



SE107.3

C#

Group Project

**P.O.S
Design**



Project By -
Group 23
Batch of 20.3

Acknowledgment

This project undoubtedly tested our skills as individuals and as a team. Additionally, it helped us increase our management, co-operational and leadership skills. Every person in the team put their effort into making this a passion project, perfecting the system with each iteration and bug patches.

Firstly, we would like to thank our C# Module Lecturer, Mr. Pramudya Tilakaratne, for the vast amounts of knowledge and guidance he has given to us, as well as the module instructors, especially Mr. Indrajith Ekanayake who helped us get ahead of our various shortcomings throughout the semester.

This Project was a team effort with each member contributing a lot to make this system work successfully.

Group Details

Index No.	Member Name	Contributions
_____	MSM Wijenayake (Group Leader) _____	Cashier Main Form, Food Details Form, Cashier Update Form, Food Update Form, Admin Create Form, Admin Delete Form, Overall Concept, UX Designing, Bug Correction, Overall Project Supervision.
_____	GVNN Galpola	Cashier Create Form, Cashier Delete Form, Bug Finding, Concept Providing
_____	AAAS Munasinghe	Cashier Find Form, Food Find Form, Bug Finding, Concept Providing, Project Report Creation
_____	KDV Jayarathna	Welcome Form, Admin View Revenue Form, Concept Providing
_____	EMRA Edirisinghe	Admin Main Form, Database Designing, UI Concept, Designing and UI Creation
_____	PVS Gomes	Admin Login Form, Cashier Login Form, Concept Providing, Database Creation
_____	AIAA Hasan	Admin Main Form, Cashier Food Details Form, Concept Providing, Project Report Creation and Documentation.
_____	KDJP Wijegunawardhana	Admin Login Form, Cashier Login Form, Concept Providing. Logo and Background Designing, UI Designing

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Introduction

Our Team aims to create a Point of Sales system for the Company Smart Meals, and their goal to create a system that would allow for faster transactions with the Customer as well as creating a way to calculate the daily earnings etc. Thus, streamlining the work process. The creation of this system was approached by the team using additional .NET frameworks to and customized User Interfaces.

The final product allows the client to Login both Cashiers and Admins, the latter being able to assign new cashiers, reset their login attempts if the need arises, change or update the database and check the daily revenue.

Each cashier is given multiple attempts to enter their respective credentials and enter the system. Failure will lock them out of the system and an admin will have to review and reinstate their access to the system. Logging in as an Admin will give the user access privileges to the database to change or update the data. As well as the afore mentioned ability to reinstate access to the cashiers who failed login (Doing this resets the cashier's login tries to 5). Admin will also be able to give access to new cashiers (after signing them up on the system) calculate the daily Revenue and Submit it to the database. This system also provides receipts to keep track of each transaction.

The team took the use of GUNAUI to make the design of the system to be informative, along with being aesthetically pleasing to the user. These design choices make sure that our system can be recognized among any existing peers.

Explanation

Request Letter from Client

221/B Baker St,
London, NW1 6XE
England.

Date: 04/07/2021

Dear Sir,

Subject: In Reference to the proposed new POS software.

I received your email for the project proposal for the POS software, I really like the features which you have got in store for us. If its possible I would like to add some new features for the software as well, here are the expected requirements.

1. Inbuilt Function where only I have master access (where I can check daily sales, add, and remove cashiers and food items).
2. 2 main types of interfaces,
 - i. Admin
 - ii. cashier
3. In your mail you stated that a database will be used as well, I'd prefer if I can have the database located locally.
4. In the above-mentioned database, I want to store both my employee details and food item details separately as well.

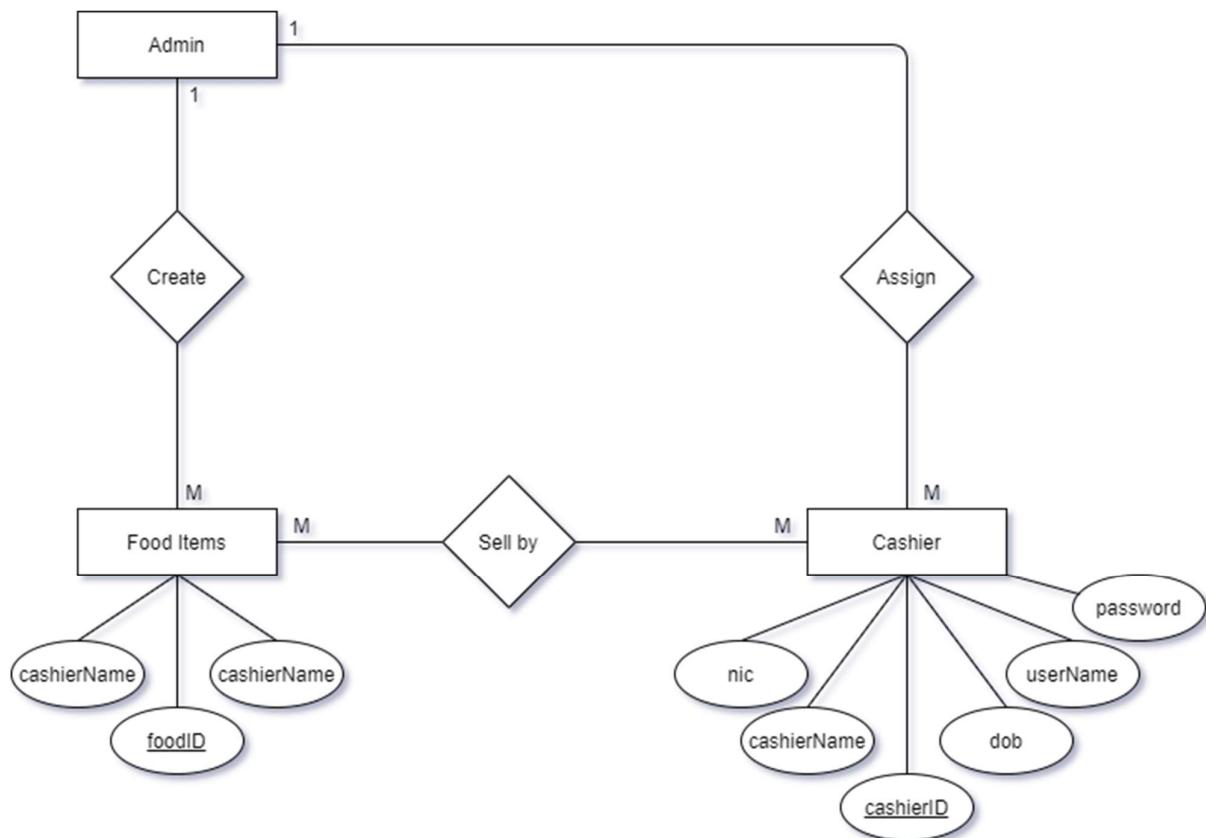
Looking for a reasonable response,

Regards

Smart Meals Owner (Mr. Smart)

