-10	230
15	100	Tomato	Fresh Tomato	100	2016-10-10	2016-09-20	2022-02-02	1000
16	102	Nike	Nike Air	9899	2015-10-10	2015-01-30	2030-10-10	348
17	102	Adidas	Black and white	4500	2013-09-30	2013-08-30	2030-09-30	198
18	103	Gucci	Amazing quality	29...	2016-12-30	2016-11-30	2030-01-30	200
19	103	LV	Louis Vuitton	39...	2014-10-10	2014-09-10	2040-02-10	150
20	110	Mac	20 hours battery	10...	2010-10-10	2010-09-10	2020-10-10	8
21	101	Iphone 4s	Cheap cost	25...	2008-12-30	2008-11-30	2014-09-11	7
22	113	Range Rover Velar	Best SUV car.	25...	2019-12-30	2018-12-30	2040-10-10	45

Figure 38: New item added in database successfully

Test Case 7

Test objective	Step description	Expected outcome	Result
To test whether customer details can be added, updated and deleted or not.	To add details, customer details will be entered in text boxes and “ADD” button will be clicked. To update and delete details, “Edit” and “Delete” button will be clicked respectively.	Customer details should be added, updated and deleted.	Success

Table 13: Test Case 7

Manage Customer Details

Customer name :

Age :

Address :

Contact number :

Email address :

Member type :

ADD

	Member Number	Name	Age	Address	Contact Number	Email Address	member_type
Edit Delete	1	Mason Mount	22	Matepani-12, Pokhara	9000000000	mason@gmail.com	Regular
Edit Delete	1001	Lampard	48	Mahendra Pool, 11	9111111111	lampard08@gmail.com	Old
Edit Delete	2001	Hello	10	Ranipauwa-11, Pokhara	9822299999	hello@gmail.com	Regular
Edit Delete	2002	Jose Mourinho	51	Bijaypur, Pokhara	9800000010	mourinho@gmail.com	Regular
Edit Delete	2003	test	10	sd	123	a@gmail.com	New
Edit Delete	2004	test1	12	as	123	q@gmail.com	Regular
Edit Delete	2005	haha	12	haha address	9081111111	test@gmail.com	New
Edit Delete	2006	s	12	s	s	test@gmail.com	SELECT
Edit Delete	2007	haha	12	haha address	9081111111	q@gmail.com	Regular
Edit Delete	2008	New Customer	20	Nepal	9876	q@gmail.com	Regular

Figure 39: Adding new customer details

	Member Number	Name	Age	Address	Contact Number	Email Address	member_type
Edit Delete	1	Mason Mount	22	Matepani-12, Pokhara	9000000000	mason@gmail.com	Regular
Edit Delete	1001	Lampard	48	Mahendra Pool, 11	9111111111	lampard08@gmail.com	Old
Edit Delete	2001	Hello	10	Ranipauwa-11, Pokhara	9822299999	hello@gmail.com	Regular
Edit Delete	2002	Jose Mourinho	51	Bijaypur, Pokhara	9800000010	mourinho@gmail.com	Regular
Edit Delete	2003	test	10	sd	123	a@gmail.com	New
Edit Delete	2004	test1	12	as	123	q@gmail.com	Regular
Edit Delete	2005	haha	12	haha address	9081111111	test@gmail.com	New
Edit Delete	2006	s	12	s	s	test@gmail.com	SELECT
Edit Delete	2007	haha	12	haha address	9081111111	q@gmail.com	Regular
Edit Delete	2008	New Customer	20	Nepal	9876	q@gmail.com	Regular
Update Cancel	2009	<input type="text" value="Thomas Tuchel"/>	<input type="text" value="42"/>	<input type="text" value="Baneshwor, Kathmandu"/>	<input type="text" value="9000001111"/>	<input type="text" value="tuchel@gmail.com"/>	<input type="text" value="Old"/>

Figure 40: Updating customer details

	Member Number	Name	Age	Address	Contact Number	Email Address	member_type
Edit Delete	1	Mason Mount	22	Matepani-12, Pokhara	9000000000	mason@gmail.com	Regular
Edit Delete	1001	Lampard	48	Mahendra Pool, 11	9111111111	lampard08@gmail.com	Old
Edit Delete	2001	Hello	10	Ranipauwa-11, Pokhara	9822299999	hello@gmail.com	Regular
Edit Delete	2002	Jose Mourinho	51	Bijaypur, Pokhara	9800000010	mourinho@gmail.com	Regular
Edit Delete	2003	test	10	sd	123	a@gmail.com	New
Edit Delete	2004	test1	12	as	123	q@gmail.com	Regular
Edit Delete	2005	haha	12	haha address	9081111111	test@gmail.com	New
Edit Delete	2006	s	12	s	s	test@gmail.com	SELECT
Edit Delete	2007	haha	12	haha address	9081111111	q@gmail.com	Regular
Edit Delete	2008	New Customer	20	Nepal	9876	q@gmail.com	Regular

