

FACULTY OF SCIENCE AND TECHNOLOGY

ASSIGNMENT FOR THE BSC (HONS) COMPUTER SCIENCE AND BSC (HONS) INFORMATION TECHNOLOGY; YEAR 2

ACADEMIC SESSION: AUGUST 2017

CSC2205 C# PROGRAMMING

DEADLINE: 20 NOVEMBER 2017

INSTRUCTIONS TO CANDIDATES

1. This coursework contributes **30%** to your final grade.
2. This is a group assignment of 3 to 5 members.
3. The coursework must be entirely your own work. Please make sure that you are aware of the rules concerning plagiarism.

IMPORTANT

The University requires students to adhere to submission deadlines for any form of assessment. Penalties are applied in relation to unauthorized late submission of work.

- Coursework submitted after the deadline but within 1 week will be accepted for a maximum mark of 40%.
- Work handed in following the extension of 1 week after the original deadline will be regarded as a non-submission and marked zero.

Academic Honesty Acknowledgement

I Wong Kwang Yuen (name) 15002082 (ID), I Wong ShenYang....(name) 16013757....(ID),

I Marcus Wong Yew Hon ..(name) 15024490 ..(ID), I Sim Hann Zern.....(name) 15024060 ..(ID)

and I Ong Khai Liang(name) 15027410(ID)

verify that this paper contains entirely my own work. I have not consulted with any outside person or materials other than what was specified (an interviewee, for example) in the assignment or the syllabus requirements. Further, I have not copied or inadvertently copied ideas, sentences, or paragraphs from another student. I realize the penalties (*refer to page 16, 5.5, Appendix 2, page 44 of the student handbook diploma and undergraduate programme*) for any kind of copying or collaboration on any assignment.


(Signature / Date)

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Account login credentials

Admin Accounts

Username	Password
• Kwang Yuen	• 15002082
• Khai Liang	• 15027410

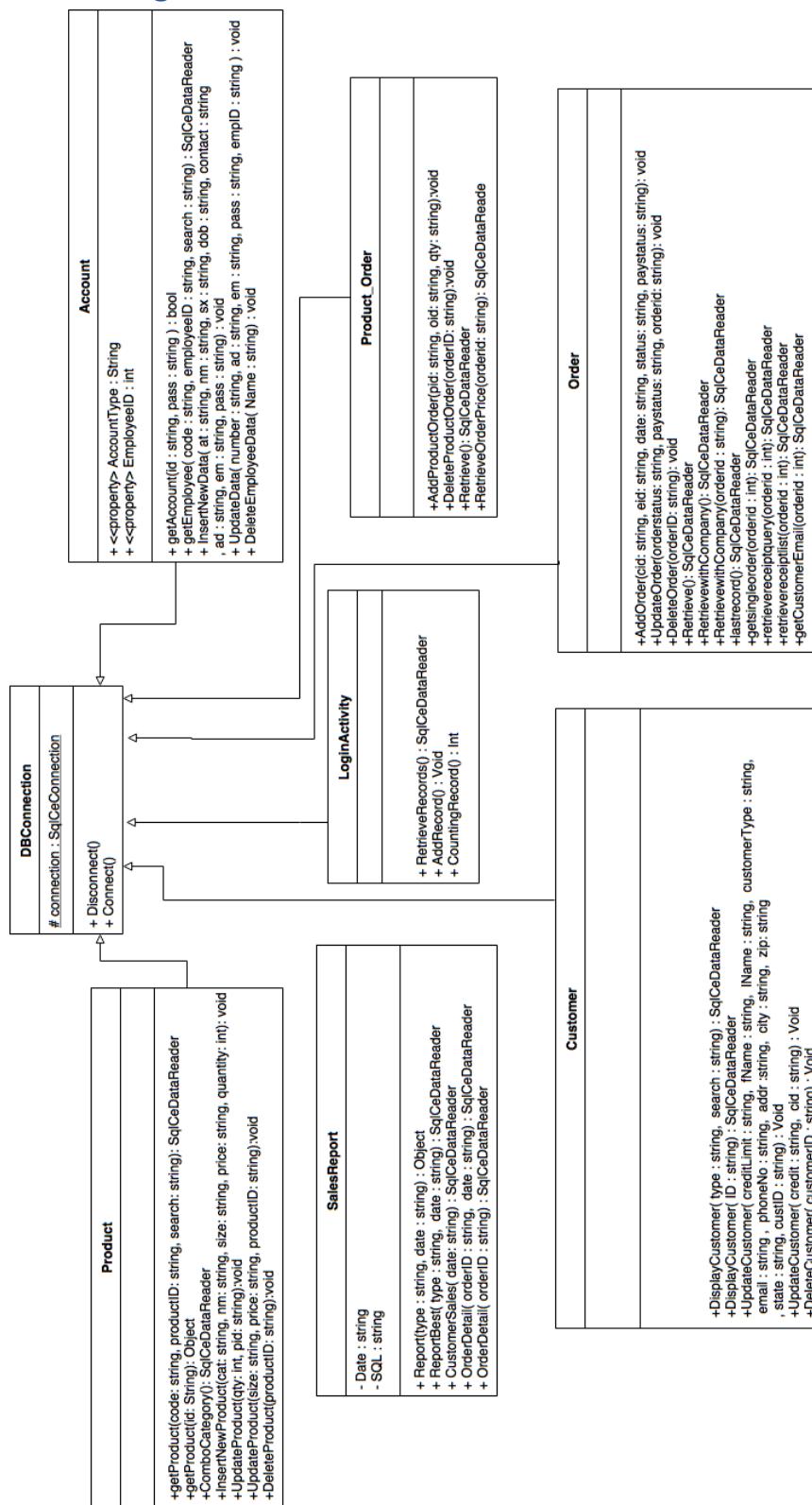
Manager Accounts

Username	Password
• Marcus	• 15024490

Employee Accounts

Username	Password
• Hann Zern	• 15024060
• ShenYang	• 16013757
• Johnny Chang	• 1234

Class Diagram of all classes



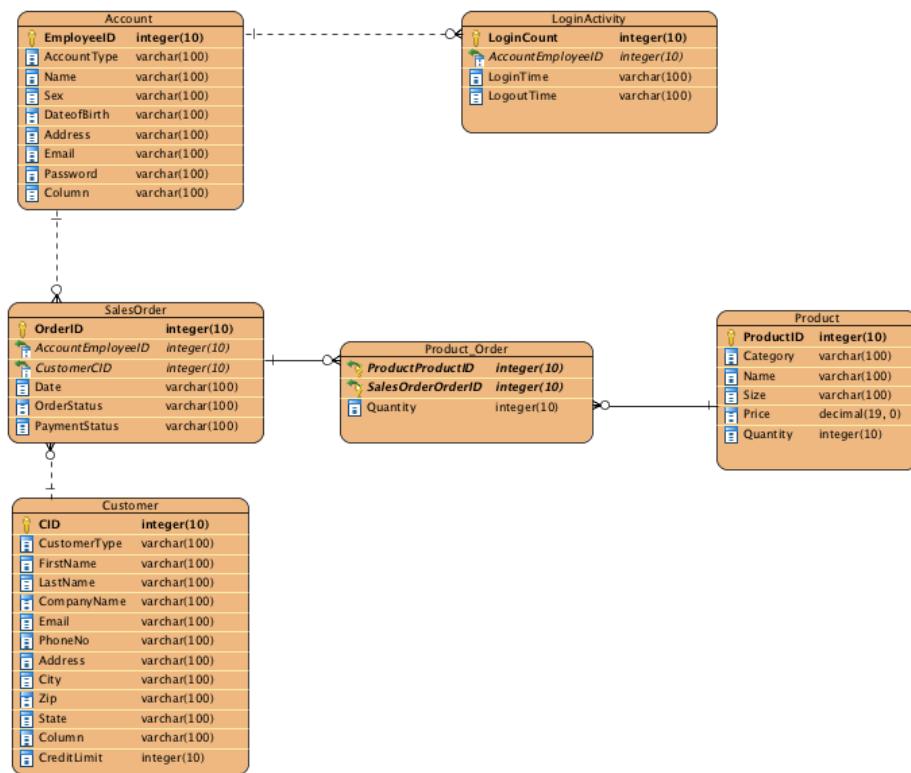
List of Classes

Below is the list of classes used in this project, the classes are used to handle all the SQL queries. Thus, all of the classes would inherit from DBConnection class, as this class is used to establish the connection to the database.