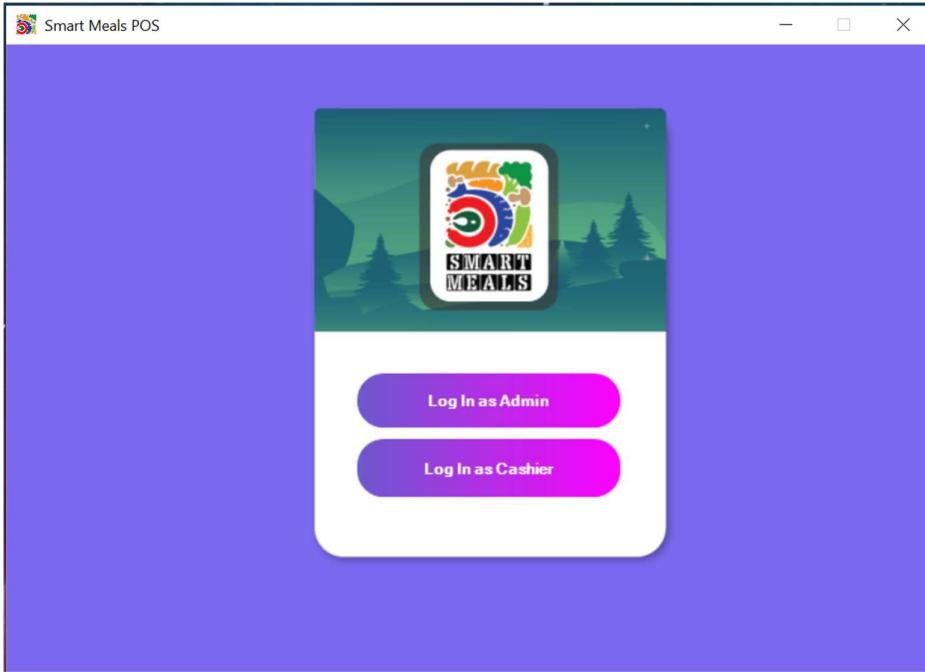
ER Diagram

In Smart Meals(PVT) Ltd. There are many cashiers who are eligible for selling food for customers alongside a printed bill. All the cashiers are assigned and handled by an admin who can create, edit, update, and delete cashier details like the username, password etc. in the system. Admin can assign many cashiers but there is only one admin available. Admin also handles the food details. Admin can create, update, read, delete Food item details like Item name and item price. Multiple Items can be created by the Admin.



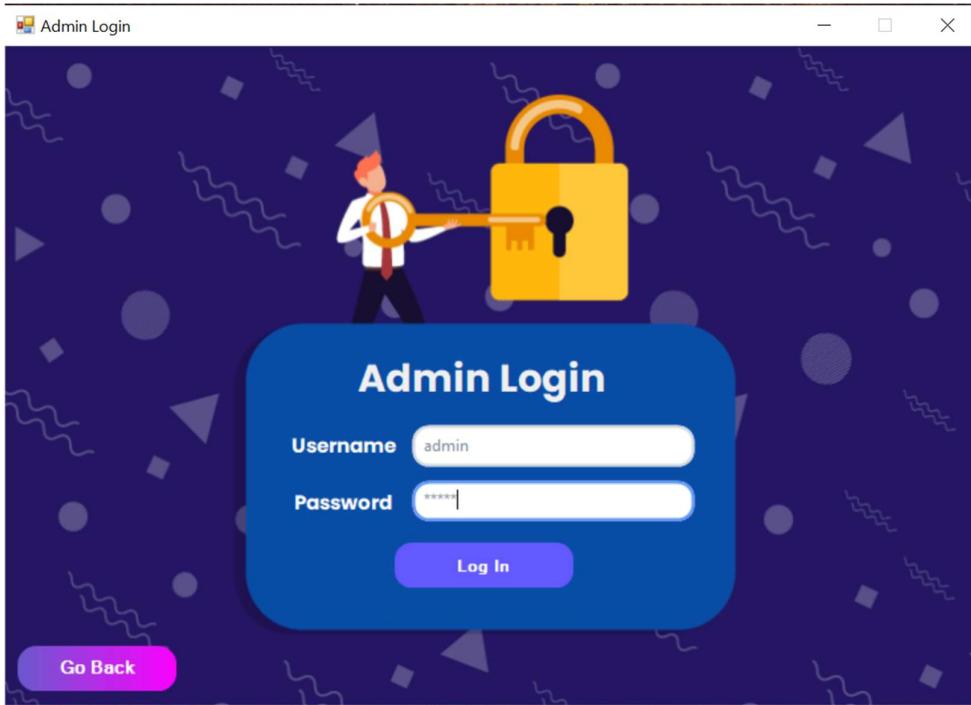
Samples of Developed System

Welcome Interface



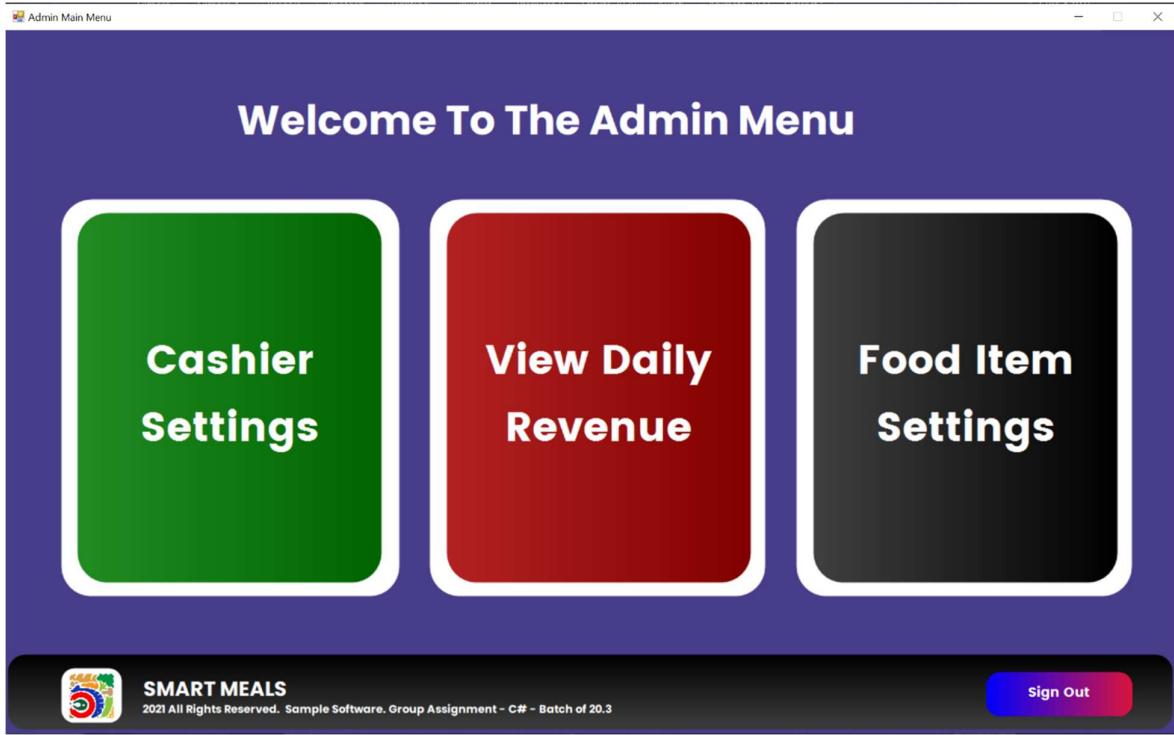
Basic user Login for Admin and Cashier

Admin Login



Admin Login interface, each admin has a unique username and an encrypted password

Welcome To the Admin Menu



In this menu the admin can choose to update the cashier and item setting or check the revenue.