Figure 41: After deleting customer details

Test Case 8

Test objective	Step description	Expected outcome	Result
To test whether user details can be added, updated and deleted or not.	To add detail, user details will be entered in text boxes and “ADD” button will be clicked. To update and delete details, “Edit” and “Delete” button will be clicked respectively.	User details should be added, updated and deleted.	Success

Table 14: Test Case 8

Manage user details

Add new user:

Full name : Golden Dwa

Contact number : 922222222

Address : Lakeside, Pokhara

Gender : Male

Position : Delivery man

Email Address: goldendwa@gmail.com

Username: golden11

Password :

Confirm Password :

New admin account? No

ADD

Manage user details:

	User ID	Name	Username	Email	Password	Contact	Address	Gender	Position	Is Admin
Edit Delete	1	Kushal Gurung	kushal23	kushal23@gmail.com	kushalgurung	981111111	Gaundakomukh-13, Pokhara	Male	Manager	1
Edit Delete	2	Roshan Khattri	roshan12	roshan@gmail.com	khattri12	911111111	Dharan	Male	Receptionist	0
Edit Delete	3	Sita Thapa	sita01	sita01@gmail	thapa01	9000010101	Butwal	Female	Cashier	0
Edit Delete	4	a	a	a@aif	a	a	haha address	Other	Staff	1

Figure 42: Adding new user details

Manage user details:

	User ID	Name	Username	Email	Password	Contact	Address	Gender	Position	Is Admin
Edit Delete	1	Kushal Gurung	kushal23	kushal23@gmail.com	kushalgurung	9811111111	Gaundakomukh-13, Pokhara	Male	Manager	1
Edit Delete	2	Roshan Khattri	roshan12	roshan@gmail.com	khattri12	9111111111	Dharan	Male	Receptionist	0
Edit Delete	3	Sita Thapa	sita01	sita01@gmail	thapa01	9000010101	Butwal	Female	Cashier	0
Edit Delete	4	a	a	a@f	a	a	haha address	Other	Staff Manager	1
Edit Delete	5	Adish Shrestha	adish01	adish@gmail.com	adish01	9111111111	Simalchau, Pokhara	Male	Board member	1
Update Cancel	7	Golden Dwa	golden10	goldendwa@gmail.com	diva10	9222222222	Lakeside, Pokhara	Male	Delivery man	0

Figure 43: Updating user details

Manage user details:

	User ID	Name	Username	Email	Password	Contact	Address	Gender	Position	Is Admin
Edit Delete	1	Kushal Gurung	kushal23	kushal23@gmail.com	kushalgurung	9811111111	Gaundakomukh-13, Pokhara	Male	Manager	1
Edit Delete	2	Roshan Khattri	roshan12	roshan@gmail.com	khattri12	9111111111	Dharan	Male	Receptionist	0
Edit Delete	3	Sita Thapa	sita01	sita01@gmail	thapa01	9000010101	Butwal	Female	Cashier	0
Edit Delete	4	a	a	a@f	a	a	haha address	Other	Staff Manager	1
Edit Delete	5	Adish Shrestha	adish01	adish@gmail.com	adish01	9111111111	Simalchau, Pokhara	Male	Board member	1

Figure 44: After deleting user details

Test Case 9

Test objective	Step description	Expected outcome	Result
To test whether user can view category wise items.	Category will be selected from drop down list.	Items of selected category should be displayed in the grid view.	Success.