1. DBConnection
 - To Connect & Disconnect from the database
2. **Account**
 - To retrieve employee/account details from the Account table of the database
 - To add new employee/account
 - To edit employee/account details
 - To delete employee/account details
3. **LoginActivity**
 - To retrieve records from the LoginActivity table of the database
 - To add new record to the LoginActivity table
4. **Customer**
 - To retrieve records from the Customer table of the database
 - To add new customer record
 - To edit customer record
 - To delete customer record
5. **SalesReport**
 - To generate the daily sales report
6. **Order**
 - To add a new order record to the SalesOrder table of the database
 - To delete an order record
 - To Edit an order record
 - To retrieve order records from the SalesOrder table
7. **Product_order**
 - To add records to the Product_Order table
 - To delete records
8. **Product**
 - To retrieve the product records from the Product table
 - To add a new product record
 - To edit a product record
 - To delete a product record
9. **Program**
 - The main class of the program that is used to start the Sales form.

Data Tables

Simple Entity-Relationship Diagram



Tables

Account

Key	Name	Data Type	Size	Identity	Nulls
EmployeeID		int	4	Yes	No
	AccountType	nvarchar(100)	200	No	No
	Name	nvarchar(100)	200	No	No
	Sex	nvarchar(100)	200	No	No
	DateofBirth	nvarchar(100)	200	No	No
	ContactNumber	nvarchar(100)	200	No	No
	Address	nvarchar(100)	200	No	No
	Email	nvarchar(100)	200	No	No
	Password	nvarchar(100)	200	No	No

Customer

Key	Name	Data Type	Size	Identity	Nulls
	CID	int	4	Yes	No
	CustomerType	nvarchar(100)	200	No	No
	CompanyName	nvarchar(100)	200	No	No
	CreditLimit	money	19	No	No
	FirstName	nvarchar(100)	200	No	No
	LastName	nvarchar(100)	200	No	No
	Email	nvarchar(100)	200	No	No
	PhoneNo	nvarchar(100)	200	No	No
	Address	nvarchar(100)	200	No	No
	City	nvarchar(100)	200	No	No
	Zip	nvarchar(100)	200	No	No
	State	nvarchar(100)	200	No	No

LoginActivity

Key	Name	Data Type	Size	Identity	Nulls
	LoginCount	int	4	Yes	No
	EmployeeID	int	4	No	No
	LoginTime	nvarchar(100)	200	No	No
	LogoutTime	nvarchar(100)	200	No	No

Product

	ProductID	int	4	Yes	No
	Category	nvarchar(100)	200	No	No
	Name	nvarchar(100)	200	No	No
	Size	nvarchar(100)	200	No	No
	Price	money	19	No	No
	Quantity	int	4	No	No

Product_Order

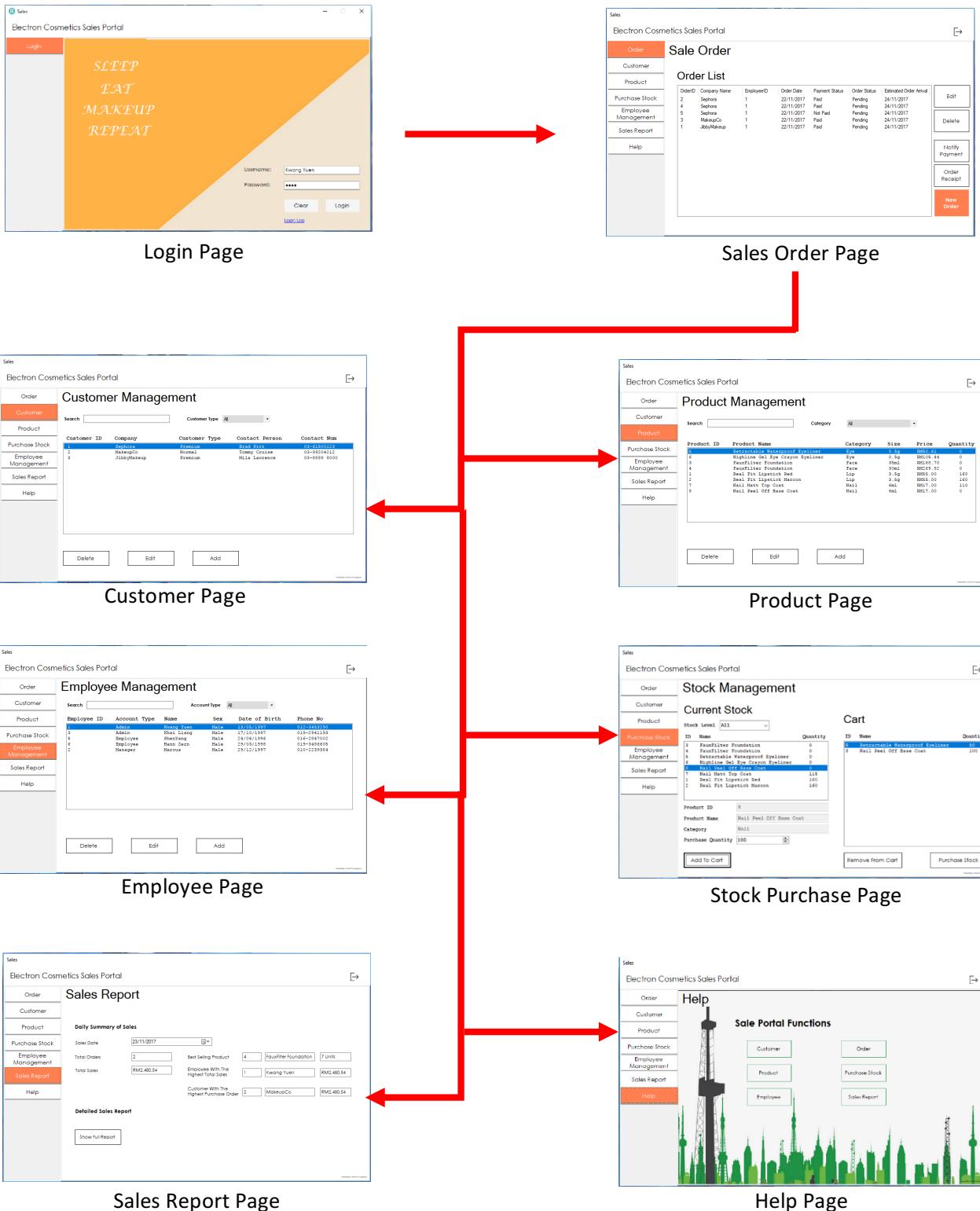
Key	Name	Data Type	Size	Identity	Nulls
	ProductCode	int	4	No	No
	OrderNum	int	4	No	No
	Quantity	int	4	No	No

SalesOrder

Key	Name	Data Type	Size	Identity	Nulls
	OrderID	int	4	Yes	No
	CustomerID	int	4	No	No
	EmployeeID	int	4	No	No
	Date	nvarchar(100)	200	No	No
	OrderStatus	nvarchar(100)	200	No	No
	PaymentStatus	nvarchar(100)	200	No	Yes

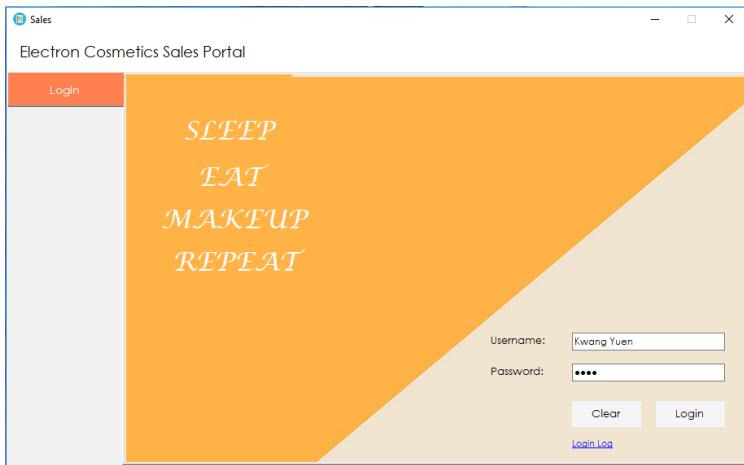
Screenshots & Story Board of The System

General Program Flow



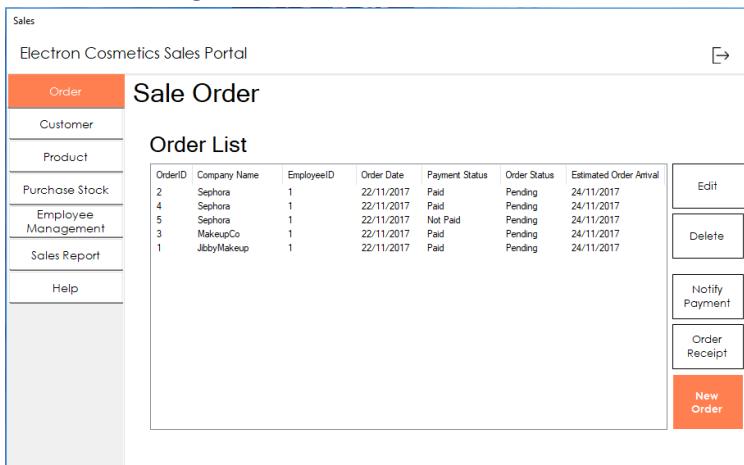
Specific Program Flow and Explanation

Login Page



This is the startup page of Electron Cosmetics Sales System. It is also the Login page of the system.