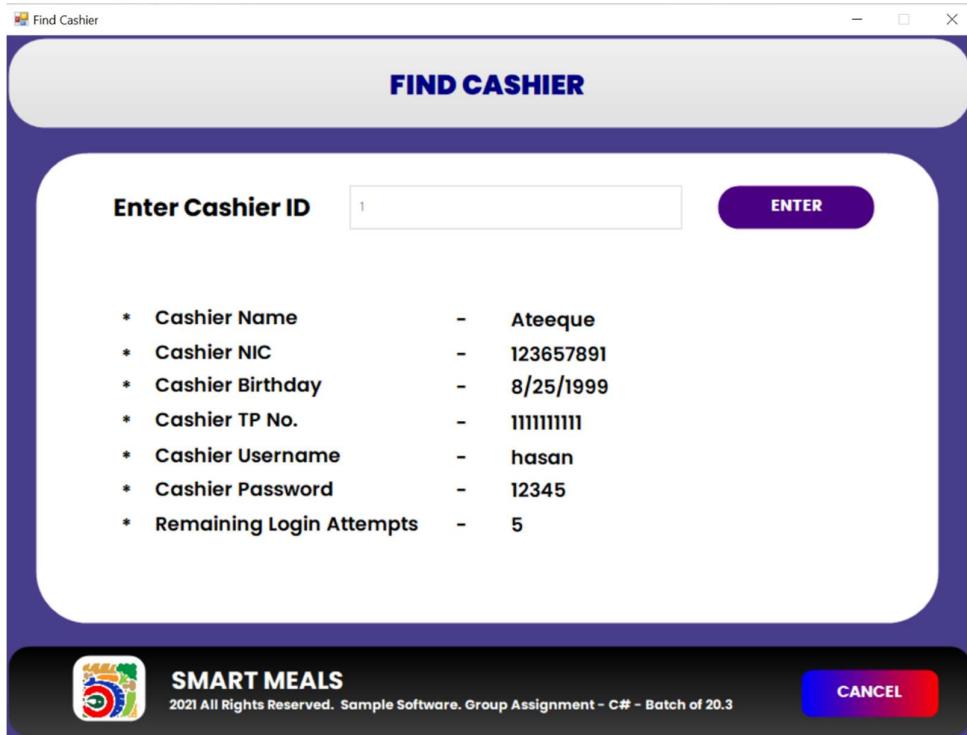
Cashier Settings

The screenshot shows a Windows application window titled "CASHIER SETTINGS". At the top, there are three buttons: "Refresh" (blue), "CASHIER SETTINGS" (centered in a grey bar), and "Return to Admin Menu" (blue). Below the title is a table with columns: CashierID, Name, Nic, Username, Password, RemainingLoginAttempts, BirthDay, and TelephoneNumber. The table contains 10 rows of data. At the bottom of the main content area are four circular buttons labeled "Find", "Create", "Update", and "Delete", followed by a large red button labeled "Reset Cashier Attempts". The footer of the window includes the "SMART MEALS" logo, the text "2021 All Rights Reserved. Sample Software. Group Assignment - C# - Batch of 20.3", and a "LOGOUT" button.

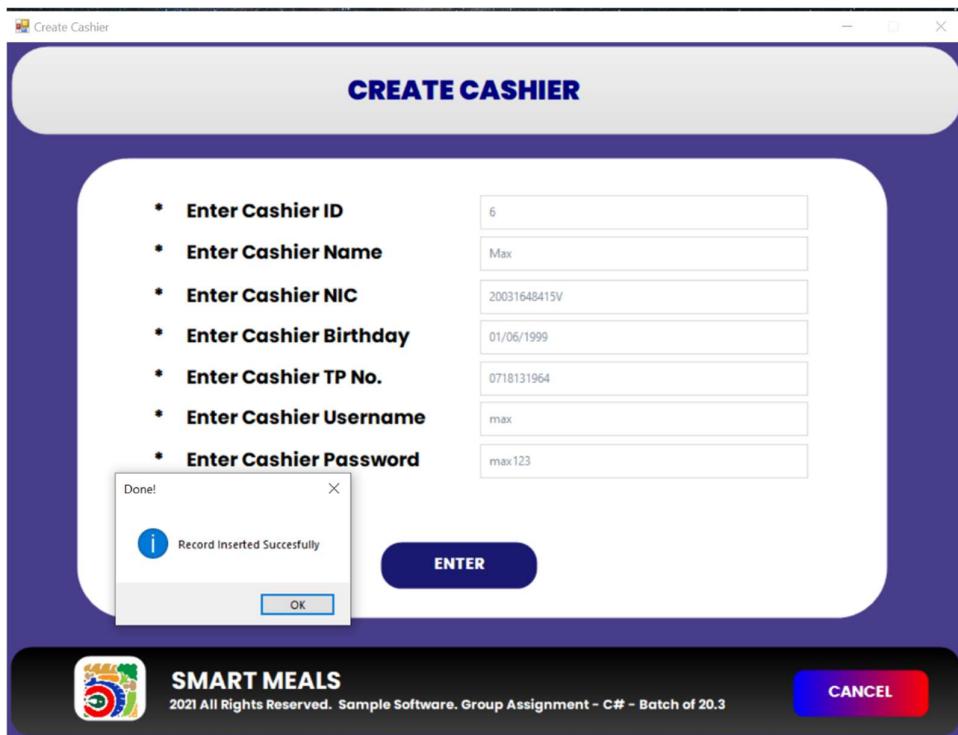
	CashierID	Name	Nic	Username	Password	RemainingLoginAttempts	BirthDay	TelephoneNumber
▶	1	Ateeque	76598075V	hasan	12345	1	8/25/1999	0113646455
	2	Sudeera	200364598763	sudeera	sudeera1234	5	12/8/1999	0113598455
	3	Ruchira	201026548979	ruchira	ruchira123	5	11/8/2010	0112364895
	4	nawarathna	202015456557	nimma	nimma123	4	11/2/2020	0113265482
	5	Anuda	200135642414	anuda	anuda123	5	12/4/2025	033462214
	21858	Sudeera Wijenaya...	200133903422	mssmwijenayake	0000	5	12/4/2001	0112905186

Over here the admin can see the database of current cashiers enrolled in the company, including the cashiers ID, name, NIC and the Remaining Login Attempts.

Find Button



Under the find button, if the admin need to find a specific employee using their Employee ID , its possible .



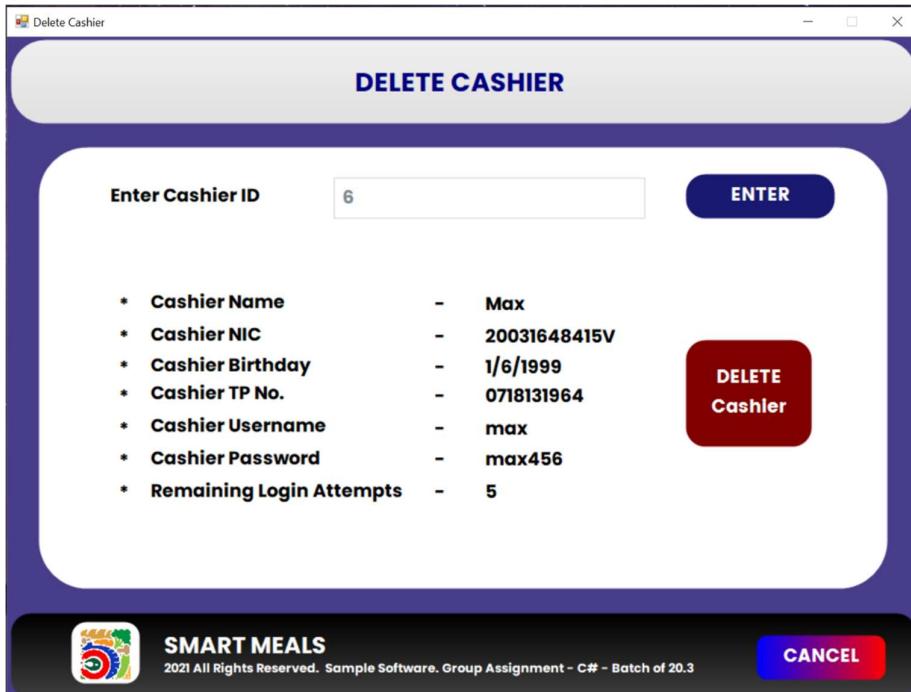
Update Button

Enter Cashier ID		ENTER
* Cashier Name	- Max	UPDATE
* Cashier NIC	- 20031648415V	UPDATE
* Cashier Birthday	- 1/6/1999	UPDATE
* Cashier TP No.	- 0718131964	UPDATE
Cashier Username - max		UPDATE
Cashier Password - maxt23		UPDATE