Table 15: Test Case 9

Category Items

Select Category: Mobile

List of Items:

Item ID	Category ID	Name	Description	Price	Purchase date	Manufacture date	Expiry date	Quantity
17	101	Samsung Note 10	Amazing performance	100	1/10/2021 12:00:00 AM	1/1/2021 12:00:00 AM	4/10/2021 12:00:00 AM	200
18	101	One Plus 8T	Best price	100	10/10/2021 12:00:00 AM	12/12/2019 12:00:00 AM	10/10/2030 12:00:00 AM	230
27	101	Iphone 4s	Cheap cost	25000	12/30/2008 12:00:00 AM	11/30/2008 12:00:00 AM	9/11/2014 12:00:00 AM	7

Figure 45: Category wise items

Test Case 10

Test objective	Step description	Expected outcome	Result
To test whether user can view available quantity of an item.	Item will be selected from drop down list.	Quantity of items should be displayed in the text box.	Success

Table 16: Test Case 10


 Admin	Items Quantity	
	Select Item:	Range Rover Velar ▼
	Total Quantity:	45

Figure 46: Quantity of selected item

Test Case 11

Test objective	Step description	Expected outcome	Result
To test whether user can add items to cart for a specific customer or not.	Category, item, quantity of item and customer names will be provided and "Add to cart" button will be clicked.	Item for the selected customer should be added to cart grid view.	Success.

Table 17: Test Case 11

Item Sales

Select Item Category: Shoes

Select Item : Nike
Available Quantity : 344

Select Quantity: 2

Price: 9899

Customer name: New Customer

Add to cart

List of cart items:

Cart ID	Member Number	Item ID	Quantity	Line Total	Status
500	1	1	12	100	1
505	2001	20	5	500	1
506	2008	23	4	1199996	1
508	1001	17	1	100	1
513	2008	5	2	280	1
514	1	21	4	39596	1

Figure 47: Adding item to cart

List of cart items:

Cart ID	Member Number	Item ID	Quantity	Line Total	Status
500	1	1	12	100	1
505	2001	20	5	500	1
506	2008	23	4	1199996	1
508	1001	17	1	100	1
513	2008	5	2	280	1
514	1	21	4	39596	1
516	2008	21	2	19798	1

Figure 48: Item added to cart successfully

Test Case 12

Test objective	Step description	Expected outcome	Result
To test whether user can make payment for customer or not.	Customer name will be selected and after his/her details are displayed, "Confirm Payment" button will be clicked.	Payment should be successful and status should be updated to 0, which means all payment are made.	Success.

Table 18: Test Case 12

Purchase

Select Customer : New Customer ▼

Cart Details :

Cart ID	Member Number	Item ID	Quantity	Line Total	Status
506	2008	23	4	1199996	1
513	2008	5	2	280	1
516	2008	21	2	19798	1

Total Amount : 1220074

Confirm Payment

Figure 49: Making item purchase

Results

Messages

	sales...	member_num...	item...	total_quan...	total_amo...	billing_date	status
9	338	1001	17	1	100	2021-05-02	0
10	339	1001	5	5	700	2021-05-02	0
11	340	2003	21	2	19798	2021-05-02	0
12	341	2003	22	2	9000	2021-05-02	0
13	342	2002	18	1	100	2021-05-04	0
14	343	2002	22	4	18000	2021-05-04	0
15	344	2002	1	10	700	2021-05-04	0
16	345	2002	18	2	200	2021-05-04	0
17	346	2002	18	1	100	2021-05-04	0
18	347	2002	22	4	18000	2021-05-04	0
19	348	2002	1	10	700	2021-05-04	0
20	349	2002	18	2	200	2021-05-04	0
21	350	2008	23	4	1199996	2021-05-04	0
22	351	2008	5	2	280	2021-05-04	0
23	352	2008	21	2	19798	2021-05-04	0

Figure 50: Purchase made successfully

Test Case 13

Test objective	Step description	Expected outcome	Result
To test whether user will be notified when item is getting out of stock or not.	Log in to the system.	After logging into the system, end user will be redirected to the page where list of items will be displayed which are running out of stock.	Success.

Table 19: Test Case 13


List of items running out of stock:								
Item ID	Category ID	Name	Description	Price	Purchase date	Manufacture date	Expiry date	Quantity
10	102	Gold star	Made in Nepal	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1
12	105	Harry Porter	Enjoy reading the best book of 21st century	12	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1
13	100	Onion	Grown in Nepal	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1
14	103	Roxy	Imported from France	12	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	2
15	100	Ladys Finger	Grown in Nepal	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	2
26	110	Mac	20 hours battery	105000	10/10/2010 12:00:00 AM	9/10/2010 12:00:00 AM	10/10/2020 12:00:00 AM	8
27	101	Iphone 4s	Cheap cost	25000	12/30/2008 12:00:00 AM	11/30/2008 12:00:00 AM	9/11/2014 12:00:00 AM	7

Figure 51: List of items running out of stock

Test Case 14

Test objective	Step description	Expected outcome	Result
To test user will be able to view old items which were purchased before 2017/01/02.	“List of old items” button on left side of the screen will be clicked.	Old items should be displayed.	Success.

