



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
21155	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, Admin Food Item Main Form Overall Project Supervision.
21495	GVNN Galpola	Cashier Create Form, Cashier Delete Form, Bug Finding, Concept Providing
21511	AAAS Munasinghe	Cashier Find Form, Food Find Form, Bug Finding, Concept Providing, Project Report Creation
21478	KDV Jayarathna	Welcome Form, Admin View Revenue Form, Concept Providing
21487	EMRA Edirisinghe	Admin Main Form, Database Designing, UI Concept, Designing and UI Creation
21495	PVS Gomes	Admin Login Form, Cashier Login Form, Concept Providing, Database Creation
20958	AIAA Hasan	Admin Cashier Main Form, Cashier Food Details Form, Concept Providing, Project Report Creation and Documentation.
21918	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 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.

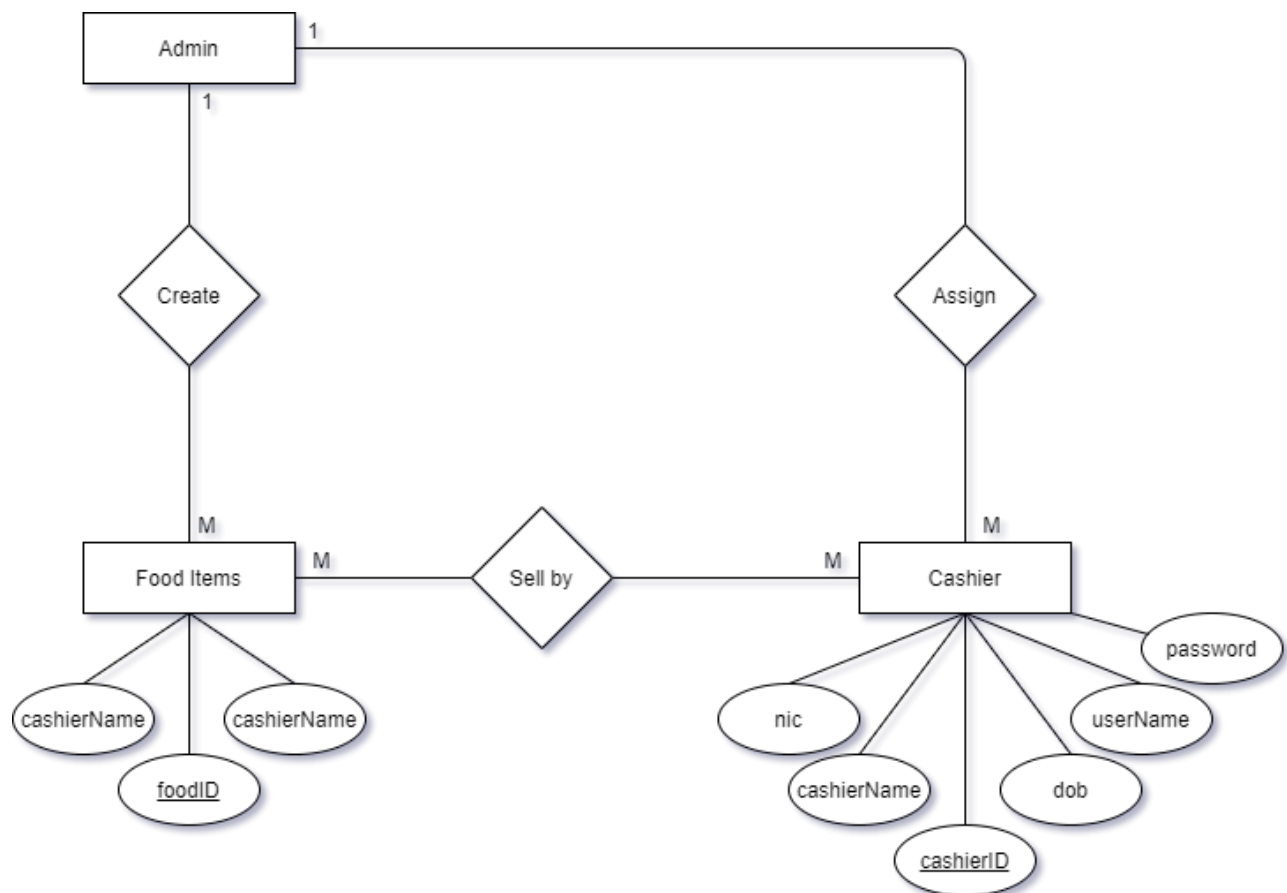
Looking for a reasonable response,

Regards

Smart Meals Owner (Mr. Smart)