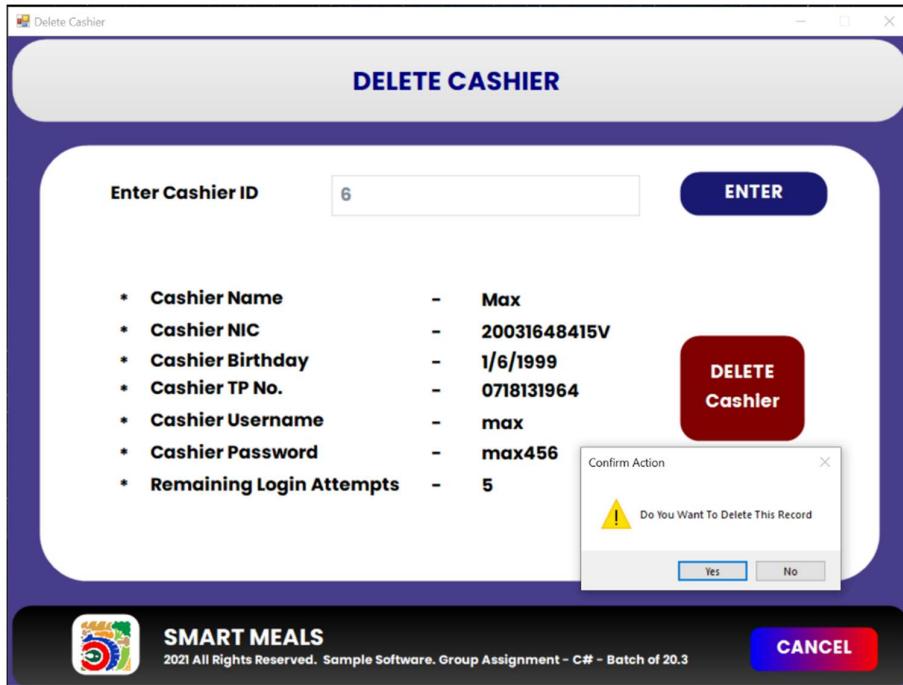
In this menu, in case an employee changes Telephone no, or requires to changes the username or Password, they can request the admin to do so.

Enter Cashier ID		ENTER
* Cashier Name	- Max	UPDATE
* Cashier NIC	- 20031648415V	UPDATE
* Cashier Birthday	- 1/6/1999	UPDATE
* Cashier TP No.	- 0718131964	UPDATE
Cashier Username - max		UPDATE
Cashier Password - maxt23		UPDATE

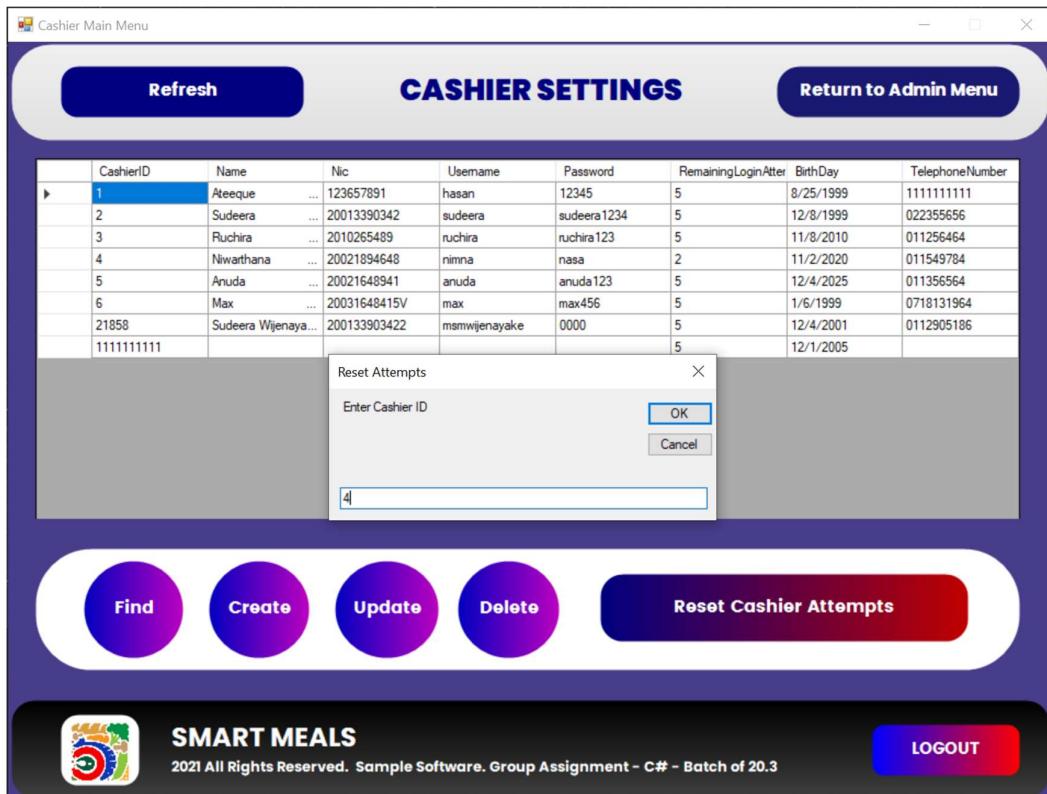
Delete Button



Under this menu, when a specific employee decides to leave the company, the admin can remove the respective employee details through this menu.

