AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH (AIUB)

Dept. of Computer Science
Faculty of Science and Technology

CSC2210: OBJECT ORIENTED PROGRAMMING 2

Spring 2023-2024

Section: [*H*]

Group No: 03

Project Report On

*Project Name [**Super Shop Management System**]*

Supervised By

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Submitted By:

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Obtained Marks for CO2 and CO3 (Description given in the following page)

Assessment Criteria	Not Attended/ Incorrect (0)	Inadequate (1-2)	Average (3)	Good (4)	Excellent (5)

Evaluation Criteria (CO2)	**Total =**	**Evaluation Criteria (CO3)**	**Total =**
Requirement fulfillment		Organization of the application	
Validation		Representation and Integration of Database	
Verification		Graphical User Interface	

CO2: Display and verify the mean of a real-life Project using the concepts of C# Graphical User Interface based environment with database integration to depict a desktop-based application.					
Assessment Criteria	**Not Attended/ Incorrect (0)**	**Inadequate (1-2)**	**Average (3)**	**Good (4)**	**Excellent (5)**
Evaluation Criteria	**Evaluation Definition**				
Requirement fulfillment	Fails to demonstrate any understanding of real-life scenario-based project development or functional requirement identification. There is no attempt to depict a project or identify functional requirements accurately.	Demonstrates limited understanding of real-life scenario-based project development and functional requirement identification. The project depicted lacks coherence or relevance to real-life scenarios, and functional requirements are inaccurately identified or insufficiently described.	Presents a basic depiction of a real-life scenario-based project and identifies some functional requirements. However, the project lacks depth or complexity, and some functional requirements may be vaguely defined or missing key details.	Effectively demonstrates a realistic scenario-based project and accurately identifies most functional requirements. The project is well-developed with appropriate complexity, and functional requirements are clearly articulated with relevant details.	Exhibits an exceptional understanding of real-life scenario-based project development and accurately identifies all functional requirements. The project is meticulously developed with thorough attention to detail, reflecting a comprehensive understanding of Object-Oriented Programming project development activities.
Validation	Fails to demonstrate any understanding or implementation of validation forms in their system. There is no attempt to deal with data validation, and validation requirements are completely ignored or incorrectly applied.	Demonstrates limited understanding of validation forms and data validation techniques. While some attempt may be made to implement validation, it is incomplete or poorly executed, leading to inadequate handling of data validation.	Shows a basic understanding of validation forms and data validation techniques. They attempt to implement validation, but some aspects may be missing or incorrectly implemented, resulting in partial or inconsistent handling of data validation.	Effectively demonstrates the use of validation forms and implements data validation techniques. Validation is mostly accurate and comprehensive, ensuring the proper handling of data input and verification in the system.	Exhibits an exceptional understanding and implementation of validation forms and data validation techniques. Validation is meticulously implemented with thorough attention to detail, ensuring robust data validation procedures and contributing to the overall reliability and integrity of the system.
Verification	Fails to demonstrate any attempt to verify the system data or functional requirements. There is no evidence of understanding or	Demonstrates limited understanding of verification processes and data flow in the system. Verification attempts are	Shows a basic understanding of verification processes and attempts to verify system data. However, verification efforts may be	Identifies and verifies system data, ensuring proper functional requirements are met. Verification efforts are mostly accurate and thorough, with	Exhibits an exceptional understanding of verification processes and meticulously verifies system data. Verification efforts are

	implementation of verification processes, and data flow is not considered.	incomplete or inaccurate, and there is insufficient consideration given to ensuring data integrity and functionality.	inconsistent or lack thoroughness, and there may be gaps in ensuring proper functional requirements and data flow.	attention to ensuring data integrity and appropriate data flow within the system.	comprehensive and precise, with a keen focus on ensuring all functional requirements are met and maintaining proper data flow throughout the system.

CO3: Prepare and Explain a real life desktop based application synthesizing several component of C# along with development tools to adhere the given requirements.

Assessment Criteria	Not Attended/ Incorrect (0)	Inadequate (1-2)	Average (3)	Good (4)	Excellent (5)
Evaluation Criteria	**Evaluation Definition**				
Organization of the application	Fails to identify any suitable real time application or requirements for project development activities related to OOP.	Limited understanding about the project scopes and scenarios or identification of functional requirements.	Lacks depth or relevance to OOP project development activities and may contain inaccuracies. Real-life scenarios are mentioned, but the discussion lacks depth or clarity.	Consider and integrate the idea of several core aspects of the project along with relevance to real-life scenarios. Demonstrating a solid understanding of the application presentation.	Generalize and exhibits an exceptional understanding of project preparation according to a to real-life scenarios. Also contains proper and insightful identification of the system which is comprehensive and precise.
Representation and Integration of Database	Fails to identify and present any understanding or implementation of database. Also failed to integrate the data with the project itself.	Limited understanding of the database concepts or their proper way of using in a real time project. While some attempt may be made to implement but it is incomplete or poorly executed, leading to inadequate design.	Lacks depth or relevance to database integration with the application. Shows a basic understanding but some aspects may be missing or incorrectly implemented, resulting in partial or inconsistency. May lack proper normalization.	Integrate the database with the forms properly and implements it with proper validation which is mostly accurate and comprehensive, ensuring the proper handling of data input and verification along with general normalization.	Exhibits an exceptional understanding and implementation of database ensuring attention to detail, and robust data manipulation procedures and contributing to the overall clarity.
Graphical User Interface	Fails to present or prepare GUI based application interfaces. There is no evidence of creating or integrating such things according to their usefulness.	Limited understanding of graphical user interfaces. Lack of design knowledge. Very poor attempt to make such things which are currently obsolete or can't be	Shows a basic understanding of creating user interfaces. Most of them are interconnected but maybe some of them lack it. However, most of it can be described as user friendly.	Effectively identifies and meet the consider the simplicity. Design related works are mostly accurate and taken proper attention to ensuring a user-friendly coherent system.	Exhibits an exceptional work design following a high standard of simple and elegant work. Several controls and mechanism has been organized in a preferred way

		identified as coherent.			according to the coherent usage .

Table of Contents:

Chapter:01

Introduction

The Super Shop Management System is a comprehensive solution designed to streamline operations and enhance efficiency in managing a super shop. This software caters to the needs of both administrators and sellers, providing them with specific functionalities tailored to their roles within the system.