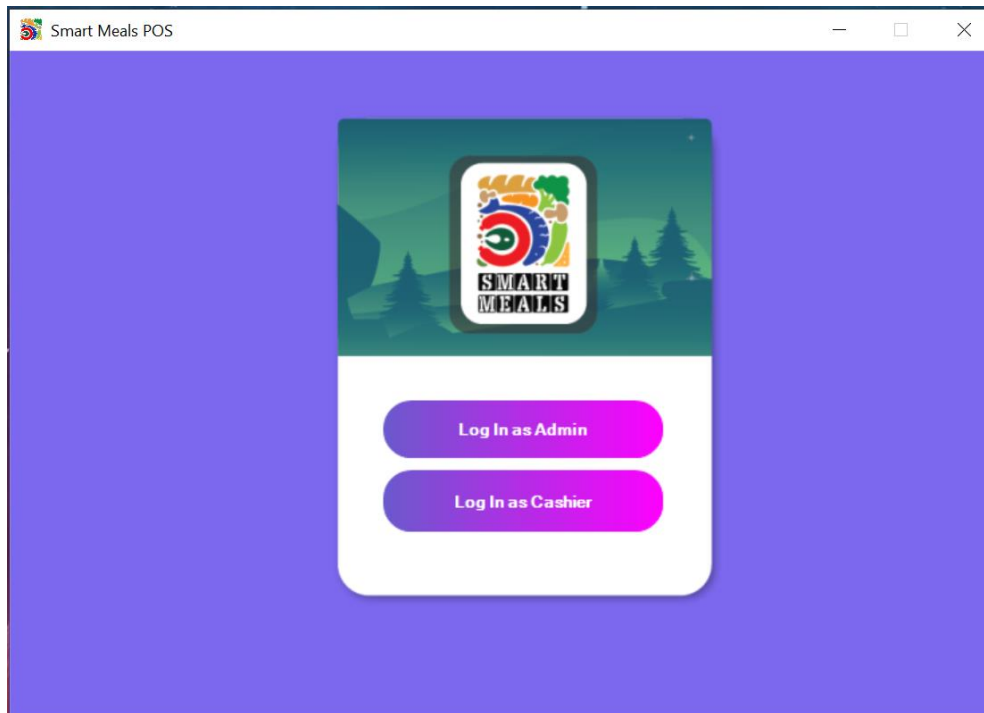
ER Diagram

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.