Sales Order Page



This is the page after the user has logged in. From the bar on the left we are able to see that there are seven different tabs which are Order, Customer, Product, Purchase Stock, Employee Management, Sales Report, and Help. In the Order tab, it shows the Order List with functions like Edit, Delete, Notify Payment, Order Receipt, and also New Order.

Sales

Electron Cosmetics Sales Portal

Edit Order

OrderID	Customer Company	Order Date	Estimated Order Arrival
2	Sephora	22/11/2017	2017
4	Sephora	22/11/2017	2017
5	Sephora	22/11/2017	2017
3	MakeupCo	22/11/2017	2017
1	JibbyMakeup	22/11/2017	2017

Edit Order

Customer Company: Sephora

Order ID: 2

Employee ID: 1

Order Date: 22/11/2017

Payment Status: Paid

Order Status: Complete

Add To Cart

Edit

Delete

Notify Payment

Order Receipt

New Order

This is the Edit page after the user hits the “Edit” button. Here we are able to change the Payment Status and Order Status of the order.

Sales

Electron Cosmetics Sales Portal

Sale Order

Order List

OrderID	Company Name	EmployeeID	Order Date	Payment Status	Order Status	Estimated Order Arrival
2	Sephora	1	22/11/2017	Paid	Pending	24/11/2017
4	Sephora	1	22/11/2017	Not Paid	Pending	24/11/2017
5	Sephora	1	22/11/2017	Not Paid	Pending	24/11/2017
3	MakeupCo	1	22/11/2017	Paid	Pending	24/11/2017
1	JibbyMakeup	1	22/11/2017	Paid	Pending	24/11/2017

Remove Order

Are you sure you want to permanently delete the selected order(s)?

Yes No

Edit

Delete

Notify Payment

Order Receipt

New Order

This is the popup that will show after the user chooses to delete an order.

Sales

Electron Cosmetics Sales Portal

Sale Order

Order List

OrderID	Company Name	EmployeeID	Order Date	Payment Status	Order Status	Estimated Order Arrival
2	Sephora	1	22/11/2017	Paid	Pending	24/11/2017
5	Sephora	1	22/11/2017	Not Paid	Pending	24/11/2017
3	MakeupCo	1	22/11/2017	Paid	Pending	24/11/2017
1	JibbyMakeup	1	22/11/2017	Paid	Pending	24/11/2017

Edit

Delete

Notify Payment

Order Receipt

New Order

After deleting, we can see that we only have two orders in the order list with company Sephora instead of three.

The screenshot shows the 'Sales' section of the 'Electron Cosmetics Sales Portal'. On the left, there's a vertical menu with options: Order (highlighted in orange), Customer, Product, Purchase Stock, Employee Management, Sales Report, and Help. The main area is titled 'Sale Order' and contains a 'Order List' table. The table has columns: OrderID, Company Name, EmployeeID, Order Date, Payment Status, Order Status, and Estimated Order Arrival. There are four rows of data:

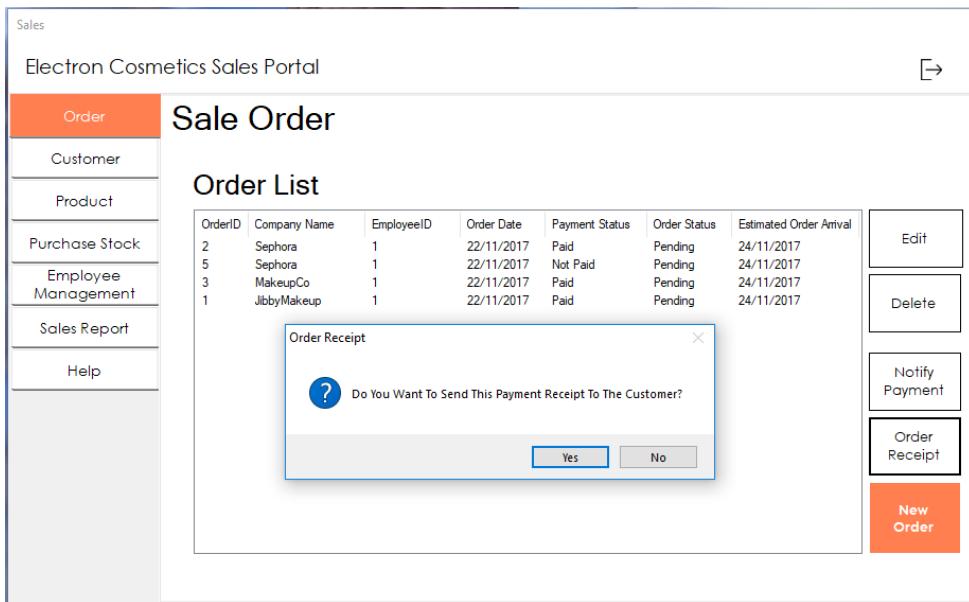
OrderID	Company Name	EmployeeID	Order Date	Payment Status	Order Status	Estimated Order Arrival
2	Sephora	1	22/11/2017	Paid	Pending	24/11/2017
5	Sephora	1	22/11/2017	Not Paid	Pending	24/11/2017
3	MakeupCo	1	22/11/2017	Paid	Pending	24/11/2017
1	JibbyMakeup	1	22/11/2017	Paid	Pending	24/11/2017

To the right of the table are several buttons: Edit, Delete, Notify Payment (highlighted in orange), Order Receipt, and New Order. A modal dialog box titled 'Send Notice' is open, containing a warning icon and the text: 'Do you want to send this payment notice to Brad Pitt's email address: brad.p@sephora.com?'. It has 'Yes' and 'No' buttons.

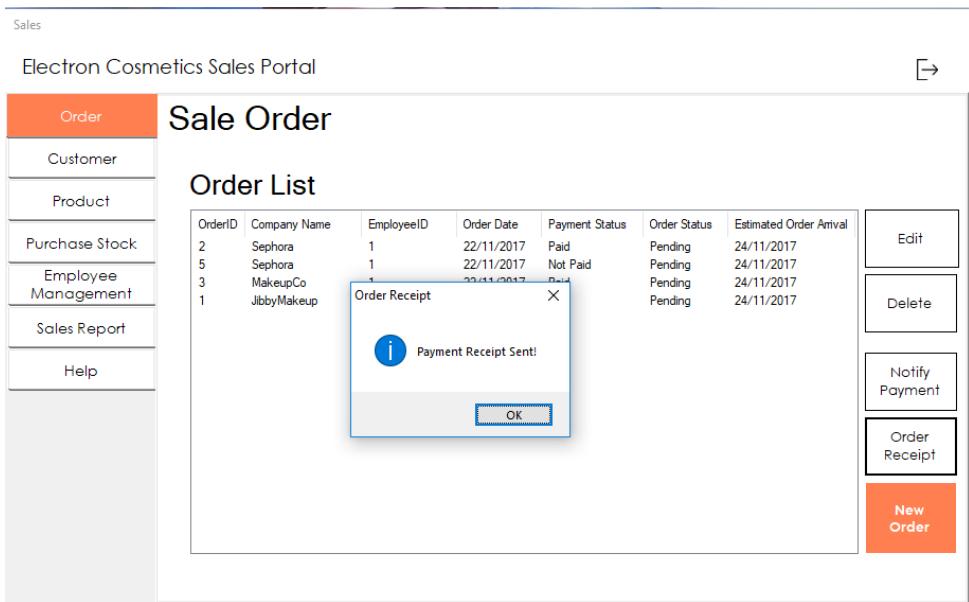
After the user selects a specific order from the list and clicks on the “Notify Payment” button a popup will show asking whether the user wants to send an email to the company’s email address.