For administrators, the system offers extensive capabilities such as information updating, user management, product management, category management, and supplier management. With these tools at their disposal, administrators can effectively oversee and control various aspects of the super shop, ensuring smooth operations and optimal performance.

On the other hand, sellers are equipped with functionalities to update their own information and search for products within the system. This empowers sellers to efficiently carry out their responsibilities, such as assisting customers and managing inventory, while accessing relevant information swiftly.

By offering differentiated functionalities for administrators and sellers, the Super Shop Management System enables seamless collaboration and enhances productivity within the super shop environment. This report provides an in-depth analysis of the system, its features, implementation, and potential benefits for super shop management.

Chapter :02

User Story

Admin:
Admin has access to various management functionalities to efficiently handle user, product, category, and supplier information within the system. This includes the ability to update user credentials, manage products, handle user accounts, and oversee categories and suppliers.

Acceptance Criteria:

1. User Management:
-Admin should be able to update user information such as username, password, email, role, address, and contact details.
- The system should provide options for logging users in and out securely.
- Admin should have the capability to add new users and delete existing ones as needed.
- There should be a functionality to clear user data fields for easy management.

2. Product Management:
- Admin should be able to manage products including their ID, label, category, supplier, status, unit, unit price, etc.
- The system should allow saving product information securely.
- Admin should have the capability to delete products that are no longer needed.
- A clear option should be available to reset product information fields.

3. Category Management:
- Admin should be able to search for existing categories within the system.
- Adding new categories should be a straightforward process for the Admin.
- The system should support the deletion of categories when necessary.
- Admin should have the option to clear category data fields.

4. Supplier Management:
- Admin should have the ability to manage supplier information including their ID, name, email, and contact details.
- Adding new suppliers should be supported by the system.
- Admin should be able to delete supplier records as needed.
- Clearing supplier information fields should be a simple task for the Admin.

Additional Details:

- All interactions with user, product, category, and supplier information should be secured with appropriate authentication mechanisms.
- Error handling should be implemented to handle any unexpected scenarios gracefully.
- The system should provide a user-friendly interface for Admins to navigate and perform necessary tasks efficiently.

Dependencies:

- Integration with authentication mechanisms for user login and access control.
- Integration with databases or data storage solutions for persistent storage of user, product, category, and supplier information.

This user story outlines the key functionalities required by an Admin Management System, focusing on user, product, category, and supplier management. It provides a clear set of acceptance criteria to ensure that the implemented system meets the desired requirements.

Seller:

User has access to functionalities to update my password and search for/view products within the system. This includes the ability to change my password securely and efficiently search for products based on specific criteria.

Acceptance Criteria:

1. **Password Change:**
   - As a User, I should be able to change my password securely.
   - The system should prompt me to input my current password along with the new password for verification.
   - Password change functionality should adhere to security best practices, such as password complexity requirements and encryption.

2. **Product Search and Viewing:**
   - Users should have the ability to search for products within the system based on various criteria such as product label, category, supplier, etc.
   - The search functionality should return relevant results matching the user's criteria.
   - Users should be able to view detailed information about individual products, including product ID, label, category, supplier, status, unit, unit price, etc.
   - Product information should be presented in a user-friendly manner for easy viewing and understanding.

Additional Details:

- All interactions with user information and product data should be secured to protect user privacy and system integrity.
- Error handling should be implemented to gracefully manage any unexpected scenarios, such as invalid password changes or unsuccessful product searches.
- The system should provide a responsive and intuitive interface for users to navigate and perform desired actions efficiently.

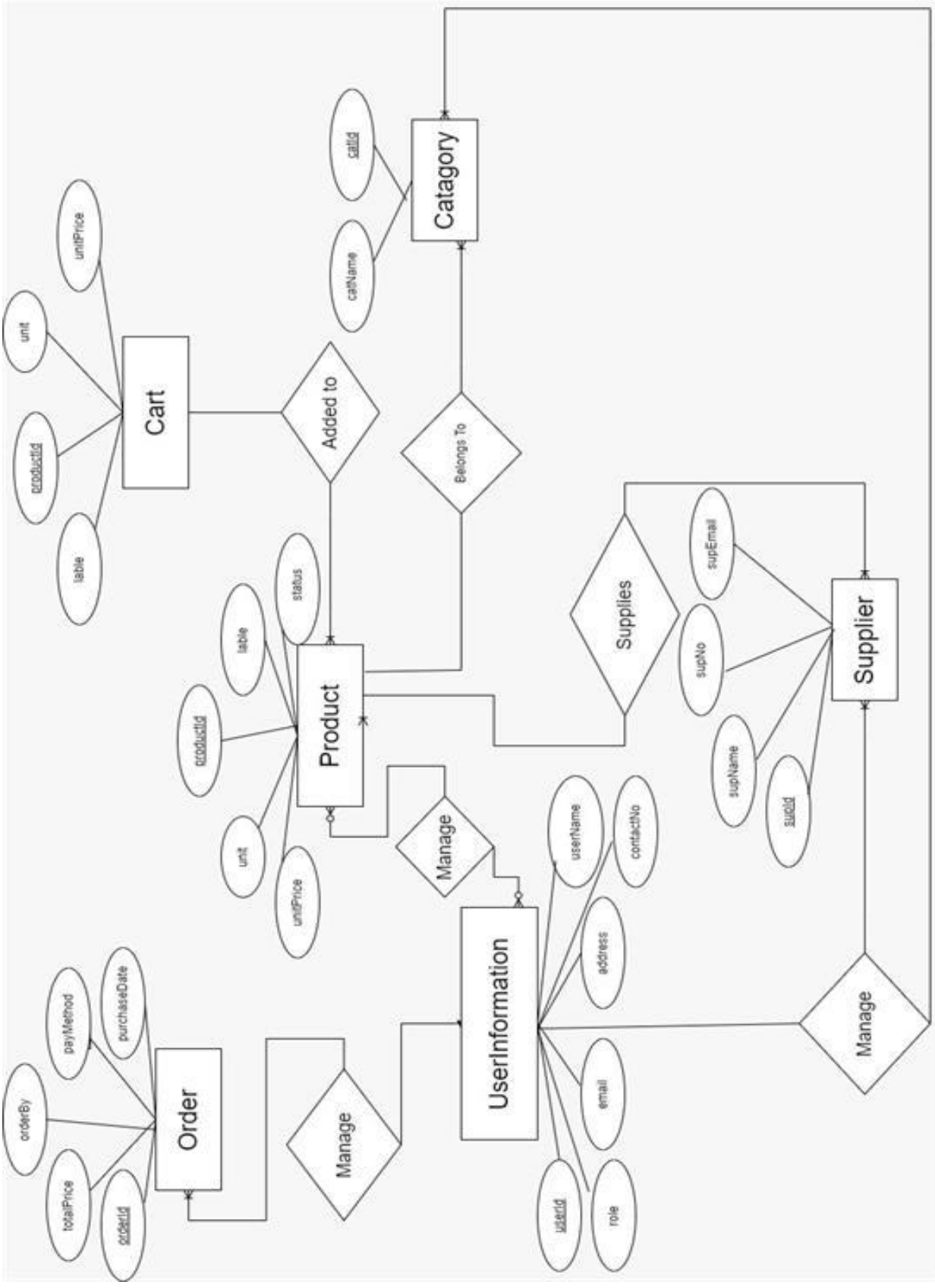
Dependencies:

- Integration with authentication mechanisms for user login and access control.
- Integration with databases or data storage solutions for retrieving and displaying user information and product data.

This user story outlines the key functionalities required for users to update their passwords and search for/view products within the system. It provides clear acceptance criteria to ensure that the implemented system meets the desired user requirements.

Chapter:03(A)

ER Diagram



Normalization upto 2NF

userInfo → Order

UNF :

userId, role, email, address, username, contactNo, orderId, totalPrice, orderBy, payMethod, purchaseDate

1NF :

userId, role, email, address, username, contactNo, orderId, totalPrice, orderBy, payMethod, purchaseDate

2NF :

1. userId, role, email, address, username, contactNo
2. orderId(PK), totalPrice, orderBy, payMethod, purchaseDate, userId(FK).

userInfo → Product

UNF :

userId, role, email, address, username, contactNo, productId, unitPrice, unit, lable, status

1NF :

userId, role, email, address, username, contactNo, productId, unitPrice, unit, lable, status

2NF :

1. userId, role, email, address, username, contactNo
2. productid(PK), unitPrice, unit, lable, status, userId(FK)

userInfo → Category

UNF :

userId, role, email, address, username, contactNo, catId, catName

1NF :

userId, role, email, address, username, contactNo, catId, catName

2NF :

1. userId, role, email, address, username, contactNo
2. catId(PK), catName, userId(FK).

userInfo → Supplier

UNF :

userId, role, email, address, username, contactNo, supId, supName, supNo, supEmail

1NF :

userId, role, email, address, username, contactNo, supId, supName, supNo, supEmail

2NF :

1. userId, role, email, address, username, contactNo
2. supId(PK), supName, supNo, supEmail, userId(FK)

Product → Cart

UNF :

productId, unitPrice, unit, lable, status, cartId, unit, unitPrice, lable

1NF :

productId, unitPrice, unit, lable, status, cartId, unit, unitPrice, lable

2NF :

1. productId, unitPrice, unit, lable, status
2. productId(PK), unit, unitPrice, lable, cartId (FK)

Product → Category

UNF :

productId, unitPrice, unit, lable, status, catId, catName

1NF :

productId, unitPrice, unit, lable, status, catId, catName

2NF :

1. productId, unitPrice, unit, lable, status
2. catId(PK), catName, productId(FK)

Supplier → Product

UNF :

supId, supName, supNo, supEmail, productId, unitPrice, unit, lable, status

1NF :

supId, supName, supNo, supEmail, productId, unitPrice, unit, lable, status

2NF :

1. supId, supName, supNo, supEmail
2. productId(PK), unitPrice, unit, lable, status, supId(FK).

Chapter:03(B)
SQL Queries

```
USE [SuperShopDB]
GO
/****** Object:  Table [dbo].[Category]    Script Date: 5/13/2024 2:00:07 PM ******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
SET ANSI_PADDING ON
GO
CREATE TABLE [dbo].[Category](
	[CatId] [int] IDENTITY(1,1) NOT NULL,
	[CatName] [varchar](20) NOT NULL,
 CONSTRAINT [PK_Category] PRIMARY KEY CLUSTERED
(
	[CatId] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]

GO
SET ANSI_PADDING OFF
GO
/****** Object:  Table [dbo].[Order]    Script Date: 5/13/2024 2:00:07 PM ******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
SET ANSI_PADDING ON
GO
CREATE TABLE [dbo].[Order](
	[OrderId] [varchar](50) NOT NULL,
 CONSTRAINT [PK_Order] PRIMARY KEY CLUSTERED
(
	[OrderId] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]

GO
SET ANSI_PADDING OFF
GO
```

```
/****** Object:  Table [dbo].[Product]    Script Date: 5/13/2024 2:00:07 PM ******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
SET ANSI_PADDING ON
GO
CREATE TABLE [dbo].[Product](
	[ProdId] [int] IDENTITY(1,1) NOT NULL,
	[ProdLabel] [varchar](50) NOT NULL,
	[Category] [varchar](50) NULL,
	[Supplier] [varchar](50) NULL,
	[Status] [varchar](50) NOT NULL,
	[Unit] [int] NULL,
	[UnitPrice] [varchar](50) NULL,
 CONSTRAINT [PK_Product] PRIMARY KEY CLUSTERED
(
	[ProdId] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]

GO
SET ANSI_PADDING OFF
GO
/****** Object:  Table [dbo].[Supplier]    Script Date: 5/13/2024 2:00:07 PM ******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
SET ANSI_PADDING ON
GO
CREATE TABLE [dbo].[Supplier](
	[SupId] [int] IDENTITY(1,1) NOT NULL,
	[SupName] [varchar](50) NOT NULL,
	[SupEmail] [varchar](50) NOT NULL,
	[SupContactNo] [varchar](50) NULL,
 CONSTRAINT [PK_Supplier] PRIMARY KEY CLUSTERED
(
	[SupId] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]

GO
SET ANSI_PADDING OFF
GO
/****** Object:  Table [dbo].[UserInformation]    Script Date: 5/13/2024 2:00:07 PM ******/
```

```
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
SET ANSI_PADDING ON
GO
CREATE TABLE [dbo].[UserInformation](
	[UserName] [varchar](30) NOT NULL,
	[Password] [varchar](20) NOT NULL,
	[Role] [varchar](10) NOT NULL,
	[Email] [varchar](30) NULL,
	[Address] [varchar](50) NULL,
	[ContactNo] [varchar](20) NULL,
 CONSTRAINT [PK_UserInformation] PRIMARY KEY CLUSTERED
(
	[UserName] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]

GO
SET ANSI_PADDING OFF
GO
SET IDENTITY_INSERT [dbo].[Category] ON

INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (1, N'Fruits')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (2, N'Vegetables')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (3, N'Dairy')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (4, N'Meat')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (5, N'Fish')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (6, N'Frozen Food')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (7, N'Snacks')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (8, N'Drinks')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (9, N'Household and Cleani')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (10, N'Personal care')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (11, N'Baby product')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (12, N'Hygiene')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (13, N'Bakery items')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (14, N'Canned food')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (15, N'Accessories')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (16, N'Clothes')
INSERT [dbo].[Category] ([CatId], [CatName]) VALUES (20, N'Electronics')
SET IDENTITY_INSERT [dbo].[Category] OFF
SET IDENTITY_INSERT [dbo].[Product] ON

INSERT [dbo].[Product] ([ProdId], [ProdLabel], [Category], [Supplier], [Status], [Unit], [UnitPrice]) VALUES (1, N'Sprite', N'Drinks', N'CocaCola', N'In stock', 120, N'55')
```