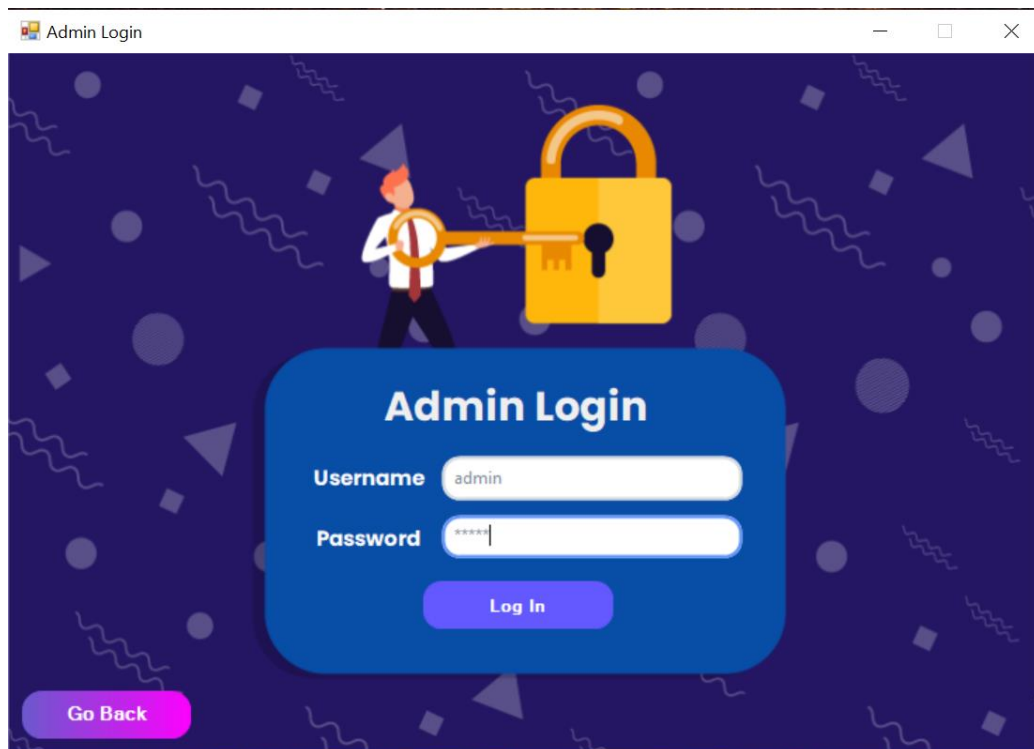
Samples of Developed System

Welcome Interface



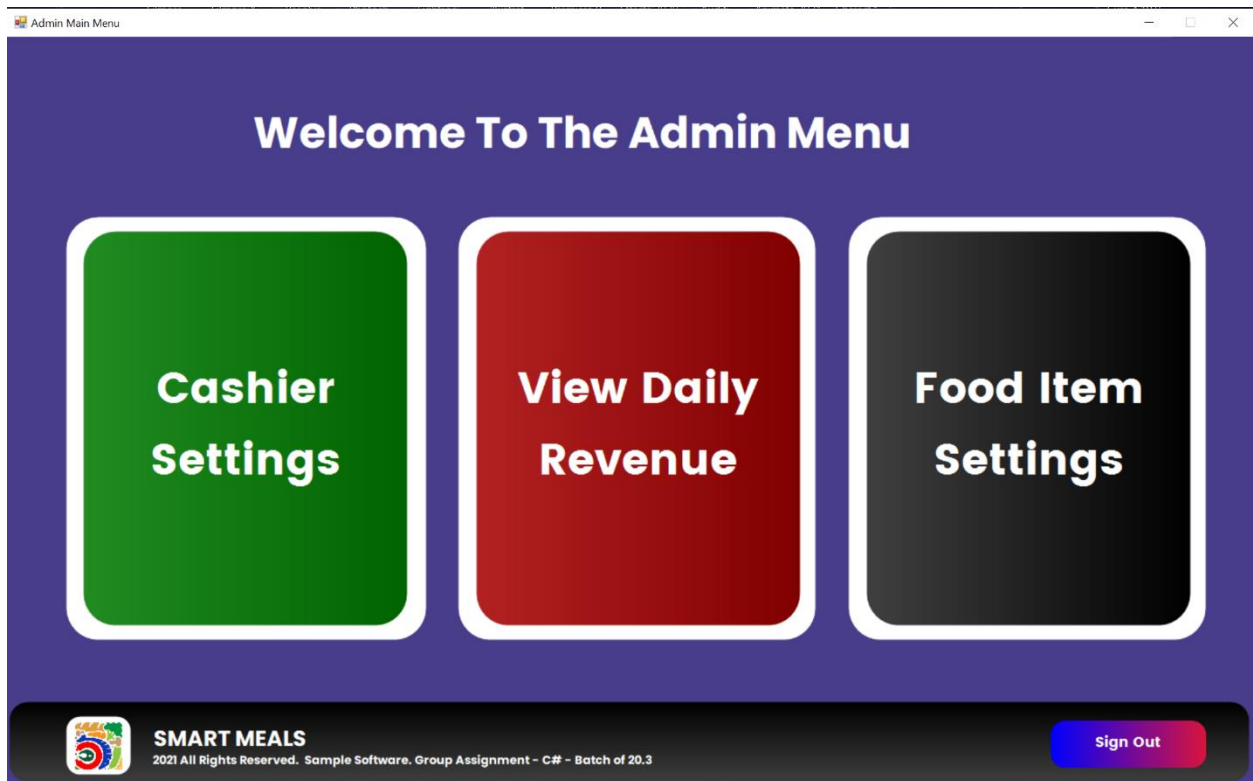
Basic user Login for Admin and Cashier

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

Cashier Main Menu

Refresh

CASHIER SETTINGS

Return to Admin Menu

	CashierID	Name	Nic	Username	Password	RemainingLoginAtter	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	nimna	nimna123	4	11/2/2020	0113265482
	5	Anuda	...	200135642414	anuda	anuda123	5	12/4/2025	0334462214
	21858	Sudeera Wijenaya...	...	200133903422	msmwijenayake	0000	5	12/4/2001	0112905186


Find

Create

Update

Delete

Reset Cashier Attempts



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LOGOUT

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

FIND CASHIER

Enter Cashier ID **ENTER**

- * Cashier Name - Ateeque
- * Cashier NIC - 123657891
- * Cashier Birthday - 8/25/1999
- * Cashier TP No. - 111111111
- * Cashier Username - hasan
- * Cashier Password - 12345
- * Remaining Login Attempts - 5

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

CREATE CASHIER

- * Enter Cashier ID
- * Enter Cashier Name
- * Enter Cashier NIC
- * Enter Cashier Birthday
- * Enter Cashier TP No.
- * Enter Cashier Username
- * Enter Cashier Password

ENTER

Done!
Record Inserted Successfully
OK

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Update Button

UPDATE CASHIER

Enter Cashier ID **ENTER**

- * Cashier Name - -> **UPDATE**
- * Cashier NIC - -> **UPDATE**
- * Cashier Birthday - -> **UPDATE**
- * Cashier TP No. - -> **UPDATE**

- * Cashier Username - -> **UPDATE**
- * Cashier Password - -> **UPDATE**

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UPDATE CASHIER

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 - max123 -> **UPDATE**

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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.

UPDATE CASHIER

Enter Cashier ID **ENTER**

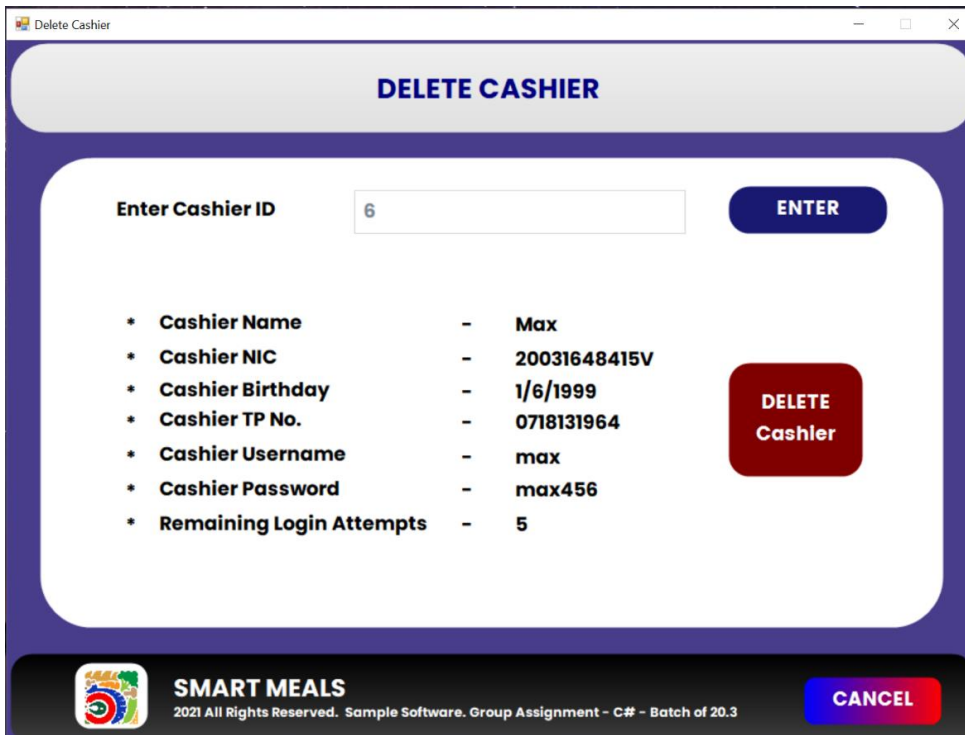
- * Cashier Name - Max -> **UPDATE**
- * Cashier NIC - 20031648415V -> **UPDATE**
- * Cashier Birthday - 1/6/1999 -> **UPDATE**
- * Cashier TP No. - 0718131964 -> **UPDATE**