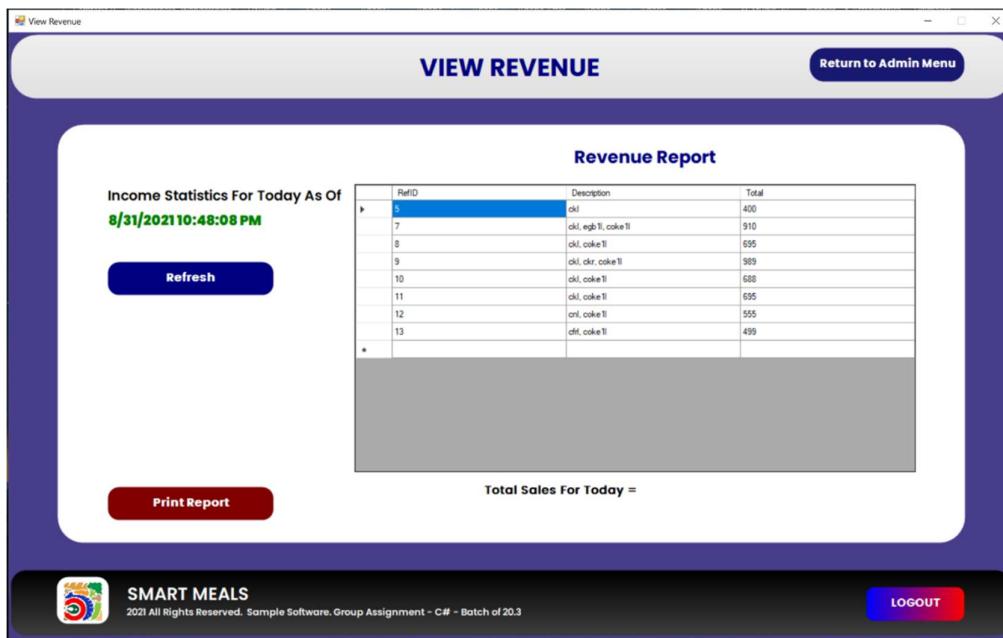


Reset Cashier Attempts

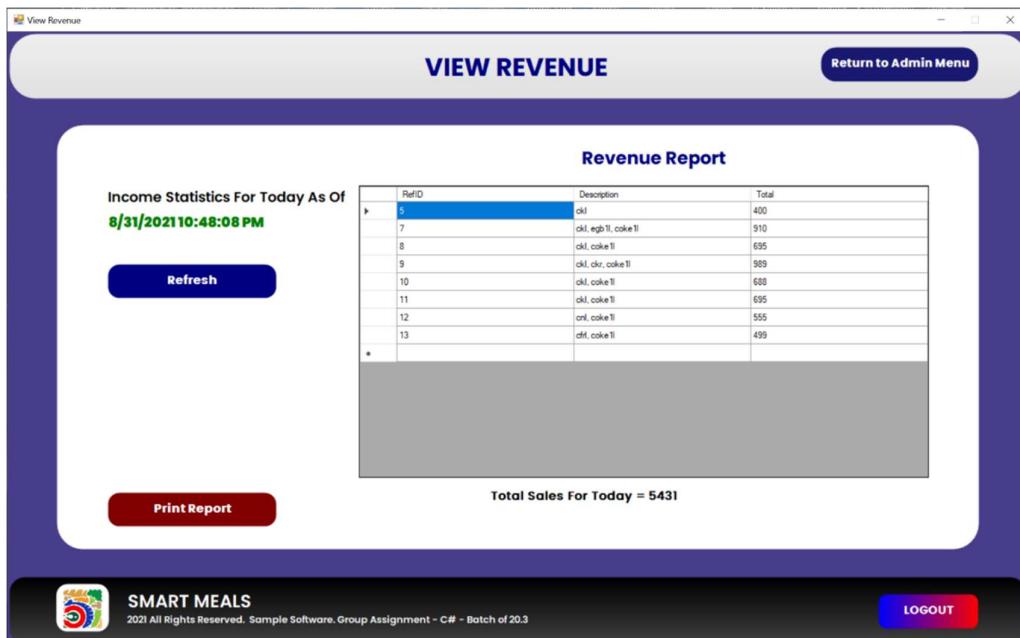


In this menu, when employees have run out of login attempts after forgetting the password or username, they have to request the admin to reset their attempts and update their username or password.

Revenue & Expenditures

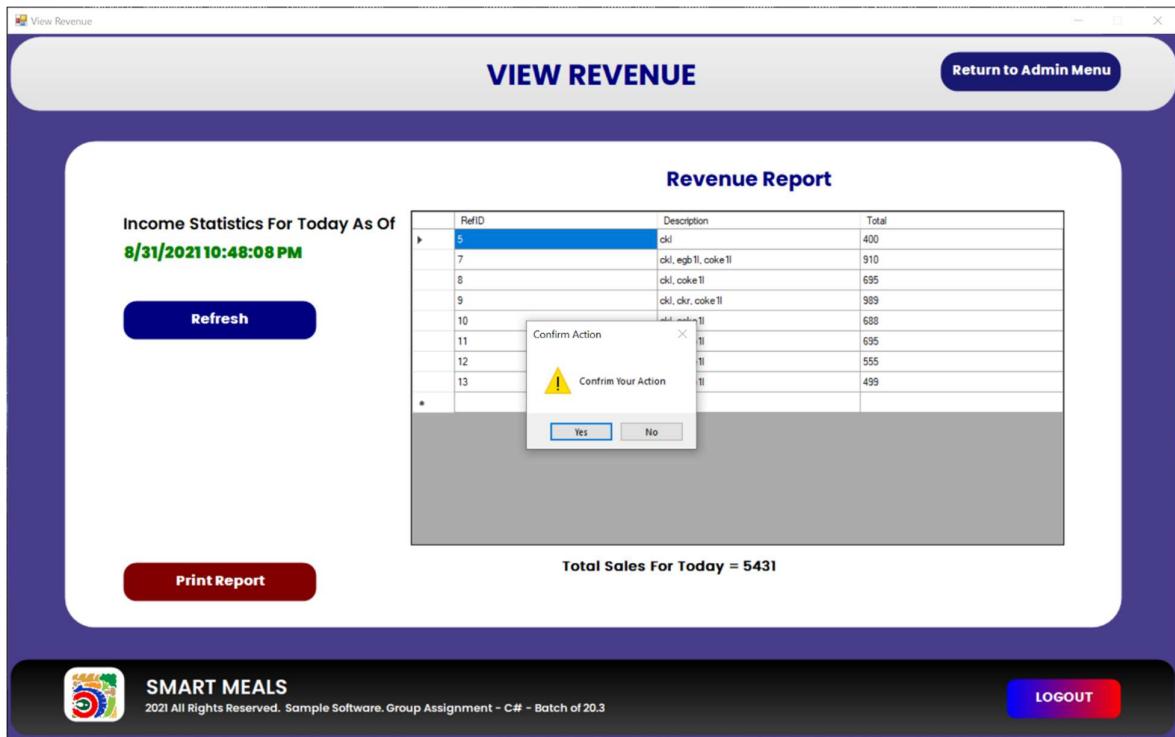


In this menu, the admin has access to see the daily revenue and print the complete report or save the report in the local drive.

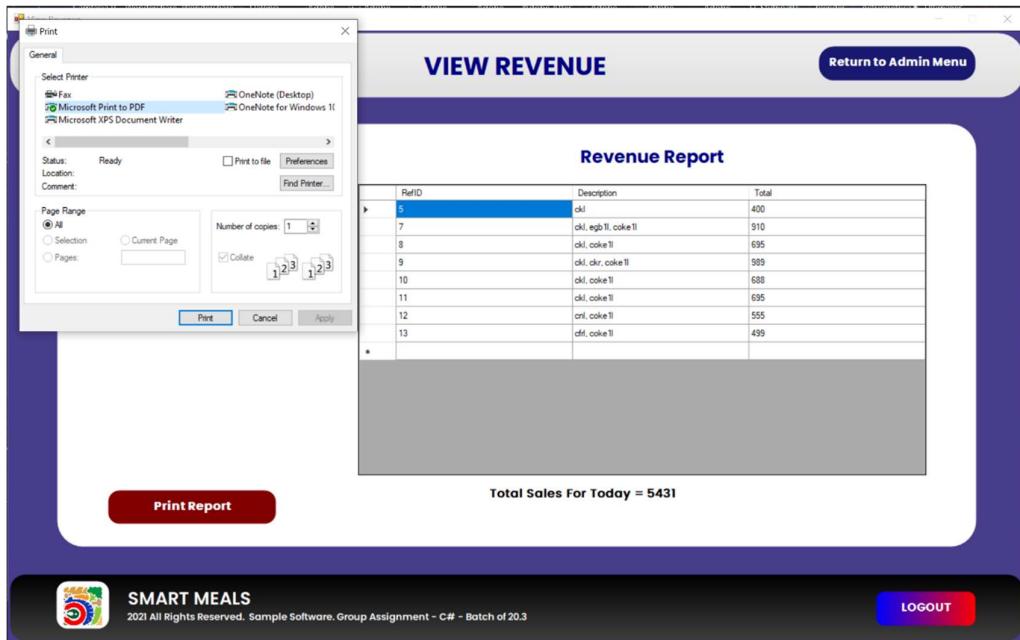


As you can see in the above image, the interface calculates the daily revenue, including the reference ID and the items which were sold through each individual bills. This calculation occurs when the user clicks the "Refresh" button.

Print and Save Revenue Report



As you can see, you can print the daily revenue reports, or save them as a soft copy like down below



The screenshot shows a software interface for a meal delivery service. At the top right is a "Return to Admin Menu" button. Below it is a "Revenue Report" section containing a table of sales data:

Description	Total
chl	400
chl, egb ll, coke ll	910
chl, coke ll	695
chl, ckr, coke ll	389
chl, coke ll	688
chl, coke ll	695
crl, coke ll	555
crl, coke ll	499

Below the report is a message: "Total Sales For Today = 5431". A "Print Report" button is located at the bottom left of the report area. At the bottom center is a logo for "SMART MEALS" with the text "2021 All Rights Reserved. Sample Software. Group Assignment - C# - Batch of 20.3". On the far right is a "LOGOUT" button.

A "Save Print Output As" dialog box is overlaid on the main window, prompting the user to save the print output to a file named "Bill1.pdf" on the Desktop. The dialog includes "Save" and "Cancel" buttons.