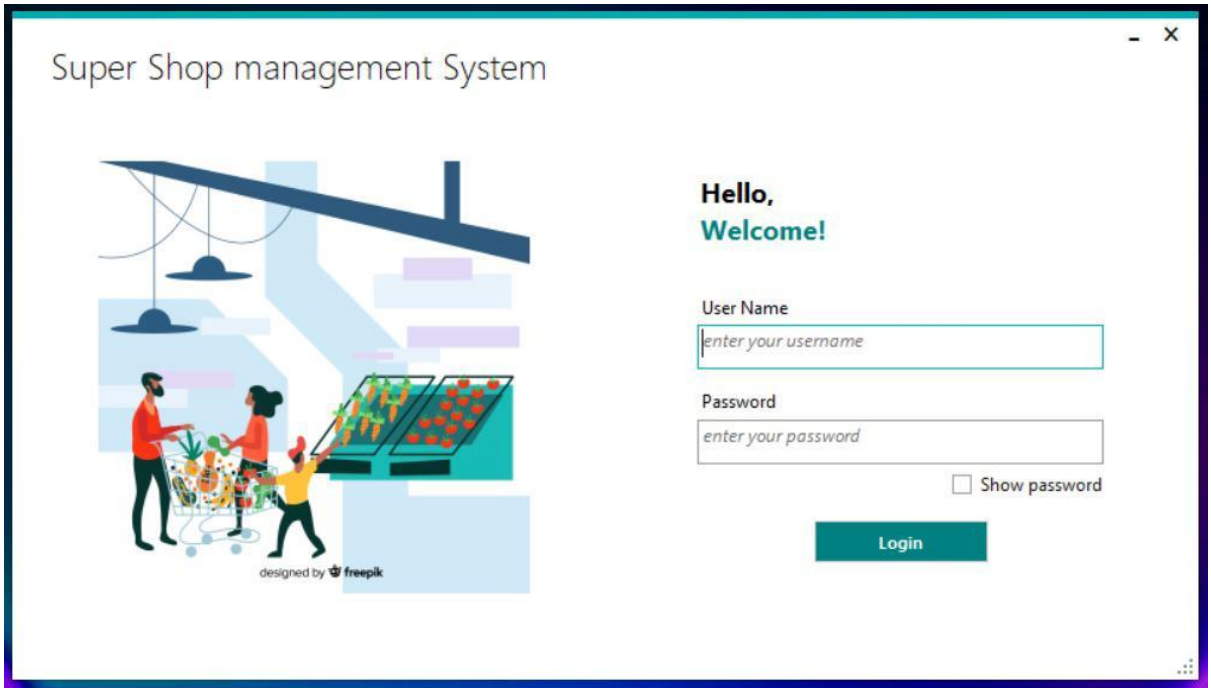
INSERT [dbo].[Product] ([ProdId], [ProdLabel], [Category], [Supplier], [Status], [Unit], [UnitPrice]) VALUES (9, N'df', N'System.Data.DataRowView', N'System.Data.DataRowView', N'Out Of Stock', 0, N'100')
INSERT [dbo].[Product] ([ProdId], [ProdLabel], [Category], [Supplier], [Status], [Unit], [UnitPrice]) VALUES (10, N'fd', N'1', N'2', N'', 555, N'1000')
SET IDENTITY_INSERT [dbo].[Product] OFF
SET IDENTITY_INSERT [dbo].[Supplier] ON