- * Cashier Username - max -> **UPDATE**
- * Cashier Password - max123 -> **UPDATE**

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Update Done
OK

Delete Button

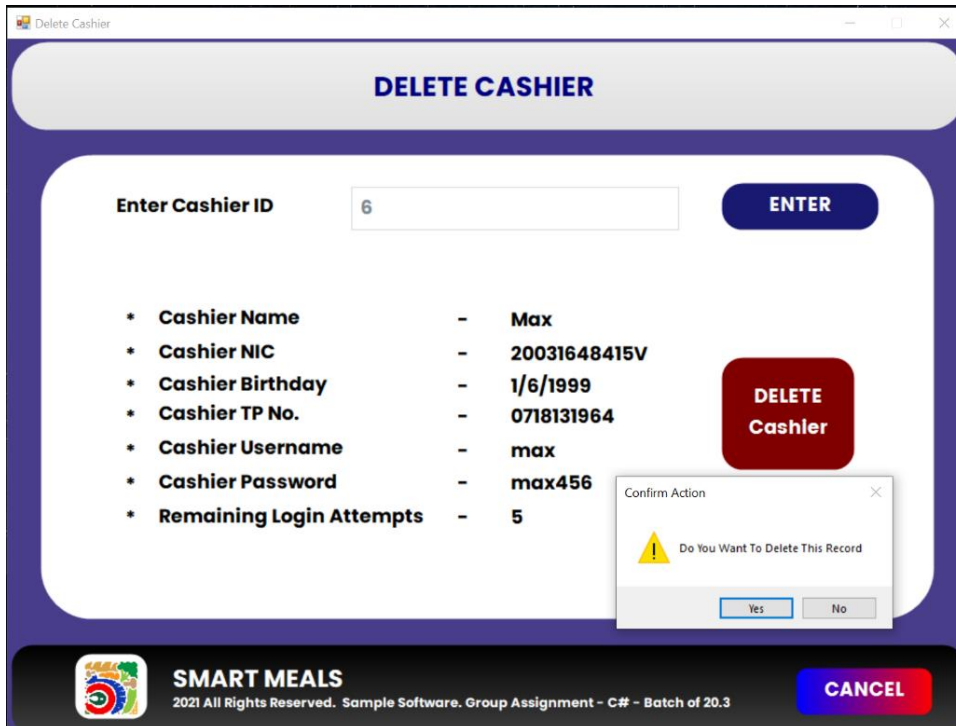


The screenshot shows a web application window titled "Delete Cashier". At the top, there is a header bar with the text "DELETE CASHIER". Below this, there is a form area with a label "Enter Cashier ID" and a text input field containing the number "6". To the right of the input field is a blue button labeled "ENTER". Below the input field, there is a list of cashier details:

- * Cashier Name - Max
- * Cashier NIC - 20031648415V
- * Cashier Birthday - 1/6/1999
- * Cashier TP No. - 0718131964
- * Cashier Username - max
- * Cashier Password - max456
- * Remaining Login Attempts - 5

To the right of this list is a red button labeled "DELETE Cashier". At the bottom of the window, there is a footer bar with the "SMART MEALS" logo, the text "2021 All Rights Reserved. Sample Software. Group Assignment - C# - Batch of 20.3", and a red button labeled "CANCEL".

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



This screenshot shows the same "DELETE CASHIER" window as the previous one, but with a confirmation dialog box open. The dialog box is titled "Confirm Action" and contains a yellow warning triangle icon and the text "Do You Want To Delete This Record". At the bottom of the dialog box are two buttons: "Yes" and "No". The background window remains the same, showing the cashier details and the "DELETE Cashier" button.

Reset Cashier Attempts

Cashier Main Menu

Refresh

CASHIER SETTINGS

Return to Admin Menu

CashierID	Name	Nic	Username	Password	RemainingLoginAtter	BirthDay	TelephoneNumber
1	Ateeque	...	hasan	12345	5	8/25/1999	1111111111
2	Sudeera	...	sudeera	sudeera1234	5	12/8/1999	022355656
3	Ruchira	...	ruchira	ruchira123	5	11/8/2010	011256464
4	Niwarthana	...	nimna	nasa	2	11/2/2020	011549784
5	Anuda	...	anuda	anuda123	5	12/4/2025	011356564
6	Max	...	max	max456	5	1/6/1999	0718131964
21858	Sudeera Wijenaya...	...	msmwijenayake	0000	5	12/4/2001	0112905186
1111111111					5	12/1/2005	

Reset Attempts

Enter Cashier ID

OK

Cancel

4


Find

Create

Update

Delete

Reset Cashier Attempts



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LOGOUT

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

VIEW REVENUE [Return to Admin Menu](#)

Revenue Report

Income Statistics For Today As Of
8/31/2021 10:48:08 PM

[Refresh](#)

RefID	Description	Total
5	ckl	400
7	ckl, egb ll, coke ll	910
8	ckl, coke ll	695
9	ckl, ckr, coke ll	989
10	ckl, coke ll	688
11	ckl, coke ll	695
12	cnt, coke ll	555
13	chf, coke ll	499
*		

[Print Report](#) **Total Sales For Today =**

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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.