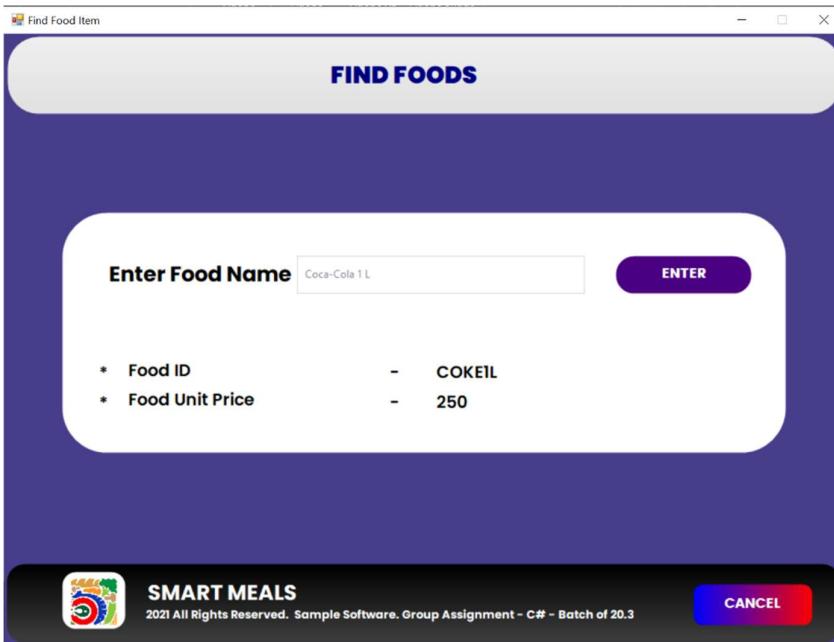
Item Settings

The screenshot shows a web-based application titled "FOOD ITEM SETTINGS". At the top, there are "Refresh" and "Return to Admin Menu" buttons. The main content area displays a table of food items with columns for FoodID, FoodName, and UnitPrice. Below the table is a row of four circular buttons labeled "Find", "Create", "Update", and "Delete". At the bottom, there is a logo for "SMART MEALS" and a copyright notice: "2021 All Rights Reserved. Sample Software. Group Assignment - C# - Batch of 20.3". A "LOGOUT" button is also present.

FoodID	FoodName	UnitPrice
CFRL	Chicken Fried-Rice Large	200
CFRR	Chicken Fried-Rice Regular	300
CKL	Chicken Kottu Large	400
CKR	Chicken Kottu Regular	300
CNL	Chicken Noodles Large	300
CNR	Chicken Noodles Regular	200
COKE1L	Coca-Cola 1 L	250
COKE500ML	Coca-Cola 500 ML	250
EGB1L	EGB 1 Litre	200
EGB500ML	EGB 500 ML	100
EKL	Egg Kottu Large	350
EKR	Egg Kottu Regular	250
ENL	Egg Noodles Large	250
ENR	Egg Noodles Regular	150
ERT	Egg Rotti	40

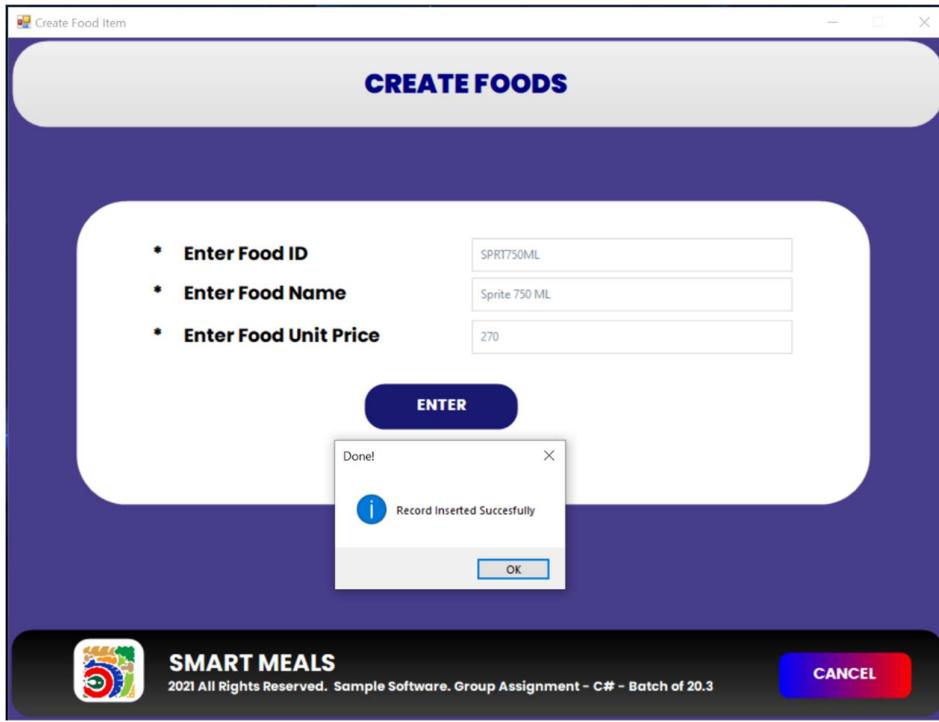
In this menu the admin can see the current list of available items, price and the Food ID

Find Button



Admin could use this menu to find if specific food items and the relevant Food ID and its Price.

Create Button



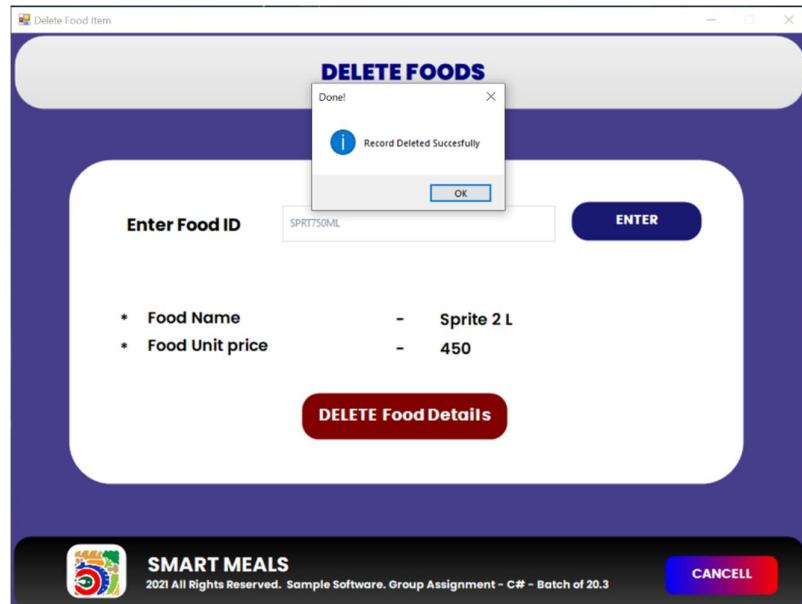
When a new food item is added to the list, the admin could come over to this menu and give the relevant food ID and its price as shown above.