This screenshot is similar to the previous one, showing the 'Sales' section of the portal. The 'Order' menu item is highlighted. The 'Order List' table shows the same four orders. The 'Notify Payment' button is highlighted. A modal dialog box is open, displaying the message: 'Order payment notice has been sent to Brad Pitt's email address: brad.p@sephora.com'. It has an 'OK' button.

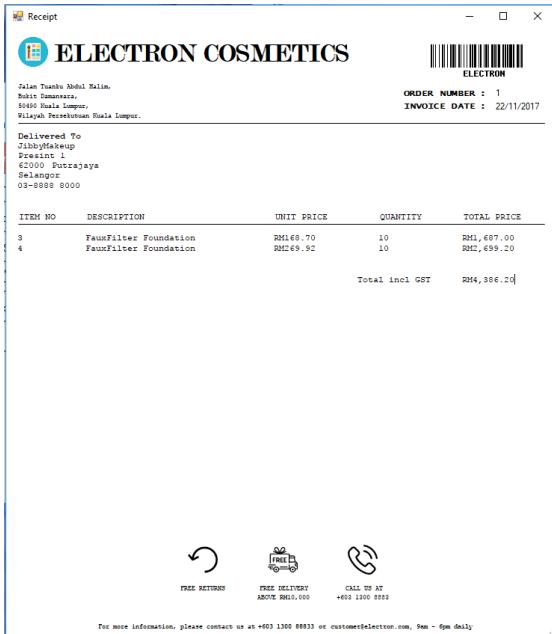
After the user confirms that he/she wants to send an email to notify the company about the payment of the order, another popup will show up saying the order payment notice has been sent.



A confirmation popup will show when the user tries to send a payment receipt of the order.



"Payment Receipt Sent !" popup will show after successfully sending the company the receipt of payment for the order.



This is how the payment receipt that is sent to the company selected will look like. It shows the item no, the description, unit price, quantity, and the total price.

Choose Products

Customer Info		Available Products		
Company Name:	MakeupCo	Product ID	Name	Price (RM)
Customer ID:	2	5	Retractable Waterproof Eyeliner	50.61
Customer Name:	Tommy Cruise	6	High Pigment Eye Crayon Eyeliner	105.44
Customer Type:	Normal	3	FauxFilter Foundation	169.70
Contact Number:	03-99204212	4	FauxFilter Foundation	269.92
Payment Method:	Bank Transfer	1	Real Fit Lipstick Red	55
		2	Real Fit Lipstick Maroon	55
		7	Nail Matt Top Coat	17
		8	Nail Peel Off Base Coat	17

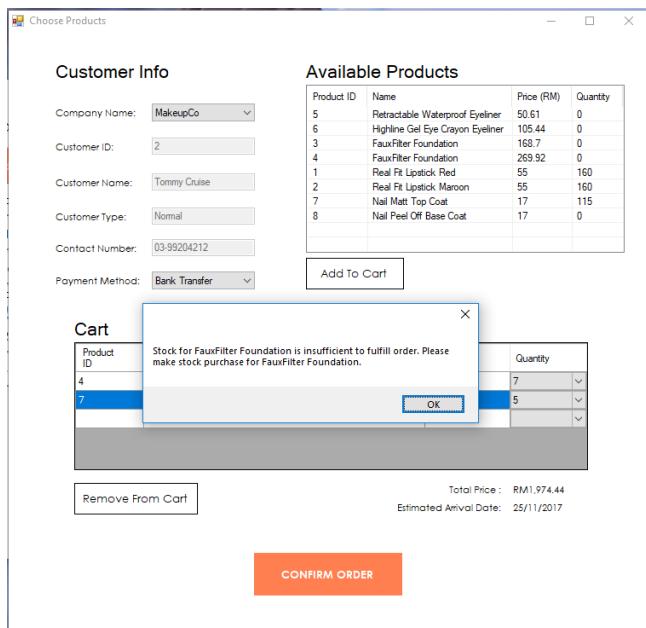
Cart

Product ID	Name	Price (RM)	Quantity
4	FauxFilter Foundation	269.92	7
7	Nail Matt Top Coat	17	5

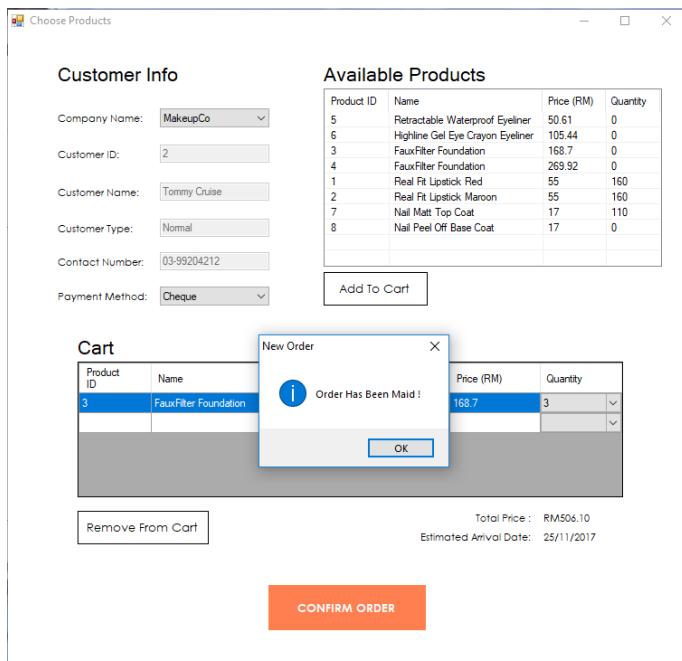
Total Price : RM1,974.44
Estimated Arrival Date: 25/11/2017

CONFIRM ORDER

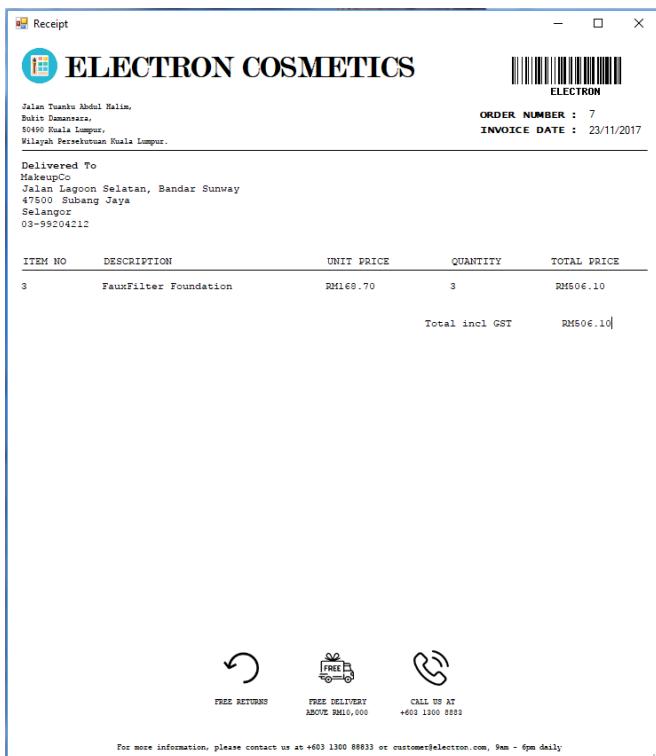
The picture above is the page that will show after the user chooses to add a new order by clicking the “New Order” button. The user can choose which company, the payment method, and also the product from the available products selection on the top right corner. After adding the products to the cart, the quantity for each of the product chosen can be altered, and the total price will be shown.



After clicking on the “Confirm Order” button, a popup in the picture above shows that the product that the customer wants to order is insufficient and will ask the user to make a stock purchase for the product.



A popup will show informing that the order has been made.