VIEW REVENUE [Return to Admin Menu](#)

Revenue Report

Income Statistics For Today As Of
8/31/2021 10:48:08 PM

[Refresh](#)

RefID	Description	Total
5	ckl	400
7	ckl, egb ll, coke ll	910
8	ckl, coke ll	695
9	ckl, ckr, coke ll	989
10	ckl, coke ll	688
11	ckl, coke ll	695
12	cnt, coke ll	555
13	chf, coke ll	499
*		

[Print Report](#) **Total Sales For Today = 5431**

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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

VIEW REVENUE

Return to Admin Menu

Income Statistics For Today As Of

8/31/2021 10:48:08 PM

Refresh

Revenue Report

RefID	Description	Total
5	ckl	400
7	ckl, egb ll, coke ll	910
8	ckl, coke ll	695
9	ckl, ckr, coke ll	989
10	ckl, coke ll	688
11	ckl, coke ll	695
12	ckl, coke ll	555
13	ckl, coke ll	499

Confirm Action

Confirm Your Action

Yes No

Total Sales For Today = 5431

Print Report

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LOGOUT

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

VIEW REVENUE

Return to Admin Menu

Revenue Report

RefID	Description	Total
5	ckl	400
7	ckl, egb ll, coke ll	910
8	ckl, coke ll	695
9	ckl, ckr, coke ll	989
10	ckl, coke ll	688
11	ckl, coke ll	695
12	ckl, coke ll	555
13	ckl, coke ll	499

Total Sales For Today = 5431

Print Report

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LOGOUT

Printing

Save Print Output As

This PC > Desktop

Search Desktop

Organize

New folder

This PC

3D Objects

Desktop

Documents

Downloads

Music

Pictures

Videos

OS (C:)

Transcend (D:)

Transcend (D:)

Name

Date modified

Type

Size

No items match your search.

File name: Bill

Save as type: PDF Document (*.pdf)

Hide Folders

Save

Cancel


Return to Admin Menu

Revenue Report

Description	Total
ckl	400
ckl, egl, coke, ll	910
ckl, coke, ll	695
ckl, ckr, coke, ll	989
ckl, coke, ll	688
ckl, coke, ll	695
crk, coke, ll	555
ckl, coke, ll	499