Table 20: Test Case 14

<div></div> <div>Admin</div> <div>Add Category</div> <div>Add Item</div> <div>Manage Customer</div> <div>Manage User</div> <div>View Category items</div> <div>View Items Quantity</div> <div>Item Sales</div> <div>View Limited Items</div> <div>List of old items</div> <div>Purchase</div> <div>Customer Report</div> <div>Out Of Stock</div> <div>Customer with no purchase</div>	List of Old items									
	Item ID	Category ID	Name	Description	Price	Purchase date	Manufacture date	Expiry date	Quantity	
	Edit Delete 20	100	Tomato	Fresh Tomato	100	10/10/2016 12:00:00 AM	9/20/2016 12:00:00 AM	2/2/2022 12:00:00 AM	1000	
	Edit Delete 21	102	Nike	Nike Air	9899	10/10/2015 12:00:00 AM	1/30/2015 12:00:00 AM	10/10/2030 12:00:00 AM	342	
	Edit Delete 22	102	Adidas	Black and white	4500	9/30/2013 12:00:00 AM	8/30/2013 12:00:00 AM	9/30/2030 12:00:00 AM	198	
	Edit Delete 23	103	Gucci	Amazing quality	299999	12/30/2016 12:00:00 AM	11/30/2016 12:00:00 AM	1/30/2030 12:00:00 AM	200	
	Edit Delete 24	103	LV	Louis Vuitton	399999	10/10/2014 12:00:00 AM	9/10/2014 12:00:00 AM	2/10/2040 12:00:00 AM	150	
	Edit Delete 26	110	Mac	20 hours battery	105000	10/10/2010 12:00:00 AM	9/10/2010 12:00:00 AM	10/10/2020 12:00:00 AM	8	
	Edit Delete 27	101	Iphone 4s	Cheap cost	25000	12/30/2008 12:00:00 AM	11/30/2008 12:00:00 AM	9/11/2014 12:00:00 AM	7	

*Figure 52: List of old items***Test Case 15**

Test objective	Step description	Expected outcome	Result
To test whether user will be able to view purchase details of customer.	Customer name will be selected from drop down list.	Selected customer's purchase details should be displayed.	Success.

Table 21: Test Case 15

Customer Report						
Select Customer: New Customer ▼						
Customer Report:						
sales_id	member_number	item_id	total_quantity	total_amount	billing_date	status
350	2008	23	4	1199996	5/4/2021 12:00:00 AM	0
351	2008	5	2	280	5/4/2021 12:00:00 AM	0
352	2008	21	2	19798	5/4/2021 12:00:00 AM	0

Figure 53: Customer purchase report

Test Case 16

Test objective	Step description	Expected outcome	Result
To test whether out of stock items will be displayed as per name (ascending), stock date (descending) and stock quantity (high to low).	a. To sort by name in ascending order, "Sort by name (Asc)" button will be clicked. b. To sort by stock date in descending order, "Sort by stock date (Desc)" button will be clicked. c. To sort by stock quantity in high-low order, "Sort by stock quantity (High-Low)" button will be clicked.	When specific button is clicked, out of stock items should be displayed accordingly.	Success.

Table 22: Test Case 16

Out of stock items			
name	quantity	description	expiry_date
Gold star	1	Made in Nepal	10/11/2018 12:00:00 AM
Harry Porter	1	Enjoy reading the best book of 21st century	10/11/2018 12:00:00 AM
Iphone 4s	7	Cheap cost	9/11/2014 12:00:00 AM
Ladys Finger	2	Grown in Nepal	10/11/2018 12:00:00 AM
Mac	8	20 hours battery	10/10/2020 12:00:00 AM
Onion	1	Grown in Nepal	10/11/2018 12:00:00 AM
Roxy	2	Imported from France	10/11/2018 12:00:00 AM

Sort by name (Asc)

Sort by stock date (Desc)

Sort by stock quantity (High-Low)