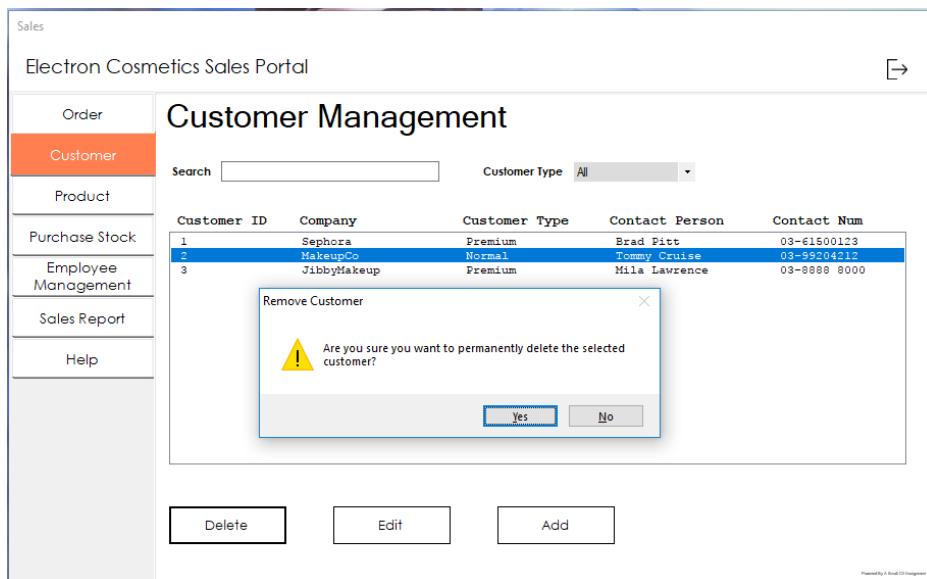


A receipt will show for the new order that has been made showing the item, its description, unit price, quantity and the total price.

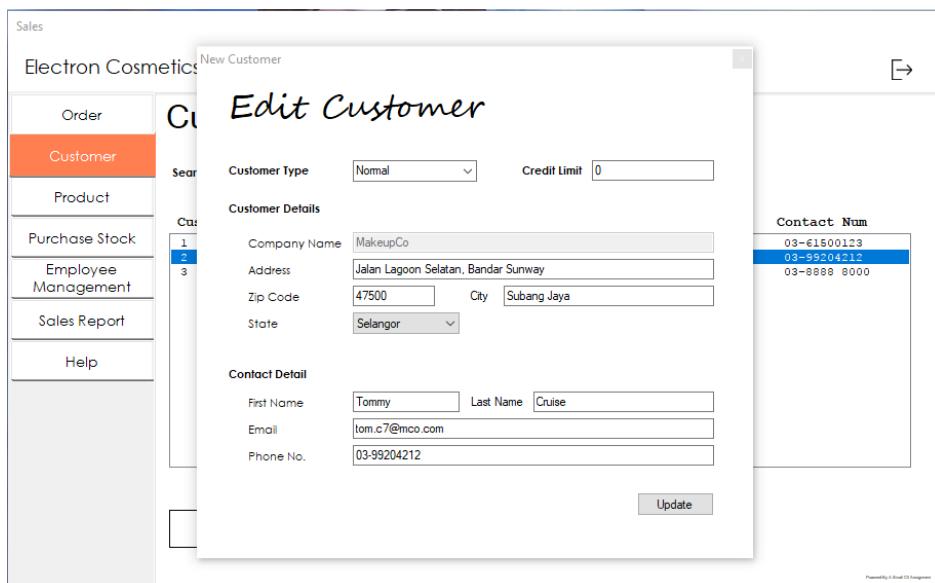
Customer Management Page

Customer ID	Company	Customer Type	Contact Person	Contact Num
1	Sephora	Premium	Brad Pitt	03-61500123
2	MakeupCo	Normal	Tommy Cruise	03-99204212
3	JibbyMakeup	Premium	Mila Lawrence	03-8888 8000

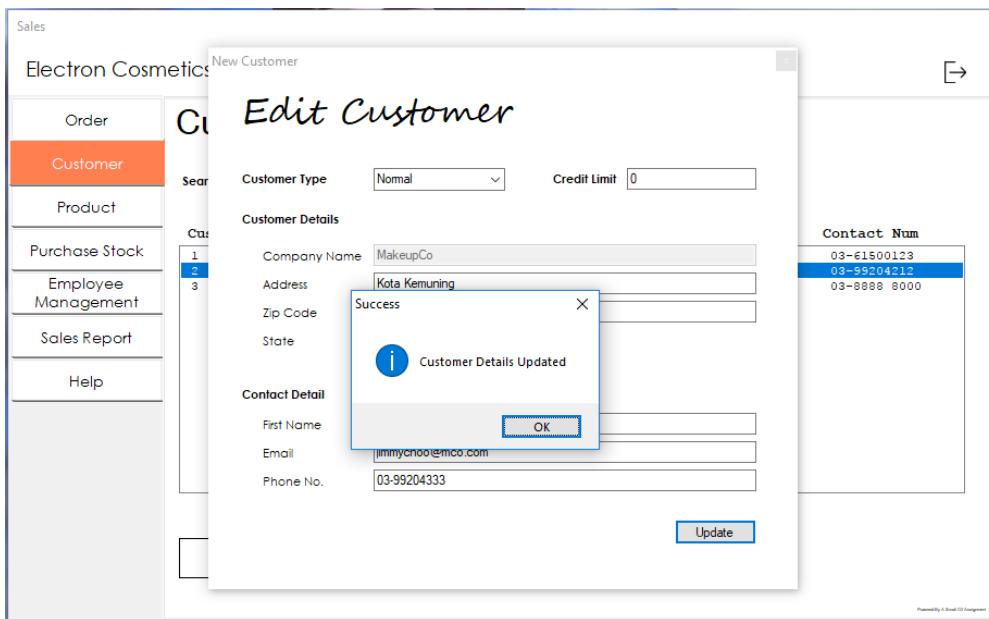
Moving on to the next tab after the “Order” at the bar on the left which is customer management. This page shows the current customers and the user is after the edit, delete, or add customers.



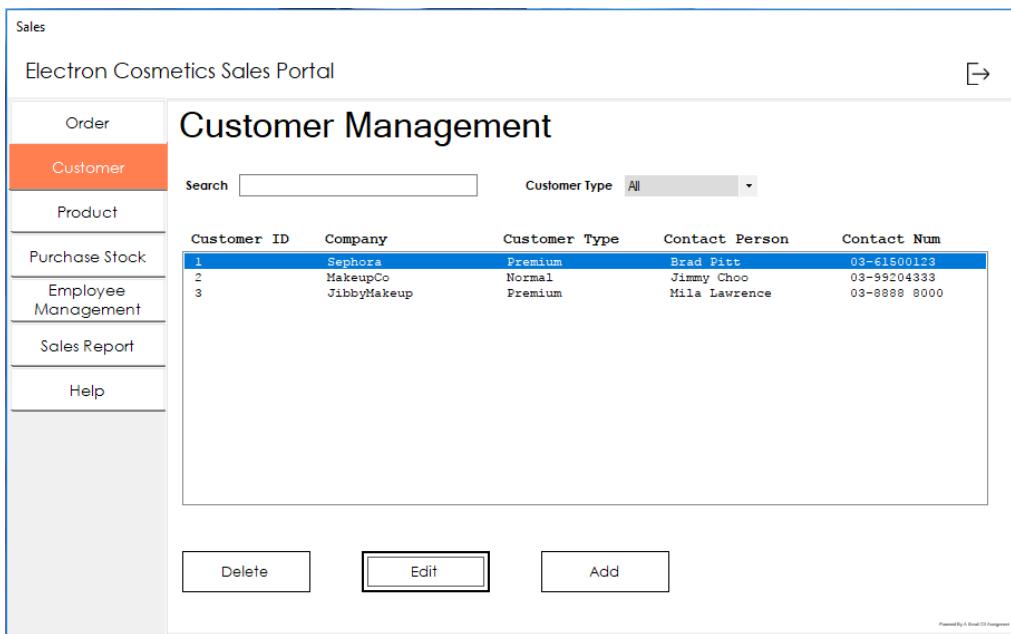
A confirmation popup will show after the user chose to delete one of the customer from the customer list.