Total Sales For Today = 5431

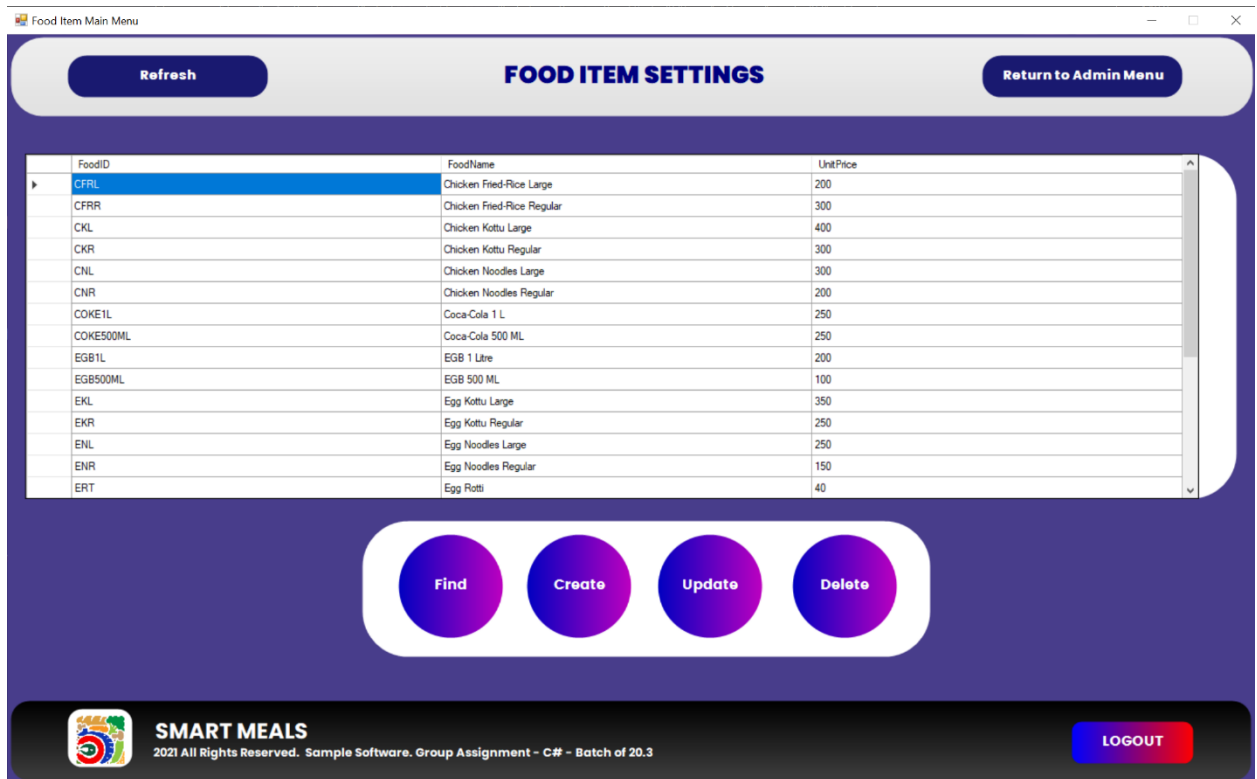
Print Report

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LOGOUT

Item Settings



The screenshot displays the 'Food Item Main Menu' interface. At the top, there is a header bar with a 'Refresh' button on the left, the title 'FOOD ITEM SETTINGS' in the center, and a 'Return to Admin Menu' button on the right. Below the header is a table with three columns: 'FoodID', 'FoodName', and 'UnitPrice'. The table lists various food items, including Chicken Fried-Rice, Chicken Kottu, Chicken Noodles, Coca-Cola, Egg Kottu, and Egg Noodles, with their respective unit prices. Below the table, there are four circular buttons labeled 'Find', 'Create', 'Update', and 'Delete'. At the bottom of the interface, there is a footer bar with the 'SMART MEALS' logo, the text '2021 All Rights Reserved. Sample Software. Group Assignment - C# - Batch of 20.3', and a 'LOGOUT' button.

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 Roti	40

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


Find Button

Find Food Item

FIND FOODS

Enter Food Name **ENTER**

- * Food ID - COKE1L
- * Food Unit Price - 250

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

Create Button

CREATE FOODS

- * **Enter Food ID**
- * **Enter Food Name**
- * **Enter Food Unit Price**

ENTER

Done!

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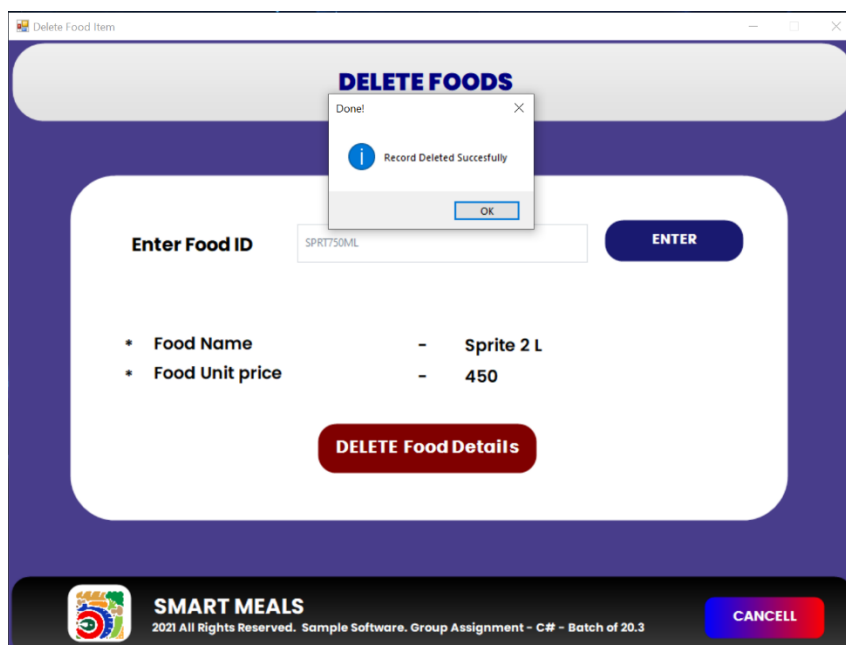
When a new food item is added to the list, the admin could come over to this menu and give the relevant food ID and its price as shown above.

Update Button



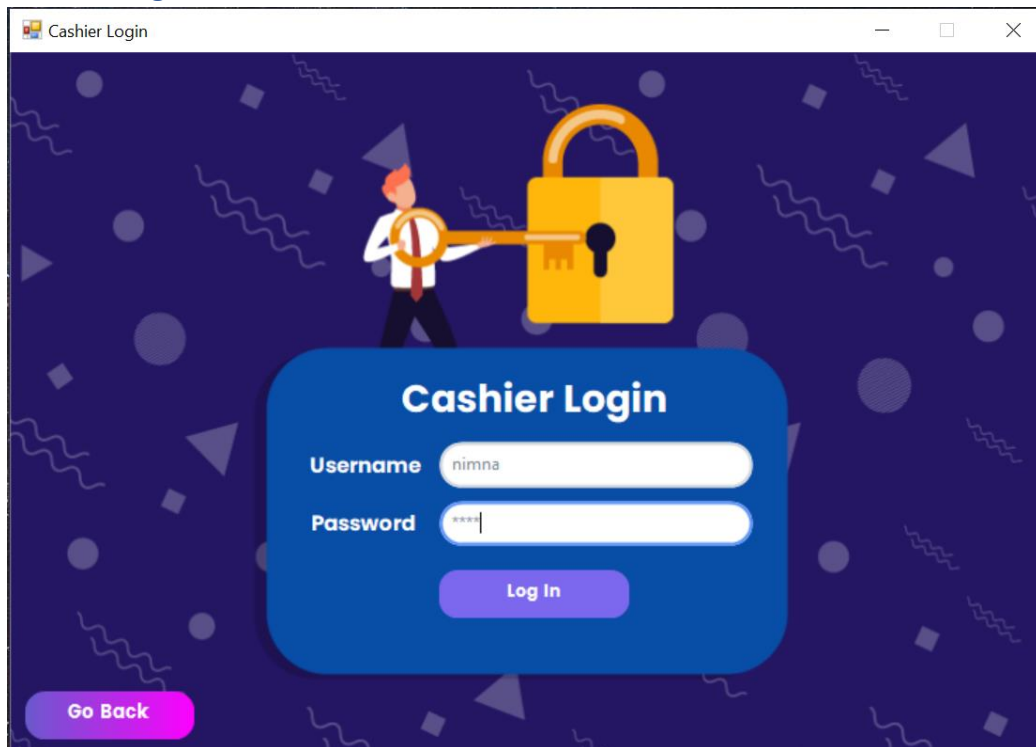
In this page the admin can update the food from the database, as shown above Sprite decided to discontinue the 2L and instead came up with a new 750ml , so now the admin could update the new name and price.