INSERT [dbo].[Supplier] ([SupId], [SupName], [SupEmail], [SupContactNo]) VALUES (2, N'Unilever2', N'unilever@brand.com', N'5645585567')
INSERT [dbo].[Supplier] ([SupId], [SupName], [SupEmail], [SupContactNo]) VALUES (3, N'CocaCola', N'cocagola@dmail.com', N'1234568')
INSERT [dbo].[Supplier] ([SupId], [SupName], [SupEmail], [SupContactNo]) VALUES (5, N'Fuad Bakery', N'fuad@bakery.com', N'1235877458')
INSERT [dbo].[Supplier] ([SupId], [SupName], [SupEmail], [SupContactNo]) VALUES (6, N'Akij Company', N'akij@gmail.com', N'45666')
INSERT [dbo].[Supplier] ([SupId], [SupName], [SupEmail], [SupContactNo]) VALUES (7, N'Wow Food', N'wowfood@yahoo.com', N'125555555')
SET IDENTITY_INSERT [dbo].[Supplier] OFF
INSERT [dbo].[UserInformation] ([UserName], [Password], [Role], [Email], [Address], [ContactNo]) VALUES (N'admin', N'admin123', N'admin', N'admin@supershop.com', N'Banani,Dhaka', N'01235645448')
INSERT [dbo].[UserInformation] ([UserName], [Password], [Role], [Email], [Address], [ContactNo]) VALUES (N'admin5', N'admin123', N'Admin', N'admin5@supershop.com', N'Dhaka', N'0171544559')
INSERT [dbo].[UserInformation] ([UserName], [Password], [Role], [Email], [Address], [ContactNo]) VALUES (N'admin7', N'123', N'Admin', N'admin9@supershop.com', N'Dhaka', N'0171544559')
INSERT [dbo].[UserInformation] ([UserName], [Password], [Role], [Email], [Address], [ContactNo]) VALUES (N'admin8', N'123', N'Admin', N'admin5@supershop.com', N'Dhaka', N'0171544559')
INSERT [dbo].[UserInformation] ([UserName], [Password], [Role], [Email], [Address], [ContactNo]) VALUES (N'Aishee', N'123', N'Seller', N'aishee@gmail.com', N'Dhaka', N'')
INSERT [dbo].[UserInformation] ([UserName], [Password], [Role], [Email], [Address], [ContactNo]) VALUES (N'dipro', N'123', N'Admin', N'admin9@supershop.com', N'Dhaka', N'0171544559')
INSERT [dbo].[UserInformation] ([UserName], [Password], [Role], [Email], [Address], [ContactNo]) VALUES (N'niyan', N'123', N'seller', N'niyan@supershop.com', N'Dhaka', NULL)
INSERT [dbo].[UserInformation] ([UserName], [Password], [Role], [Email], [Address], [ContactNo]) VALUES (N'seller', N'seller123', N'seller', N'seller@supershop.com', N'Dhaka', NULL)
INSERT [dbo].[UserInformation] ([UserName], [Password], [Role], [Email], [Address], [ContactNo]) VALUES (N'seller2', N'123', N'Admin', N'seller2@supershop.com', N'Dhaka', N'0171544559')
INSERT [dbo].[UserInformation] ([UserName], [Password], [Role], [Email], [Address], [ContactNo]) VALUES (N'seller3', N'123', N'Seller', N'seller3@supershop.com', N'Dhaka', N'0171544559')

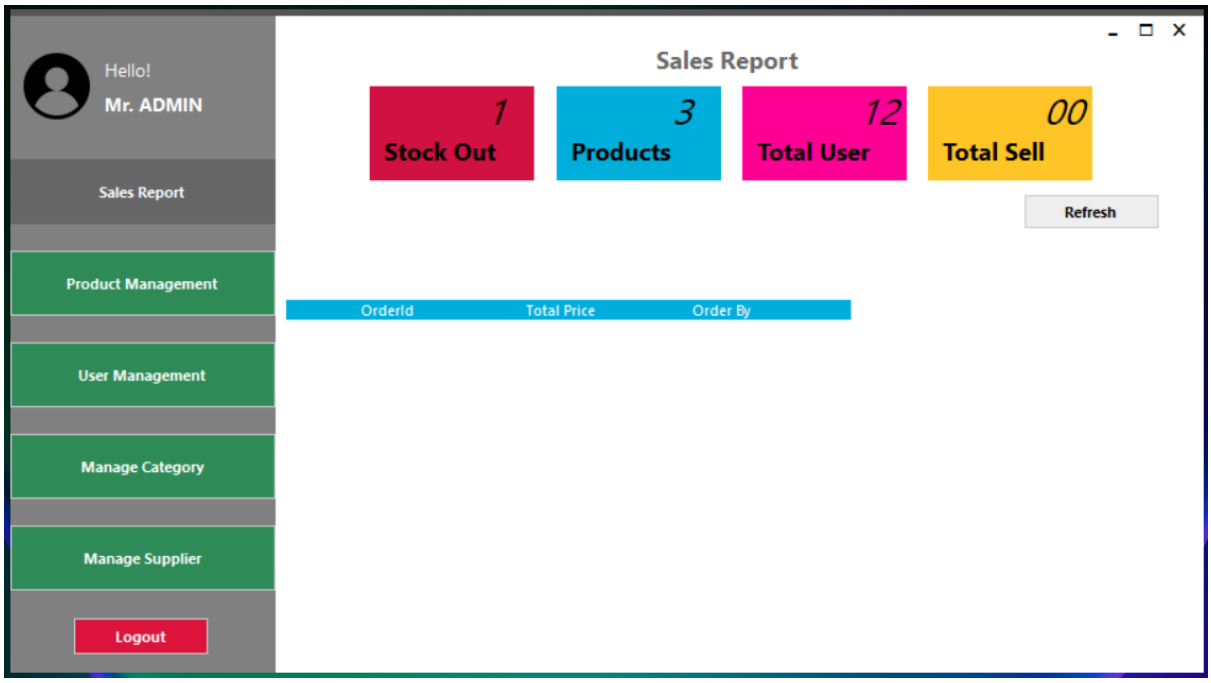
INSERT [dbo].[UserInformation] ([UserName], [Password], [Role], [Email], [Address], [ContactNo]) VALUES (N'tahsin', N'123', N'Admin', N'tahsin@supershop.com', N'Gazipur', N'')
INSERT [dbo].[UserInformation] ([UserName], [Password], [Role], [Email], [Address], [ContactNo]) VALUES (N'user777', N'123', N'Seller', N'user777@gmail.com', N'', N'')