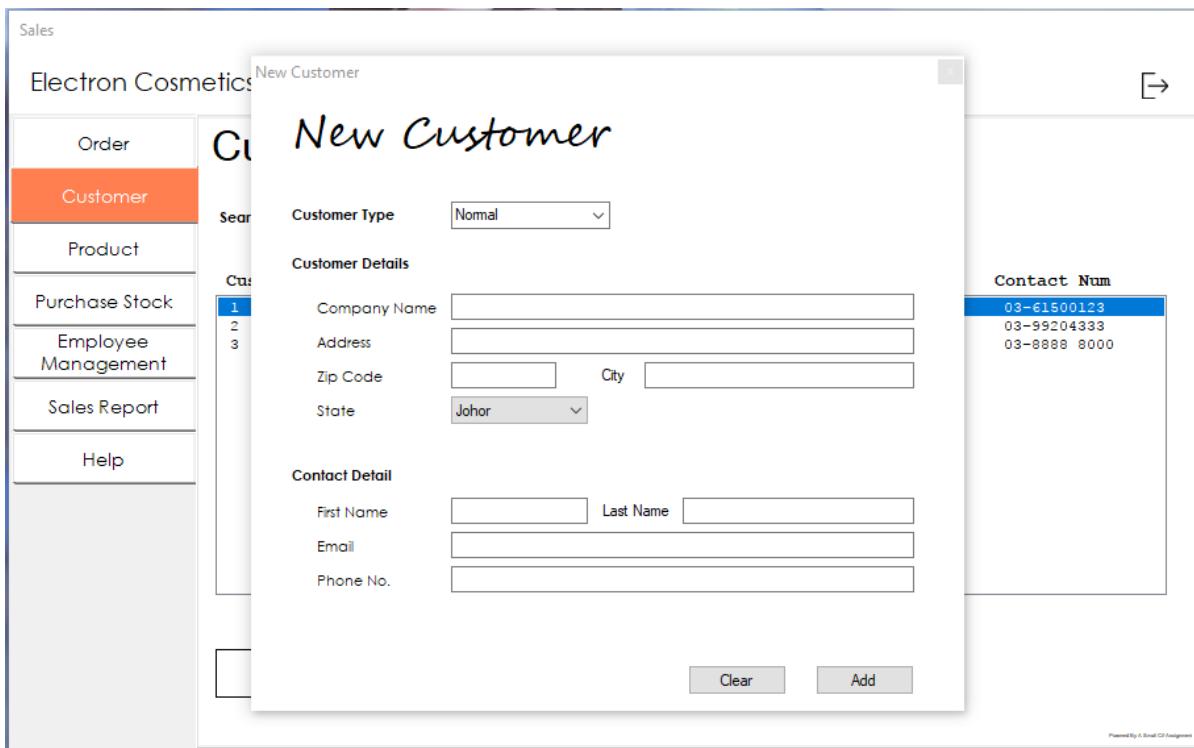
The edit customer page will show after the user chooses to edit one of the customer's information. The user will be able to make changes to the customer type, credit limit, address, zipcode, city, state, name, email, and the phone number of the customer.



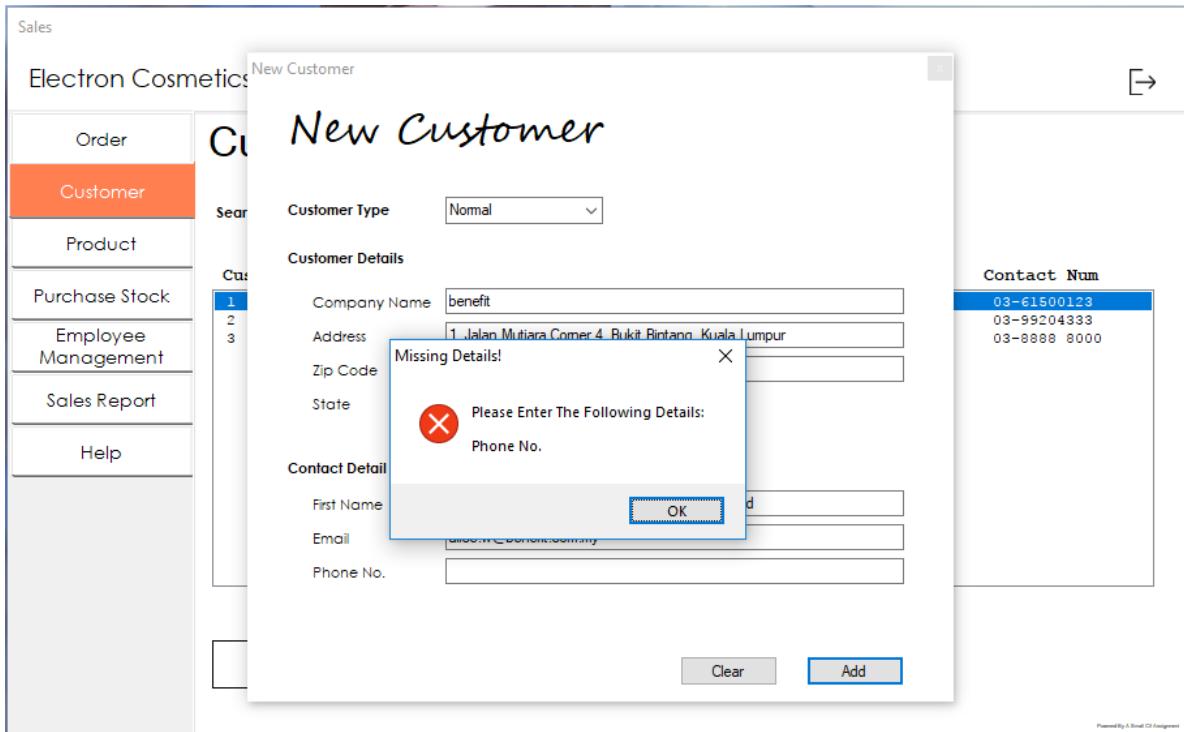
A popup will show indicating that the customer details have updated after the user clicks on the “Update” button.



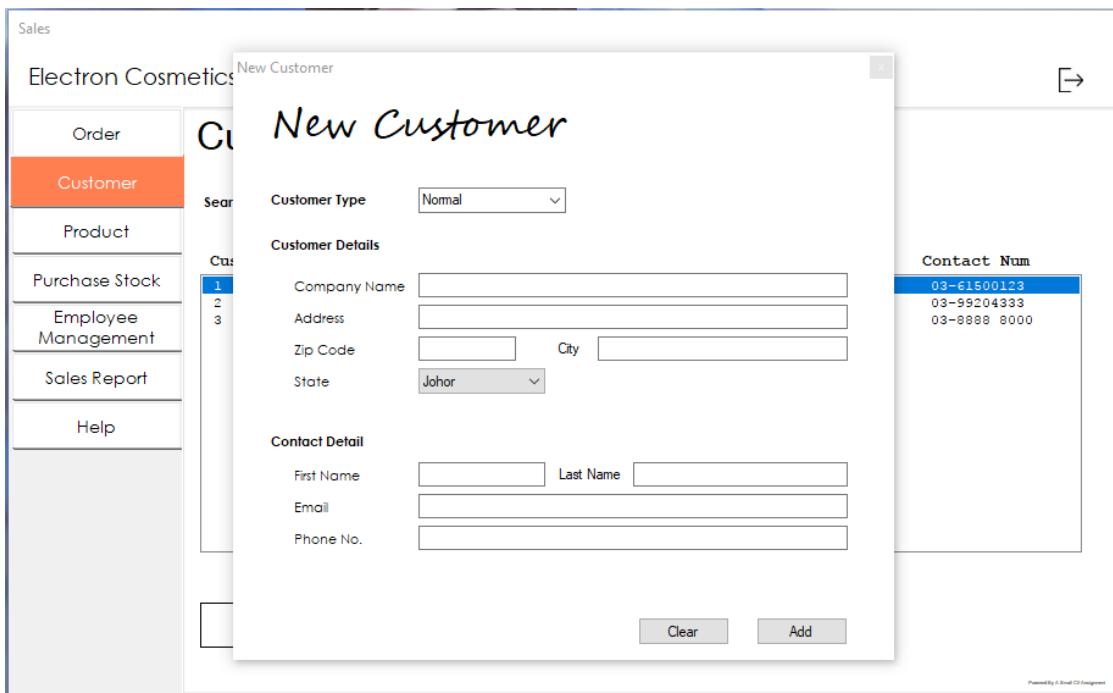
We can see that the contact person of MakeupCo and the Contact Number have been changed from Tomy Cruise to Jimmy Choo and from 03-99204212 to 03-99204333 correspondingly.