Figure 54: Out of stock items sorted by name in ascending order

Out of stock items			
name	quantity	description	expiry_date
Mac	8	20 hours battery	10/10/2020 12:00:00 AM
Gold star	1	Made in Nepal	10/11/2018 12:00:00 AM
Harry Porter	1	Enjoy reading the best book of 21st century	10/11/2018 12:00:00 AM
Onion	1	Grown in Nepal	10/11/2018 12:00:00 AM
Roxy	2	Imported from France	10/11/2018 12:00:00 AM
Ladys Finger	2	Grown in Nepal	10/11/2018 12:00:00 AM
Iphone 4s	7	Cheap cost	9/11/2014 12:00:00 AM

Sort by name (Asc)

Sort by stock date (Desc)

Sort by stock quantity (High-Low)

Figure 55: Out of stock items sorted by stock date in descending order

Out of stock items			
name	quantity	description	expiry_date
Mac	8	20 hours battery	10/10/2020 12:00:00 AM
Iphone 4s	7	Cheap cost	9/11/2014 12:00:00 AM
Roxy	2	Imported from France	10/11/2018 12:00:00 AM
Ladys Finger	2	Grown in Nepal	10/11/2018 12:00:00 AM
Gold star	1	Made in Nepal	10/11/2018 12:00:00 AM
Harry Porter	1	Enjoy reading the best book of 21st century	10/11/2018 12:00:00 AM
Onion	1	Grown in Nepal	10/11/2018 12:00:00 AM
Sort by name (Asc)			
Sort by stock date (Desc)			
Sort by stock quantity (High-Low)			

Figure 56: Out of stock items sorted by stock quantity in high-low order

Test Case 17

Test objective	Step description	Expected outcome	Result
To test whether user can view details of customers with no purchase in last 31 days.	"Customer with no purchase" button at left side of the screen will be clicked.	Customer with no purchase in last 31 days must be displayed.	Success.

Table 23: Test Case 17


 Admin Add Category Add Item Manage Customer Manage User View Category items View Items Quantity Item Sales View Limited Items List of old items Purchase Customer Report Out Of Stock Customer with no purchase	List of customers with no purchases in last 31 days:						
	Member Number	Name	Age	Address	Contact Number	Email Address	Member Type
	1	Mason Mount	22	Matepani-12, Pokhara	9000000000	mason@gmail.com	Regular
	2001	Hello	10	Ranipauwa-11, Pokhara	9822299999	hello@gmail.com	Regular
	2004	test1	12	as	123	q@gmail.com	Regular
	2005	haha	12	haha address	9081111111	test@gmail.com	New
	2006	s	12	s	s	test@gmail.com	SELECT
	2007	haha	12	haha address	9081111111	q@gmail.com	Regular

Figure 57: Details of customers with no purchase in last 31 days

Test Case 18

Test objective	Step description	Expected outcome	Result
To test whether user can view details of items which were unsold in last 31 days.	"Items not sold in 31 days" button at left side of the screen will be clicked.	Items which were unsold in last 31 days must be displayed.	Success.

Table 24: Test Case 18

localhost:44344/Admin/noItemSold.aspx

Tab Gmail YouTube Maps

Trillionaires Stock Management System

List of items unsold in last 31 days:										
Item ID	Category ID	Name	Description	Price	Purchase date	Manufactured date	Expiry date	Quantity		
7	100	a	q	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	200		
8	100	a	q	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	200		
9	110	a	q	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	200		
10	102	a	a	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1		
11	104	s	s	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	2222		
12	105	qa	as	12	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1		
13	100	as	as	1	1/20/2021 12:00:00 AM	10/10/2020 12:00:00 AM	10/11/2018 12:00:00 AM	1		
					1/20/2021	10/10/2020	10/11/2018			

Figure 58: List of items which were unsold in last 31 days

Test Case 19

Test objective	Step description	Expected outcome	Result
To test whether user can view date wise sales report or not.	"Click to select date" button will be pressed, and a date will be selected from calendar.	Sales report of the selected date should be displayed.	Success.