Delete Button



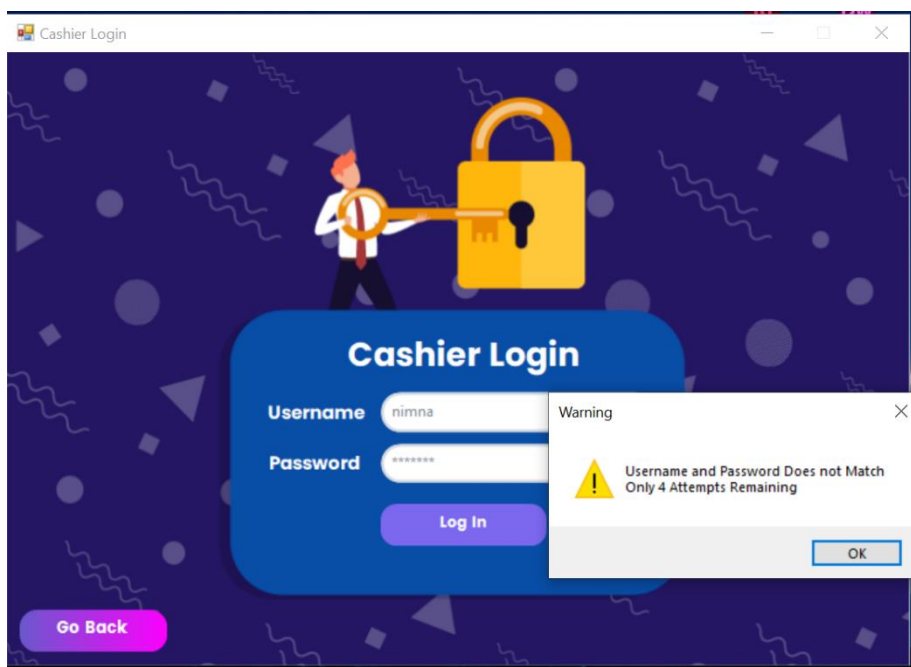
Since sprite decided to remove the 2L, we can remove that from our database from this menu.

Cashier Login



The image shows a web browser window titled "Cashier Login". The background is dark blue with abstract geometric shapes. At the top, there is an illustration of a person in a white shirt and red tie holding a large yellow key, standing next to a large yellow padlock. Below this, there is a blue rounded rectangle containing the text "Cashier Login" in white. Underneath, there are two input fields: "Username" with the text "nimna" and "Password" with masked characters "*****". A purple "Log In" button is positioned below the password field. In the bottom left corner, there is a pink "Go Back" button.

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



The image shows the same "Cashier Login" interface as before, but with an additional warning popup. The popup is titled "Warning" and contains a yellow warning icon, the text "Username and Password Does not Match", and "Only 4 Attempts Remaining". There is an "OK" button at the bottom right of the popup. The background and main form elements remain the same.

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

Welcome to the Cashier Interface

New Bill

CASHIER INTERFACE Food Details

A

Food Code Search

Food Name

Unit Price

Quantity

Add To Bill Finish Bill

B

Bill Date **** Cashier ID 4
Bill Time **** Cashier Name Niwarthana
Discount ****

Add Discount Clear Bill
Remove Item Print Bill

C

#	Food Code	Food Name	Unit Price	Quantity	Total
---	-----------	-----------	------------	----------	-------

D

Sub Total **Rs. 00** **Total**
Discount *** **Rs. 00** **Rs. 00**

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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