Chapter:04
Screenshots

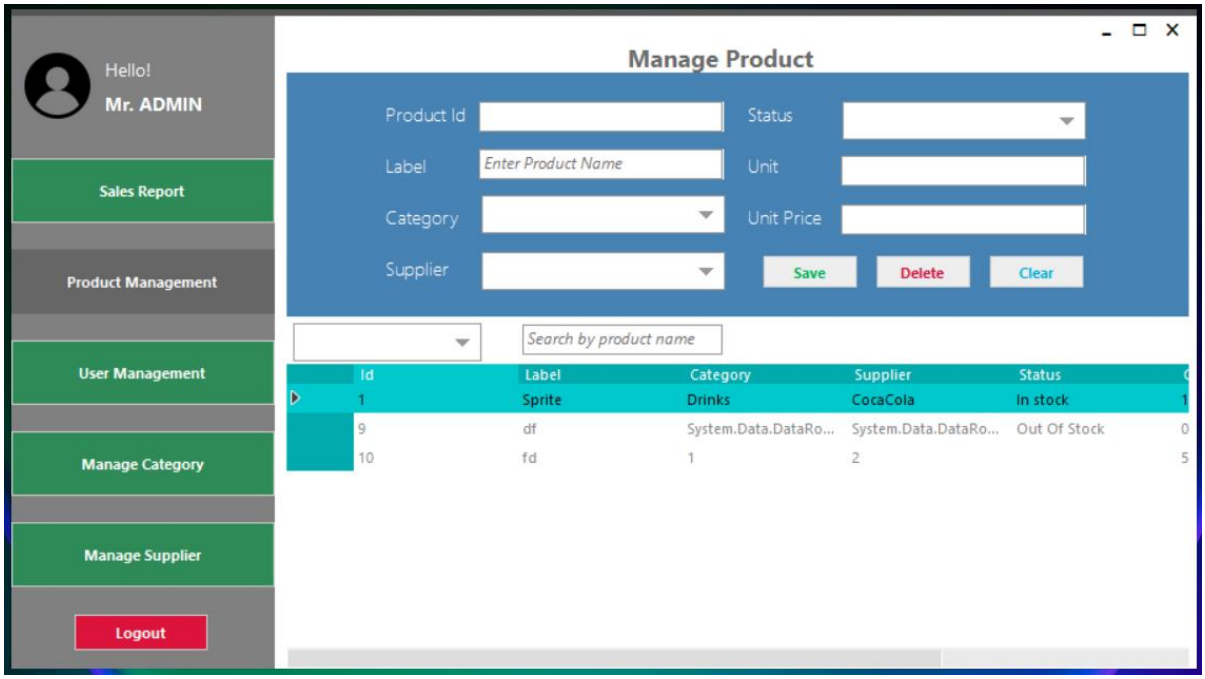
Login:



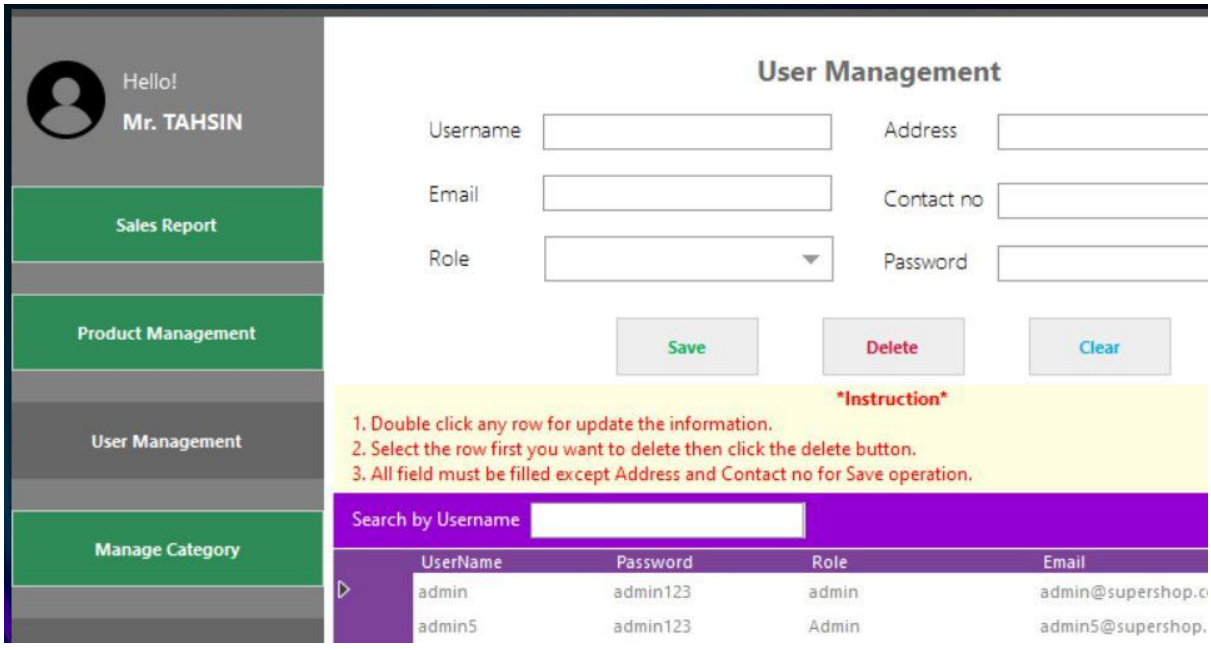
Sales Report for Admin:



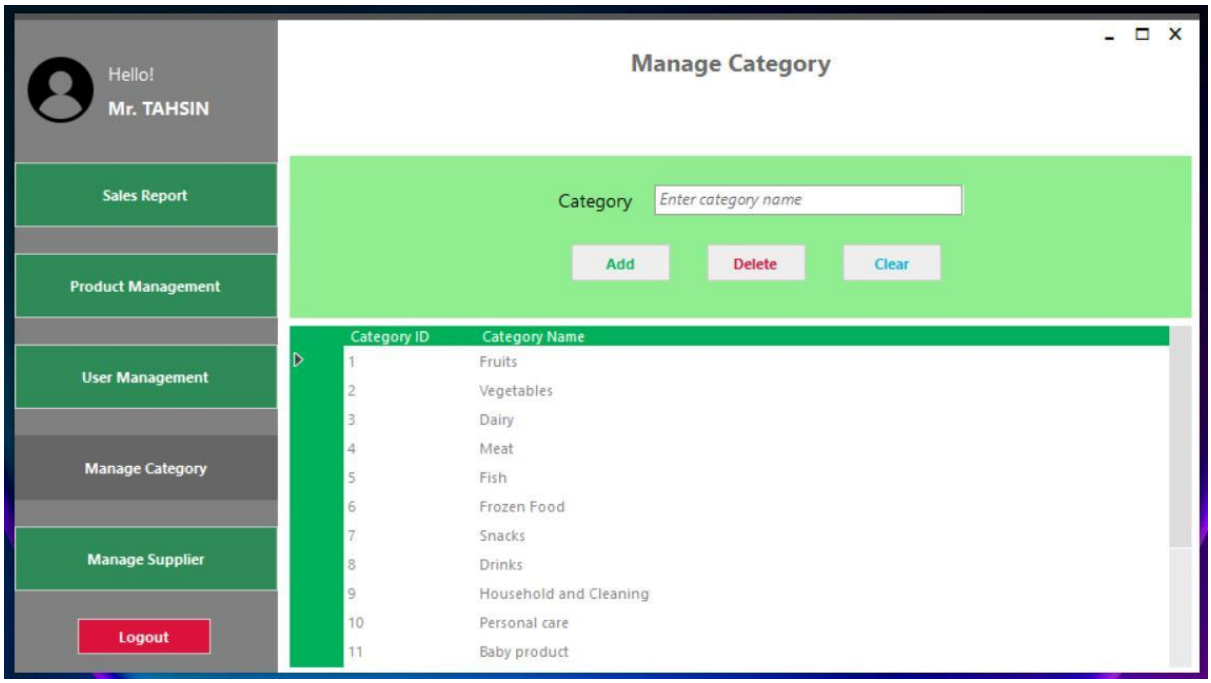
Product Management for Admin:



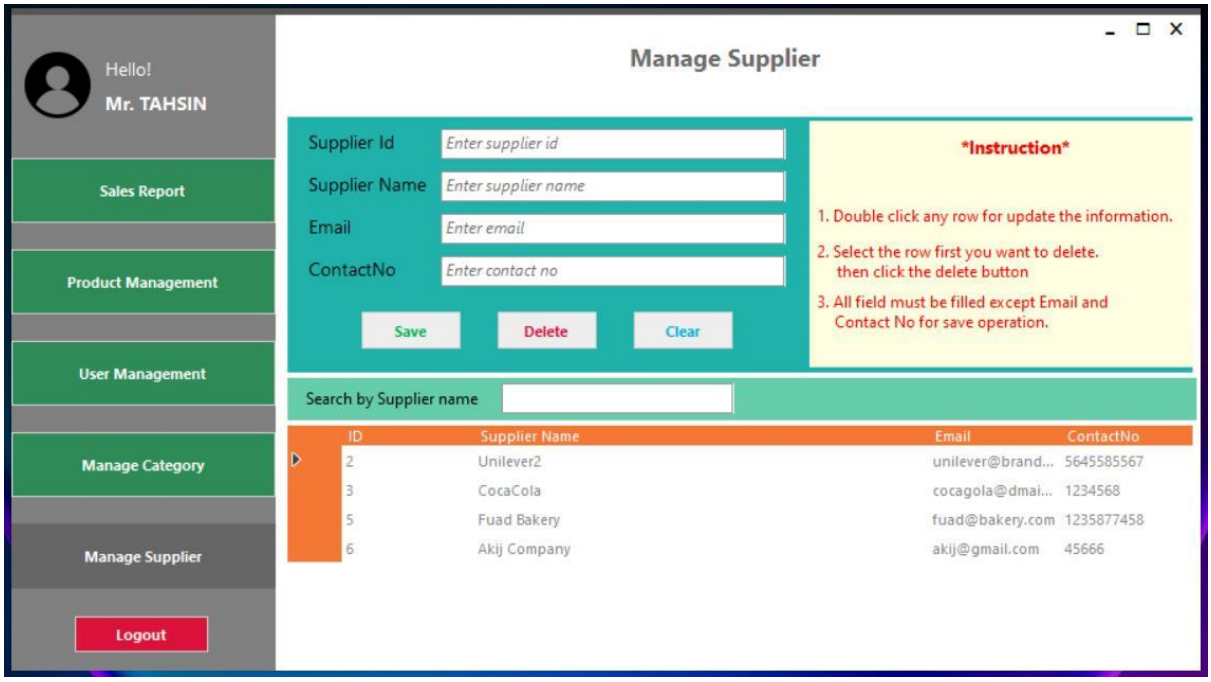
User Management for Admin:



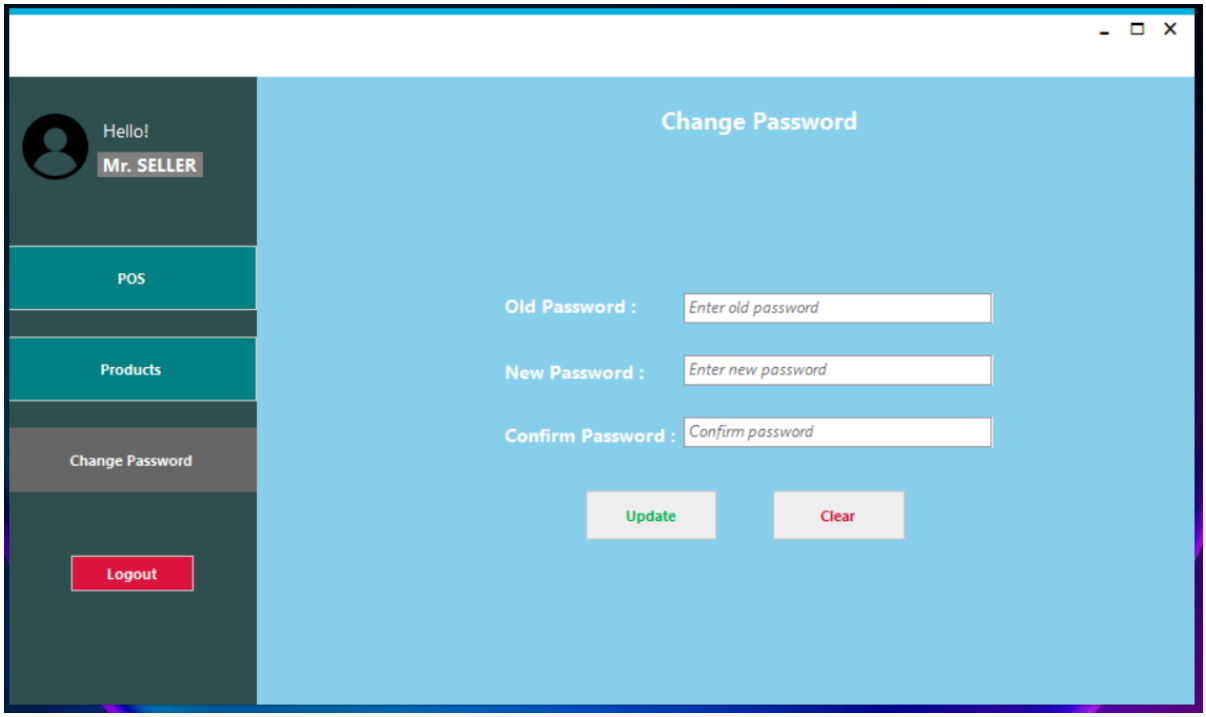
Category Management for Admin:



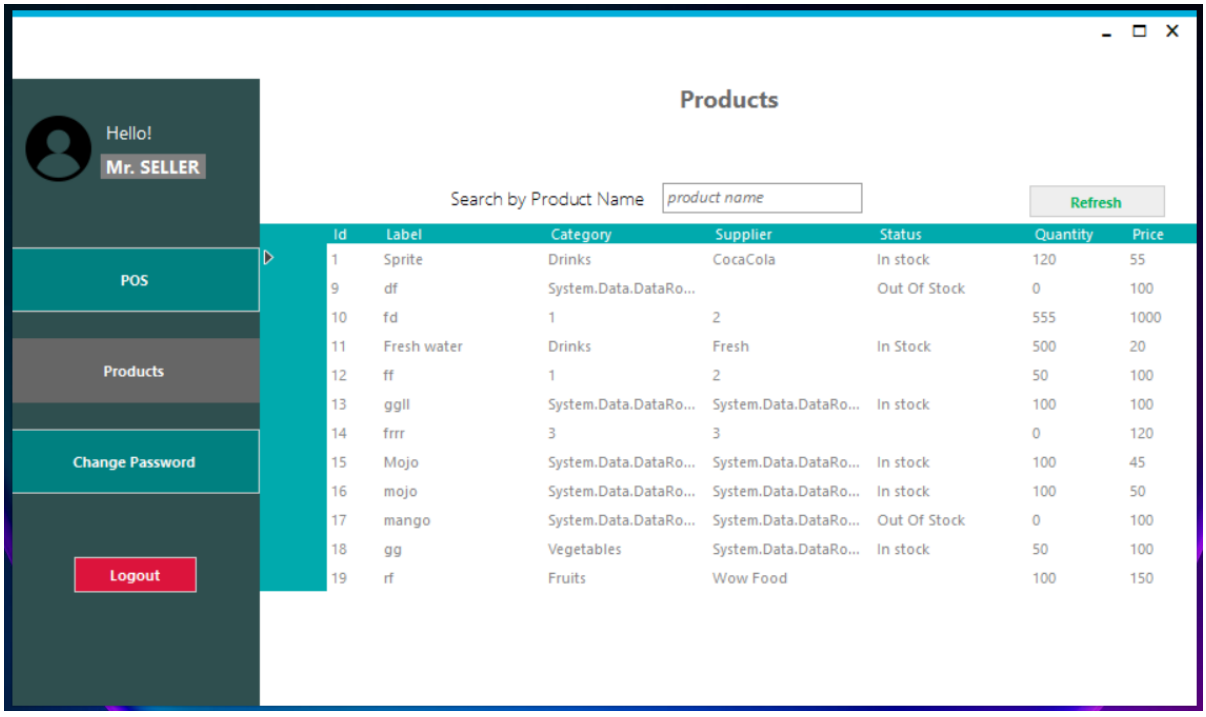
Supplier Management for Admin:



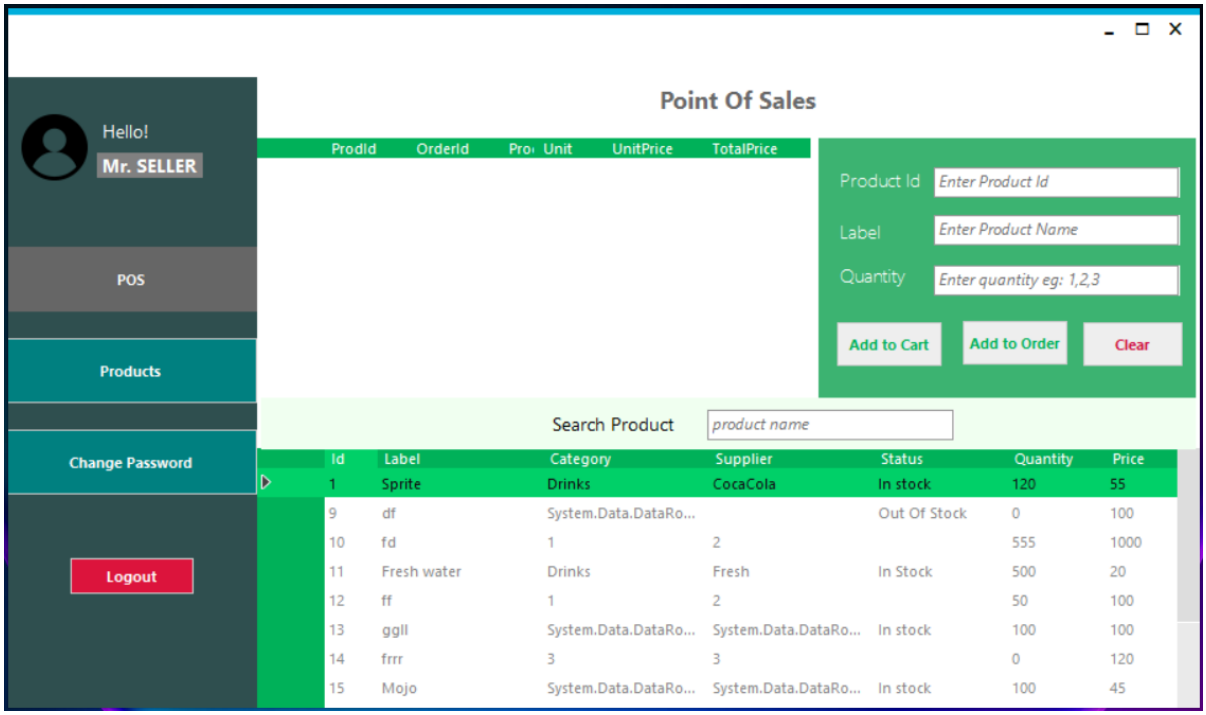
Password Change:



View Product For Seller:



Sell Product For Seller:



The End