Table 25: Test Case 19

Figure 59: Changing user password

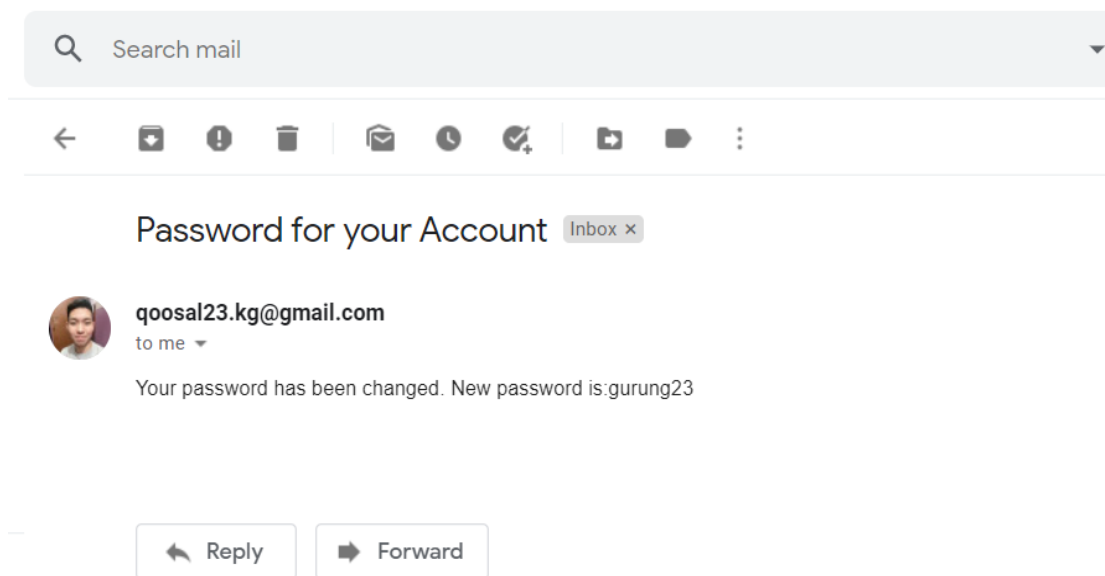


Figure 60: Email received regarding password change

Test Case 20

Test objective	Step description	Expected outcome	Result
To test whether user can view date wise sales report or not.	“Click to select date” button will be pressed, and a date will be selected from calendar.	Sales report of the selected date should be displayed.	Success.