CASHIER INTERFACE

Food Details

Food Code

Food Name

Unit Price

Quantity

5

Add To Bill

Finish Bill

Bill Date

8/31/2021

Cashier ID

4

Bill Time

1:04 AM

Cashier Name

Niwarthana

Discount

2

Add Discount

2

Clear Bill

Remove Item

Print Bill

#	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-Rl...	200	5	1000

Sub Total


Rs. 1900

Discount 2%

Rs. 38

Total

Rs. 1862

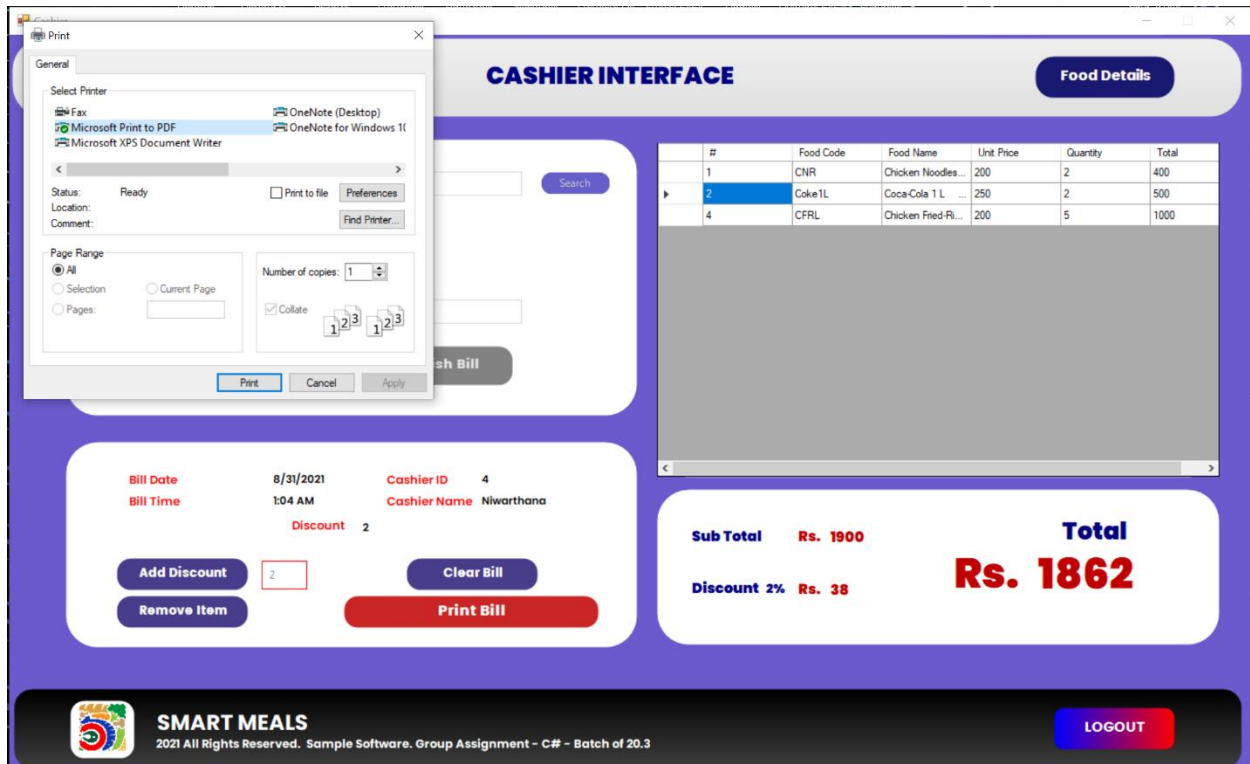
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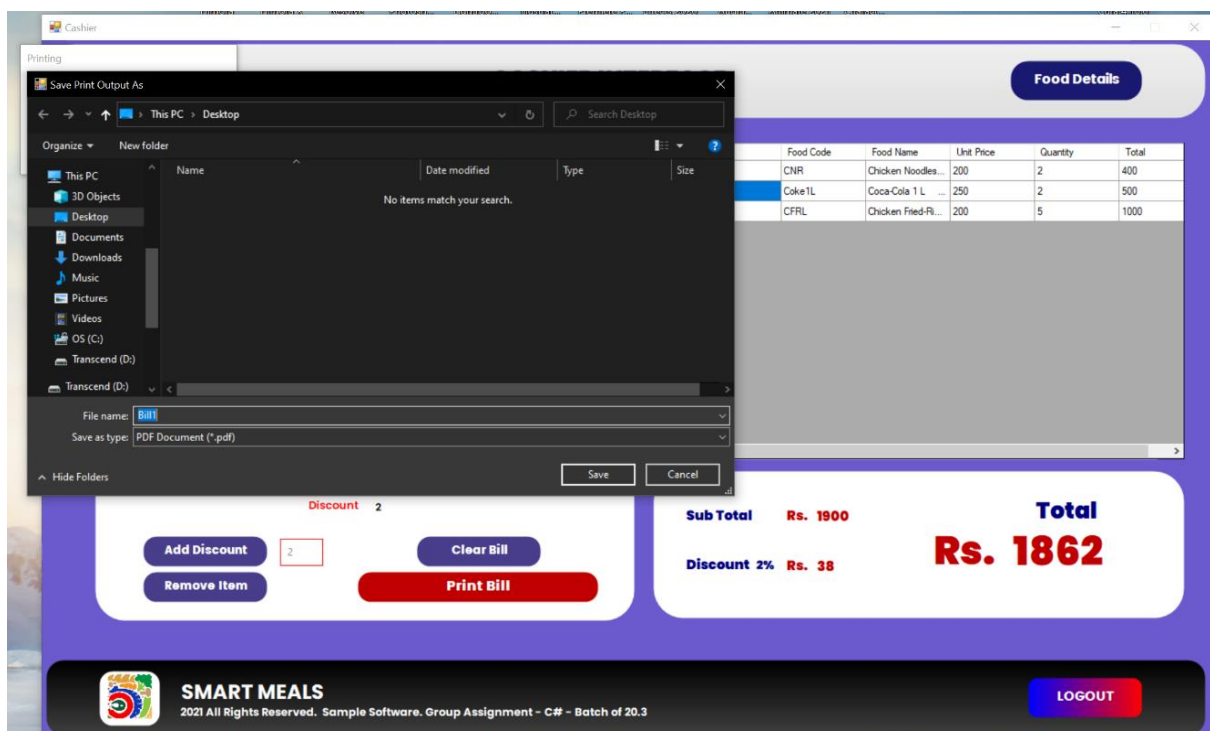
LOGOUT

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 hand 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.

Requires Authorization

Enter ADMIN Password -

admin

OK

Cancel

Food Name

Unit Price

Quantity

5

Add To Bill

Finish Bill

Bill Date

8/31/2021

Cashier ID

4

Bill Time

1:04 AM

Cashier Name

Niwarthana

Discount

2

Add Discount

2

Remove Item

Clear Bill

Print Bill

Food Details

#	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

Sub Total

Rs. 1900

Discount 2%

Rs. 38

Total

Rs. 1862

SMART MEALS

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LOGOUT

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

- End of Report -