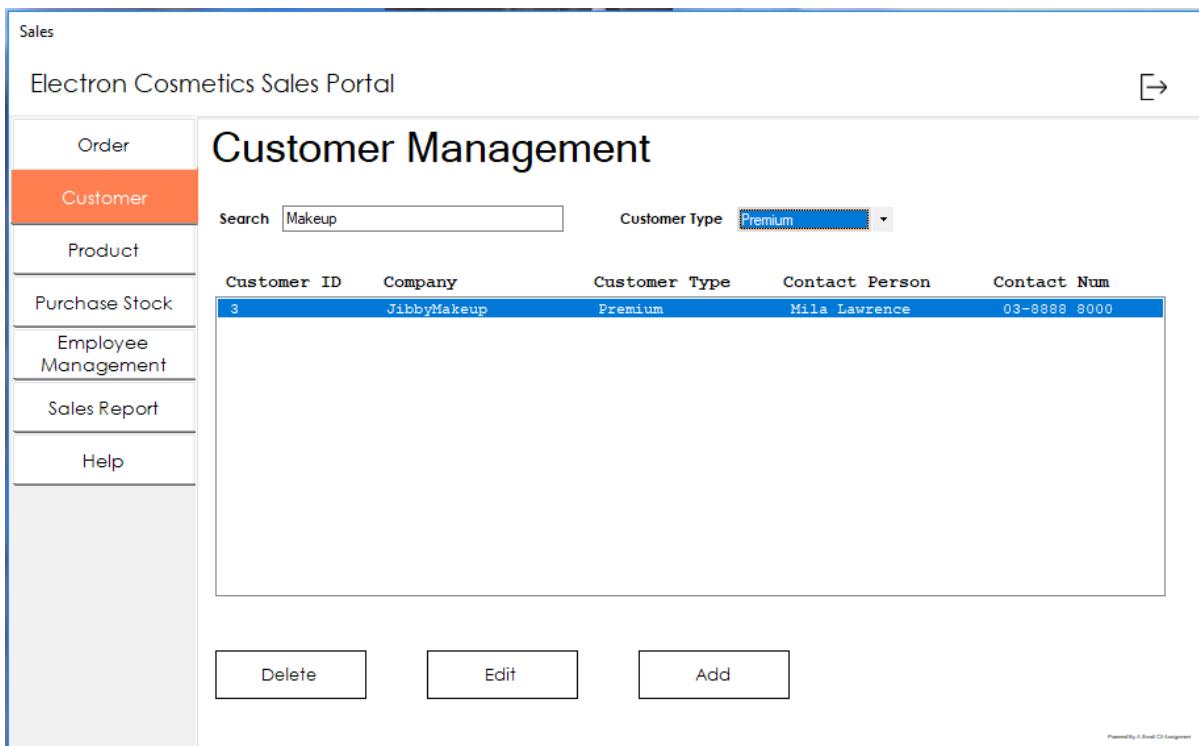
The new customer page will show after the user clicks the “Add” button in the customer page. Here all details must be filled before clicking the “Add” button.



An error message will pop indicating the fields that have not been filled.



All the fields will be cleared if the user clicks the “Clear” button shown in the picture.



The user can search for a specific customer using the search bar and also choose the customer type as a filter for the search.

Product Management Page

Sales

Electron Cosmetics Sales Portal

[→]

Order	Customer	Product
Purchase Stock	Employee Management	Sales Report
		Help

Product Management

Search: Category:

Product ID	Product Name	Category	Size	Price	Quantity
5	Retractable Waterproof Eyeliner	Eye	0.5g	RM50.61	0
6	Highline Gel Eye Crayon Eyeliner	Eye	0.5g	RM105.44	0
3	FauxFilter Foundation	Face	35ml	RM168.70	0
4	FauxFilter Foundation	Face	30ml	RM269.92	0
1	Real Fit Lipstick Red	Lip	3.5g	RM55.00	160
2	Real Fit Lipstick Maroon	Lip	3.5g	RM55.00	160
7	Nail Matt Top Coat	Nail	6ml	RM17.00	110
8	Nail Peel Off Base Coat	Nail	6ml	RM17.00	0

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Moving on to the “Product” tab which shows the Product Management page where the user can edit, delete, or add new products into the list.

Sales

Electron Cosmetics Sales Portal

[→]

Order	Customer	Product
Purchase Stock	Employee Management	Sales Report
		Help

Product Management

Search: Category:

Product ID	Product Name	Category	Size	Price	Quantity
5	Retractable Waterproof Eyeliner	Eye	0.5g	RM50.61	0
6	Highline Gel Eye Crayon Eyeliner	Eye	0.5g	RM105.44	0
3	FauxFilter Foundation	Face	35ml	RM168.70	0
4	FauxFilter Foundation	Face	30ml	RM269.92	0
1	Real Fit Lipstick Red	Lip	3.5g	RM55.00	160
2	Real Fit Lipstick Maroon	Lip	3.5g	RM55.00	160
7	Nail Matt Top Coat	Nail	6ml	RM17.00	110
8	Nail Peel Off Base Coat	Nail	6ml	RM17.00	0

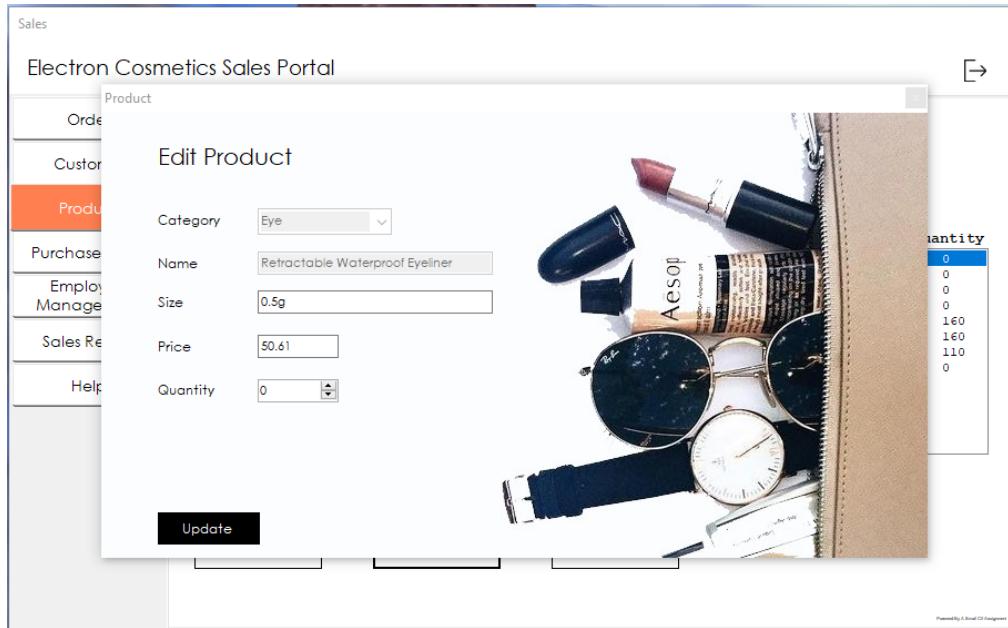
Remove Product

! Are you sure you want to permanently delete the selected product?

Yes No

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A confirmation popup will show after the “Delete” button is clicked after the user selects a specific product to delete.



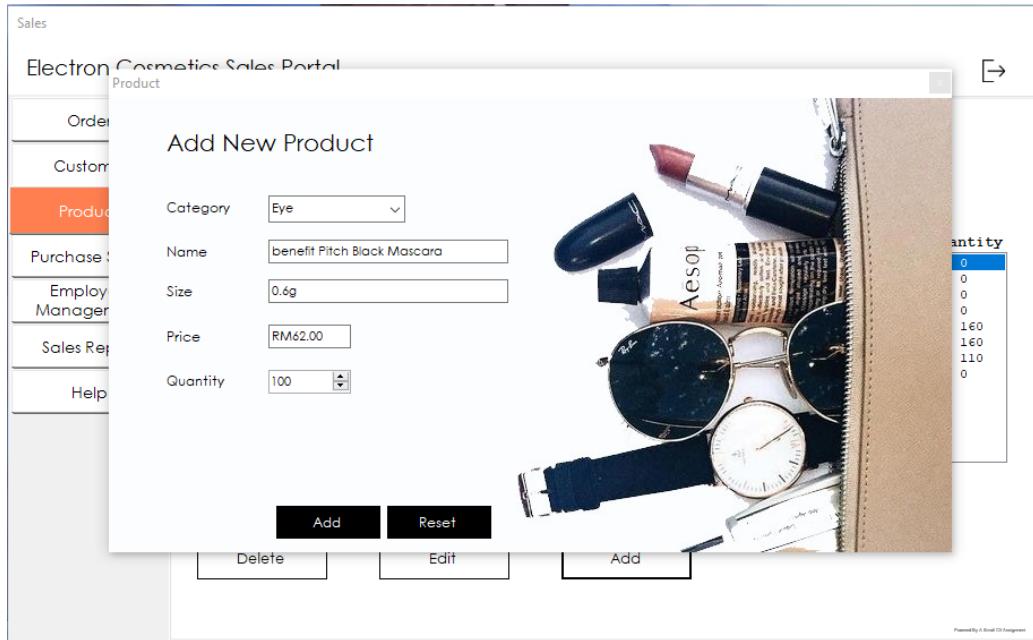
After the user selects a product and clicks on the “Edit” button, an Edit Product page will show where the user can edit the size, price, and also the quantity of the product.