Update Button



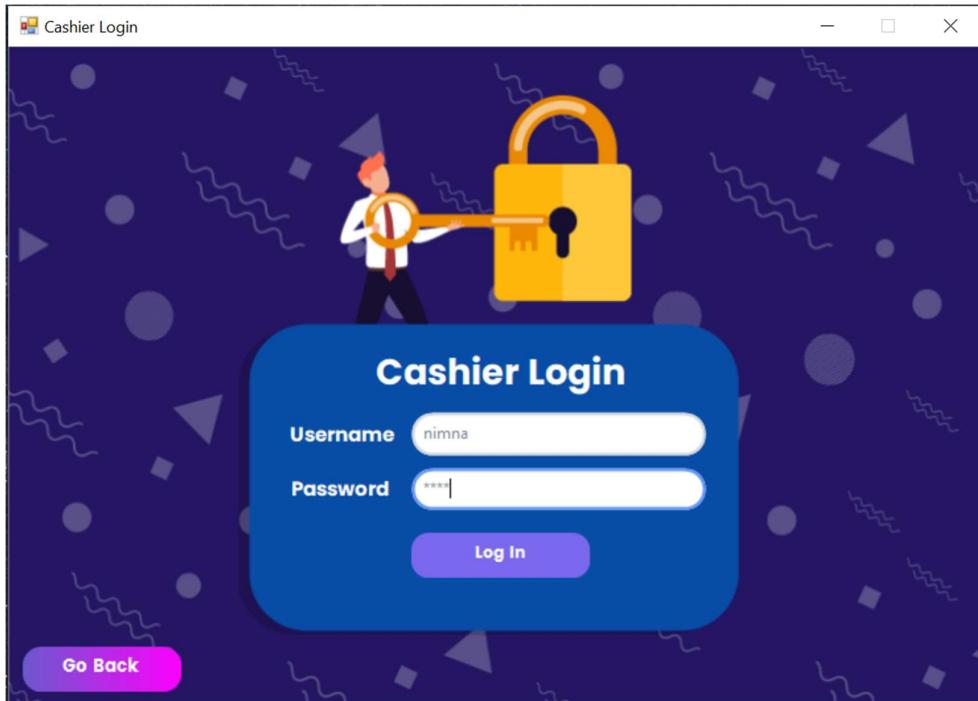
In this page the admin can update the food from the database, as shown above Sprite decided to discontinue the 2L and instead came up with a new 750ml , so now the admin could update the new name and price.

Delete Button

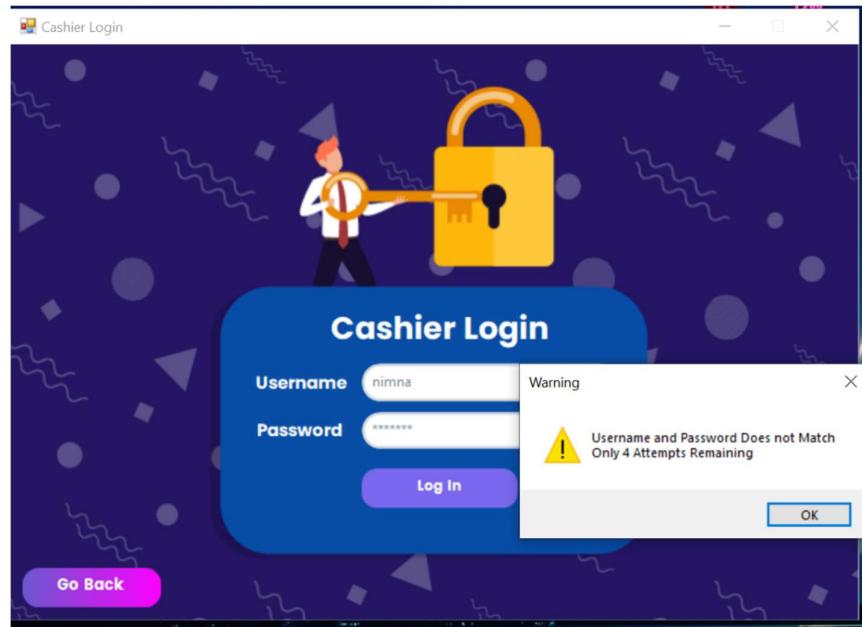


Since sprite decided to remove the 2L, we can remove that from our database from this menu.

Cashier Login



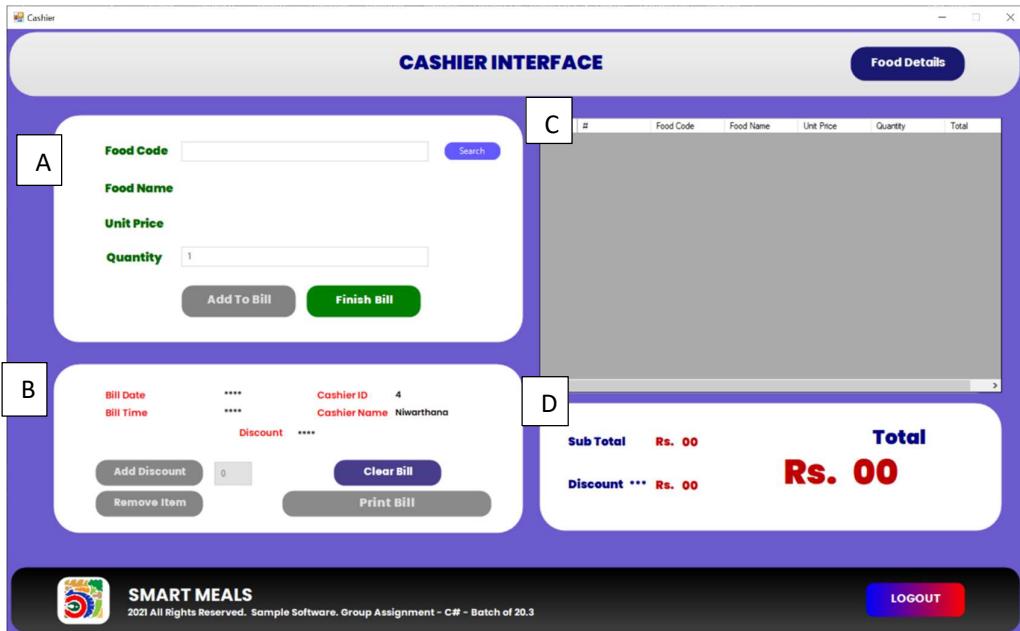
Same as the admin Login interface, each Cashier has a unique username and an encrypted password



When the user enters the incorrect username or password a popup will show the remaining login attempts.

Welcome to the Cashier Interface

New Bill



This is the Cashier interface of our POS system, and it has 4 main parts.

- A- This is where the cashier adds items to the bill /and finishes the bill
- B- This dialog shows the cashier information, like name, ID and if a customer has a discount code they could let the cashier know and the cashier could apply the said code in the discount section.
- C- This is the section where the bill gets formed, with all the items, quantity and the total.
- D- Over here the total value of the bill is calculated and how much you saved from the discount is shown as well.