Table 26: Test Case 20

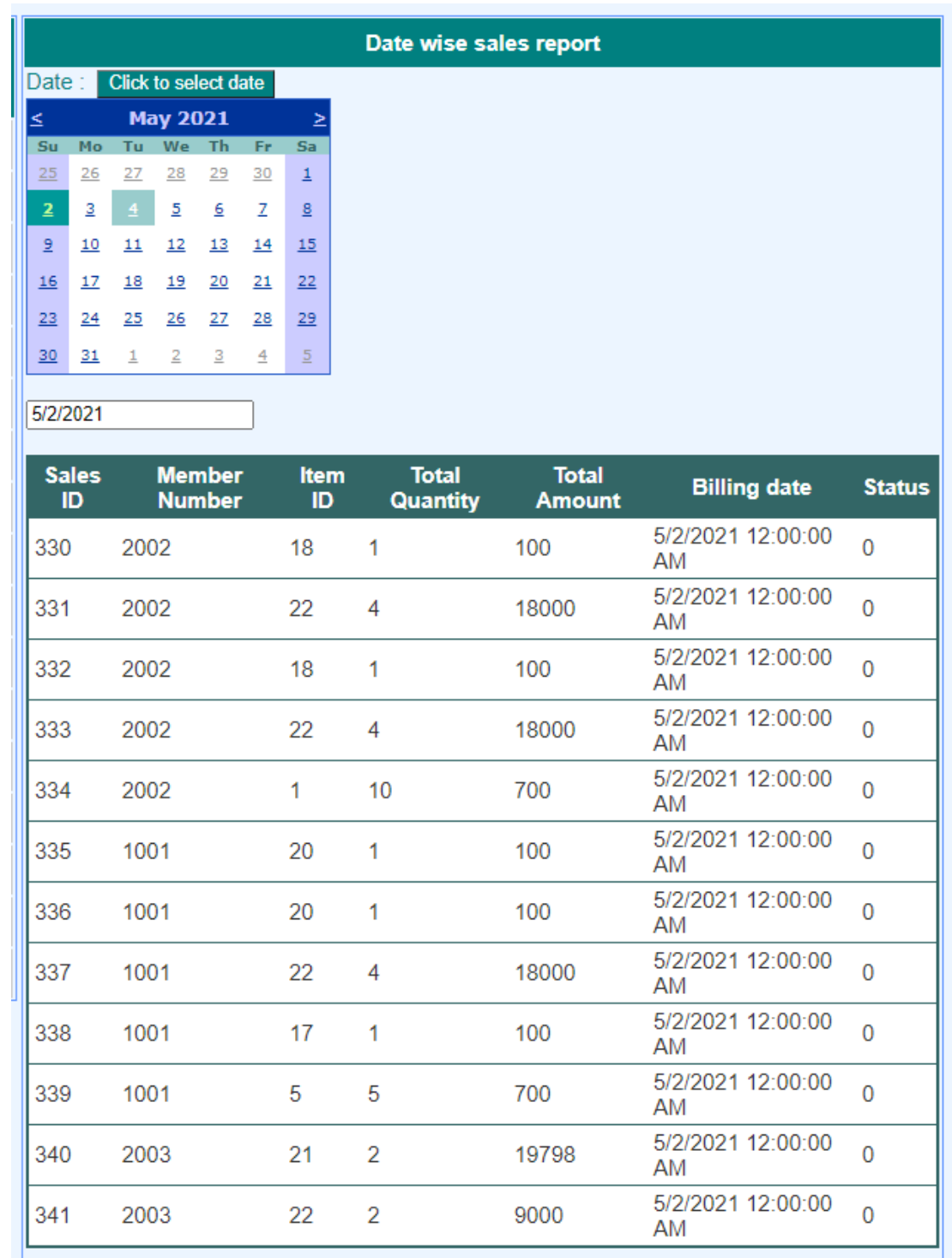


Figure 61: Sales report of selected date

12. Individual Learning Reflection

12.1 Roshan Khatri

While working in our project “Trillionaires stock management system” I learned a lot of things about .net framework, visual studio environment and of course about stock management system. I also learned about database and connecting and authenticating it in visual studio. More important, I learned to coordinate with my group members and my group communication confidence, my interreacting skill and expressing skill is also boosted.

Since we divided our tasks evenly to reduce completion time, login and database design was in my part for development and some portion of documentation as well. The development was not an easy task. Using server management studio (SSMS) was bit confusing at first but consulting with my module leader and group mates helped me in using it. It is an integrated environment for managing any SQL infrastructure. MS SQL was used for the backend works. It wasn't much tough for me working with the login and register part because this part was already practiced under supervision of our module leader during physical classes.

It was very difficult for all of our group members to communicate with each other's due to this lockdown caused by Covid-19. We did most of our works in online meeting which was also affected by load shedding. Despite of all the troubles and obstacles I along with other members tried their best. As a result, the project met all the requirements and was submitted on time.

12.2 Adish Shrestha

As this project was a group project all the works to be done were divided for each member. This project was about developing a web-based application using ASP .NET framework with the help of C# programming language. We used visual studio for the development of this project. The main theme of this project is to develop stock management system only for admin and normal user with features like, adding item details, adding customer details, showing purchase details and many others. This project gave us a way to learn more about the C# programming language as well as ASP .NET framework.

Basically, each member was assigned with different work and I was assigned to help my team members with developing test cases and also in diagrams. As we finished the development part of the project, we needed to test all the functions that we created. So, we created tables for test cases and wrote functions we were going to test. After each testing we screenshot the outcome of our function and paste it in the report for the proof. It was really difficult to communicate with my team members as we were in lockdown at the moment. So, we faced difficulty while doing the test cases as we need to discuss among the team members about the functions of the project. Testing gives the idea about how well our project worked as it gives the actual verdict about the system. While doing the testing I learned the details about the functions that were implemented in the system. It also helped to decrease the gap in knowledge about the project. We also found some defect in our system while doing testing and fixed them immediately. After testing all the functions that were integrated in the system, we were able to finish the technical part of the project.

In the initial phase of developing the project I also created diagrams like ER diagram, flowcharts and use case. These diagrams tell you about the flow of the program. Developing diagrams for the project helped me to strengthen my capability to understand the project clearly. In the developing part Kushal was doing developing functions. At times he faced error in the program, and we checked the bug and researched for it. While researching we learned many new ideas about the particular topic. Teamwork makes the project effective as we all were so driven to finish this project on time.

Apart from technical difficulties the pandemic made this project a little bit difficult as we had to do google meet session time and often for the discussion about the project. Meanwhile doing the meet session we were hit by load shedding badly. Time and often the electricity cut off and we couldn't finish the discussion we were supposed to do in that meet session. But we did our own research about the topic and contributed in the project as we can. This project has increased our patience level also apart from our technical abilities, time management and programming skills. This project will be our base for our future as we did learn a lot which will be valuable in our career as well as studies.

12.3 Kushal Gurung

My working experience during this project was very great. This project was very fruitful for my knowledge where I gained tons of skills and experience regarding Microsoft Visual Studio IDE, SQL Server 2014 Management studio, Microsoft SQL database, C# programming language. In our first group meeting, we divided the project and assigned specific task to each member, where I was in charge of the majority of the system design and development. Even though the project was divided into several parts, each and every member were helping in each other's parts when necessary. It not only helped us to finish the project on time but also increased our trust and teamwork co-ordination skills at the same time.

Talking about my role, I was heavily involved in coding the actual system. My contribution in this project include: addition of item, category, management of customer and user (addition, update and delete), displaying category-wise items, quantity of specific items, allowing user of the system to make item sales for customers, displaying purchase details from the last 31 days of a specific customer, give user the information when certain items are running out of stock as soon as they login into the system. Carrying on with my contribution, I was also responsible for displaying items which were on stock for a long time and allowing user to delete them, listing out of stock items and sorting the data by item name in ascending order, by stock quantity in high to low order and by item stocked date in descending order. Similarly, displaying list of customers with no purchase in last 31 days, list of items which were unsold in last 31 days, allowing user to change their password and sending email to their email address, allowing admin to change every users' details and generating date wise sales reports were the tasks that I did during this project.

Throughout this project, all of us group members helped each other a lot. In my part as well, my group members: Roshan Khatri, Adish Shrestha and Golden Dwa continuously helped me in my tasks for which I am very grateful to them. Finally, I want to thank my group members for their hard work and dedication throughout this project, without whom completion of this project with fulfilment of all system requirements wouldn't have been possible.

12.4 Golden Dwa

The given project was to develop a stock management system. As we know this is our group work which was completed with proper functional outcome as per our questions. This might be a group work but, we do have our individual role to complete this project. Along with the individual commitment we worked as a team to complete the project, which was fun, interactive, and knowledgeable.

The given coursework helps me to improve my skill to run visual studio and provide me more knowledge about .NET framework. The single project was divided into four part which later merged. There was various objective of the project but, I mainly focused in documentation section, helped with different types of diagrams with proper explanation and helped one of my friends in testing purpose. C# programming language was new to me, so it was a new experience for me. For completion of this web application, we faced a lot of problems which later was solved with more research and more interaction with my team. While going through the web application, I had become much more familiar with the components and tools such as drop-down menus, text boxes, data grids, grid views and many more. A lot of effort was taken to complete the given project successfully. By this experience, I am so confident that in future I can deal with such kind of relatable projects easily, own my own.

Going through this pandemic, this situation makes our project more complicated. We had problems for our regular interaction, so we had to go through google meet session for the regular discussion. This also hamper while interacting with our module leader. However, going through a lot of problems we figure out the proper method for the completion of our project. As a result, with the help of frequent interaction and hard work of every team member , we were able to complete this work and make it functionable.

13. Conclusion

This project was to develop a web application based on ASP.net framework which was a new topic for us this year. We learned about the fundamental and basics of ASP .net in the classes. But that wasn't enough to get the grasp of this project. As this project was a group project me and my friends did a lot of research about the related topic which was stock management system. We visited different websites, looked many blogs and journals as well which boosted our skills and knowledge about the related topic and ASP .net. Due to the current health situation going around the world and, in our country, we were compelled to do this project from home although it was a group project.

As mentioned in the project scenario we had to develop a stock management system that should have functionalities which were included in the scenario. We chose to develop a stock management system for store like bhatbhateni or saleways which sell all kinds of product. This web application basically allows user as well as admin to exploit the functionalities like recording customer details, customer purchase details and many other functions. First of all, we divided the project like some of us did a development part, some with the documentation part and some with the database part. Due the current situation caused by COVID-19 we faced slightly difficulty to merge our part all the parts of the project were scattered. Also, to contact the module leader it was difficulty which made a bit of confusion for us about the development process. Even in this critical condition or module leader helped us through this project for which we are grateful.

Despite of all these difficulties we managed to finish the project with the productive result. This project taught us that in group project there is the importance of each and every member of the group. Without the support of each member our project would have been halted. We knew how to work in the group which will help us in the future project in our career. This project taught us devotion and hard work as it was a difficult project to do. From zero level we have gained a lot of skills and knowledge about ASP .net framework from this project. With the experience we got from this project we are delighted to know that this will make our base strong for another group project and ASP .net framework. Overall, it was quite an experience doing this project we managed

to learn many things like validation, authentication connection of database which felt like working in real environment. As a conclusion we tend to know that there is still more to do from us in the future in application development.

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