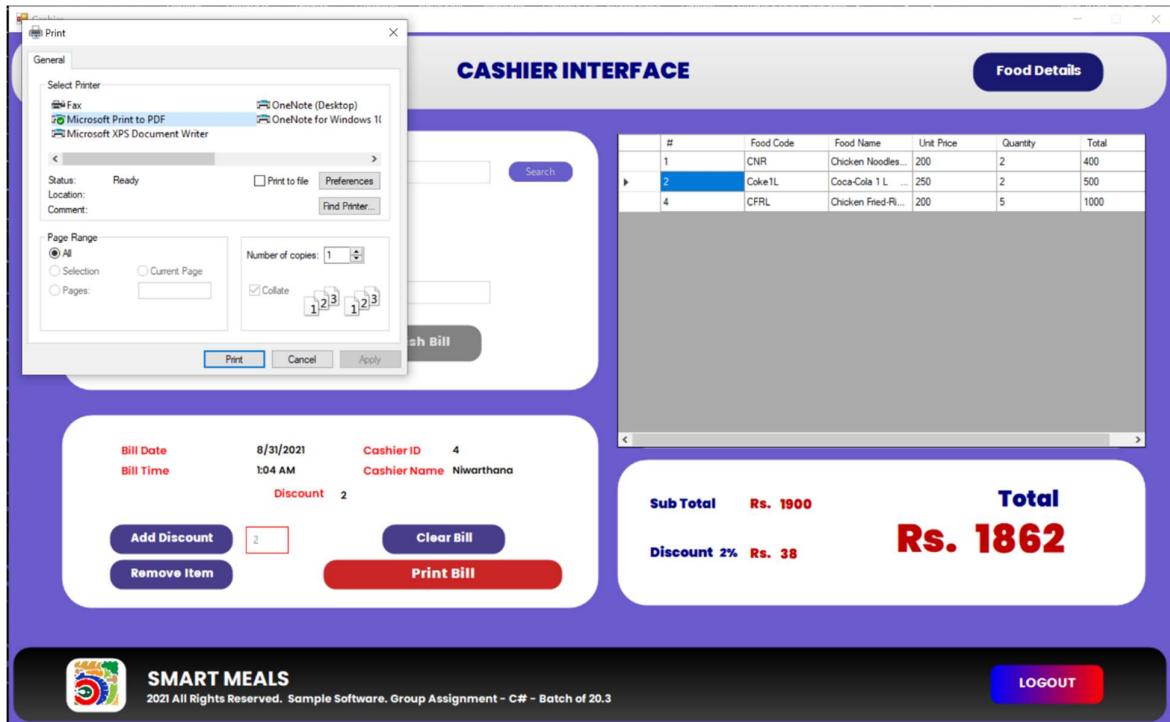
Processed Bill

The screenshot displays the "CASHIER INTERFACE" window. On the left, there's a form for adding items to a bill, featuring fields for Food Code, Food Name, Unit Price, and Quantity, along with "Add To Bill" and "Finish Bill" buttons. Below this is a summary section with Bill Date (8/31/2021), Bill Time (1:04 AM), Cashier ID (4), Cashier Name (Niwarthana), and a Discount field set to 2. It also includes buttons for "Add Discount", "Remove Item", "Clear Bill", and "Print Bill". On the right, a "Food Details" table shows the items added: CNR (Chicken Noodles), Coke1L (Coca-Cola 1 L), and CFRL (Chicken Fried Rice). The table includes columns for #, Food Code, Food Name, Unit Price, Quantity, and Total. At the bottom right, the total amount is displayed as **Total Rs. 1862**, with a breakdown of Sub Total (Rs. 1900) and Discount (2% Rs. 38). The footer contains the "SMART MEALS" logo, copyright information (2021 All Rights Reserved. Sample Software. Group Assignment - C# - Batch of 20.3), and a "LOGOUT" button.

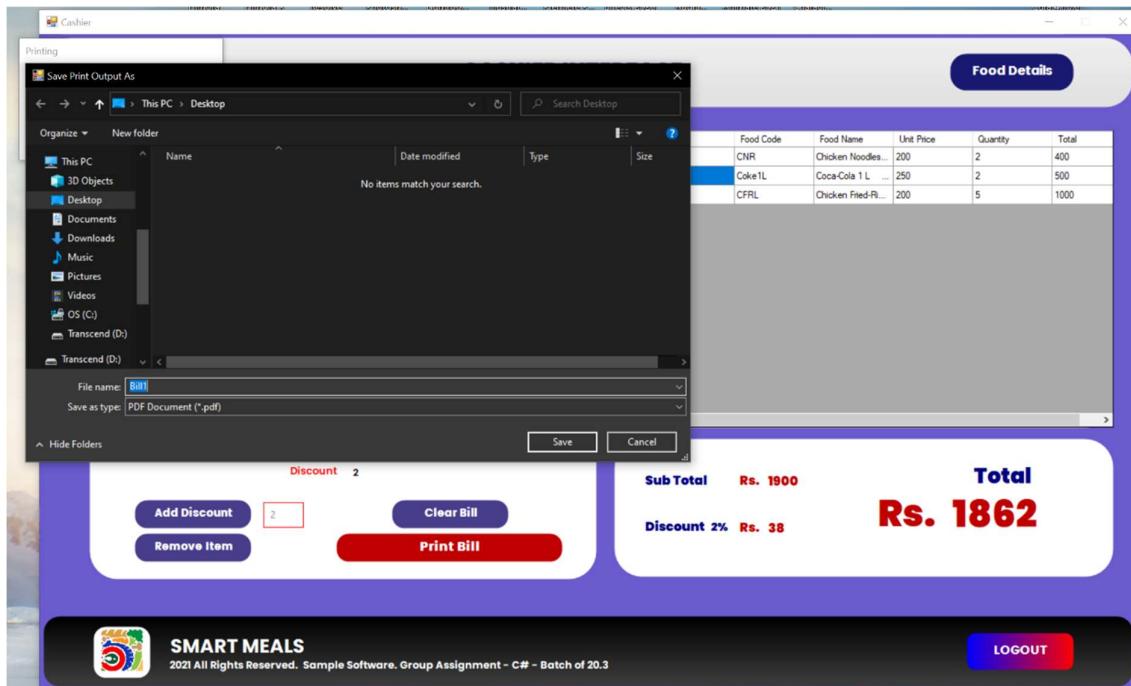
#	Food Code	Food Name	Unit Price	Quantity	Total
1	CNR	Chicken Noodles...	200	2	400
2	Coke1L	Coca-Cola 1 L ...	250	2	500
4	CFRL	Chicken Fried-Ri...	200	5	1000

As explained above this is how the interface would look like after the bill is completed. Cashier must “Finish Bill” so that the interface would calculate the Total and the amount saved by the discount.

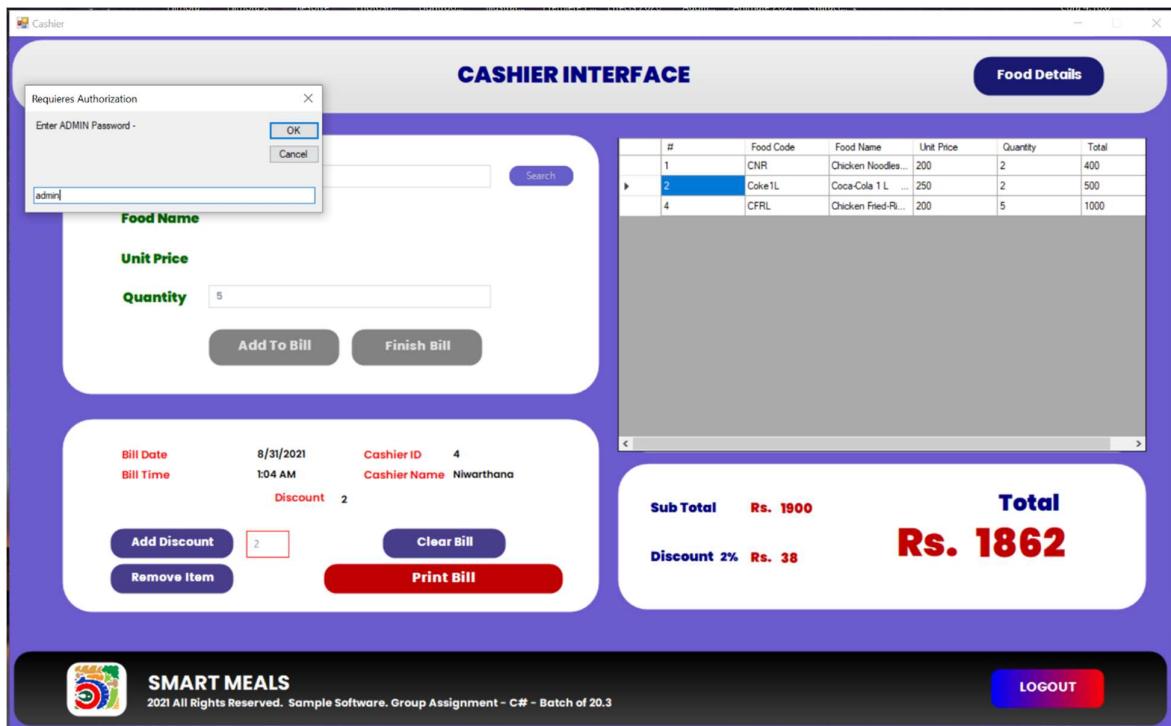
Print & Save Bill



After successfully finishing the bill, the cashier can print the bill and had it over to the customer and at the same time the cashier can save this bill to the local drive as well if necessary.



However, to save the bills in the local drive, the cashier would need access from the admin.



To clear the ongoing bill the cashier need the authorization from the ADMIN for security reasons.

- End of Report -