Product Management						
	Product ID	Product Name	Category	Size	Price	Quantity
	5	Retractable Waterproof Eyeliner	Eye	0.5g	RM45.60	0
	6	Highline Gel Eye Crayon Eyeliner	Eye	0.5g	RM105.44	0
	3	FauxFilter Foundation	Face	35ml	RM168.70	0
	4	FauxFilter Foundation	Face	30ml	RM269.92	0
	1	Real Fit Lipstick Red	Lip	3.5g	RM55.00	160
	2	Real Fit Lipstick Maroon	Lip	3.5g	RM55.00	160
	7	Nail Matt Top Coat	Nail	6ml	RM17.00	110
	8	Nail Peel Off Base Coat	Nail	6ml	RM17.00	0

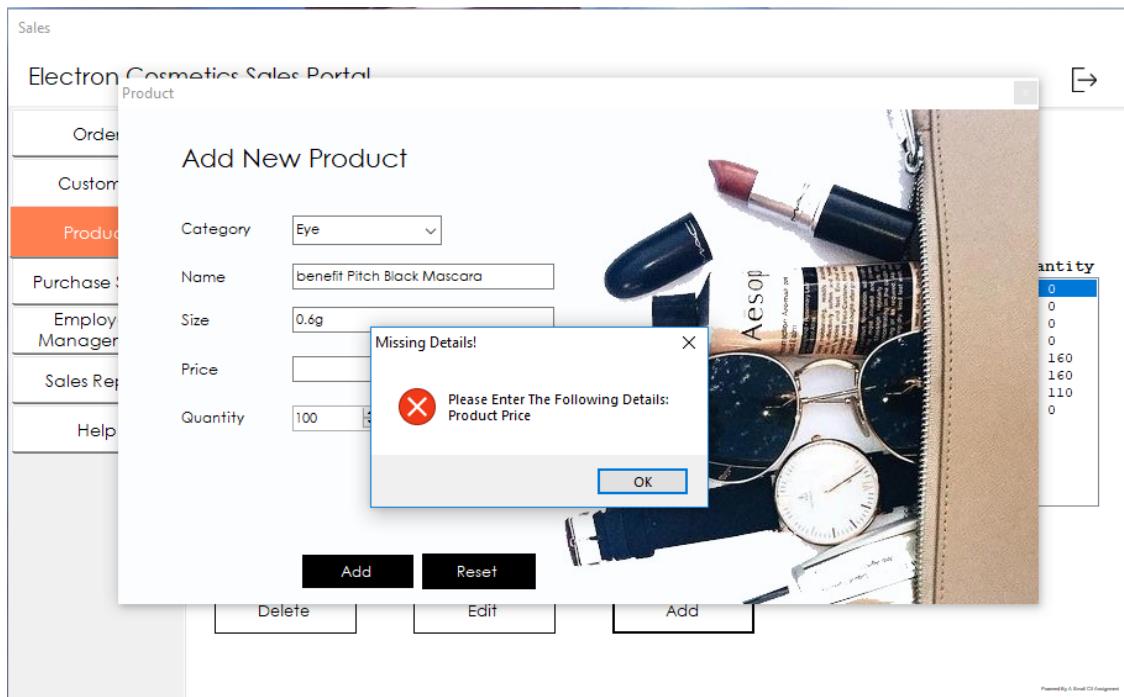
Search Category

Powered by A Small CO Assignment

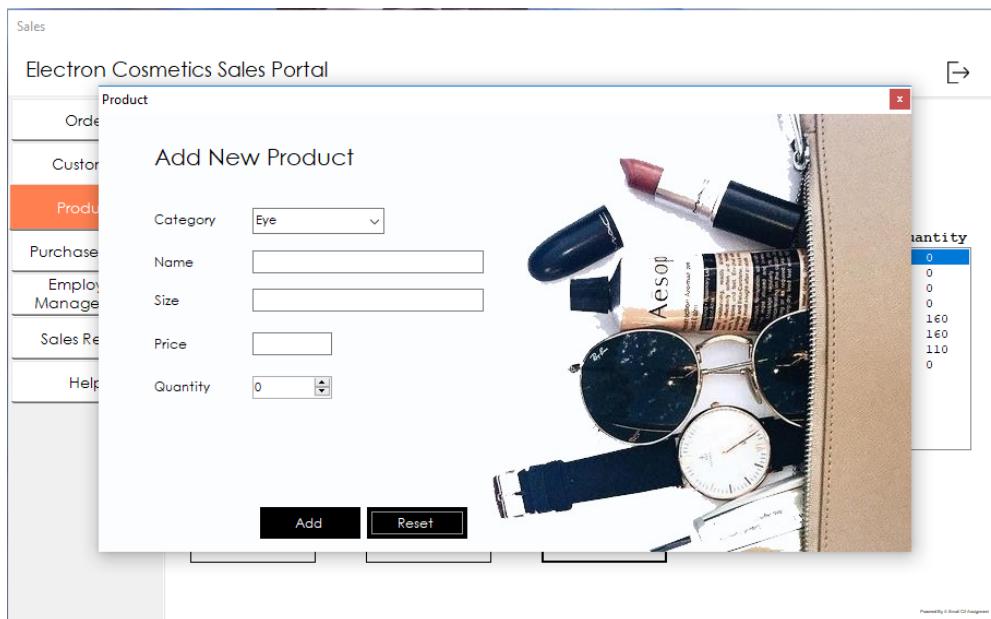
After clicking the “Update” button in the edit product page we can see that the price of the “Retractable Waterproof Eyeliner” has changed from RM50.61 to RM45.60.



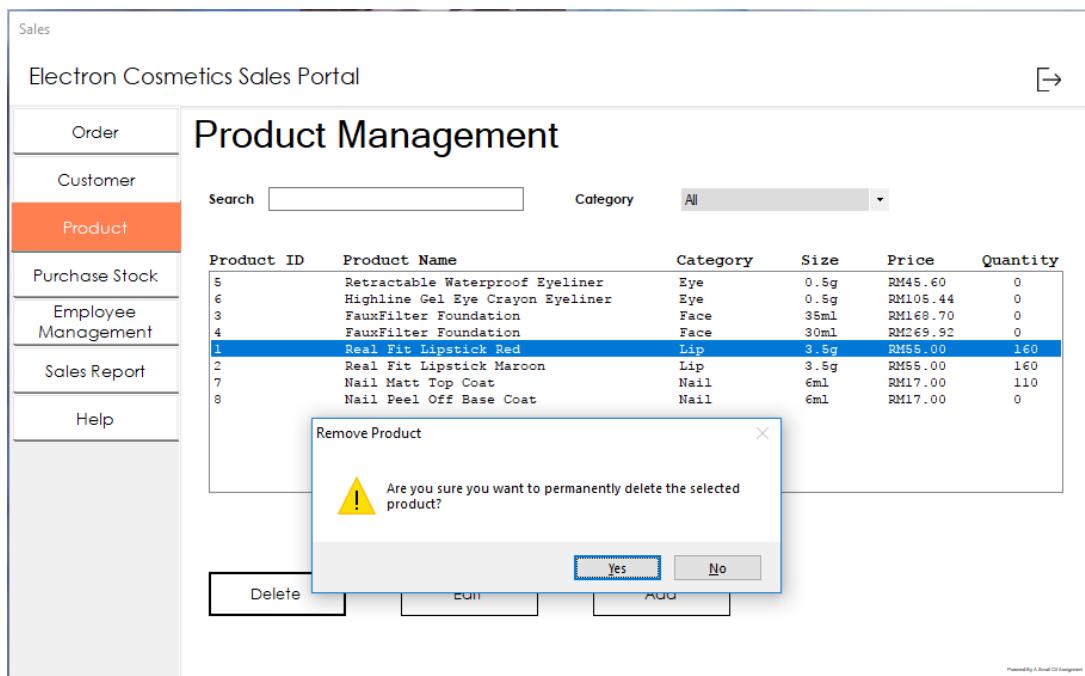
The “Add New Product” page will show after the “Add” button is clicked on the “Product Management” page. The user will be able to choose the category, name, size, price and quantity of the new product that he/she wants to add.



An error message will pop up if not all fields are filled before clicking “Add” in the new product page.



All fields in the “Add New Product” page will be cleared after the “Reset” button at the bottom is clicked.



A confirmation message will show after the user selects a product and clicks the “Delete” button.

Sales

Electron Cosmetics Sales Portal

Product Management

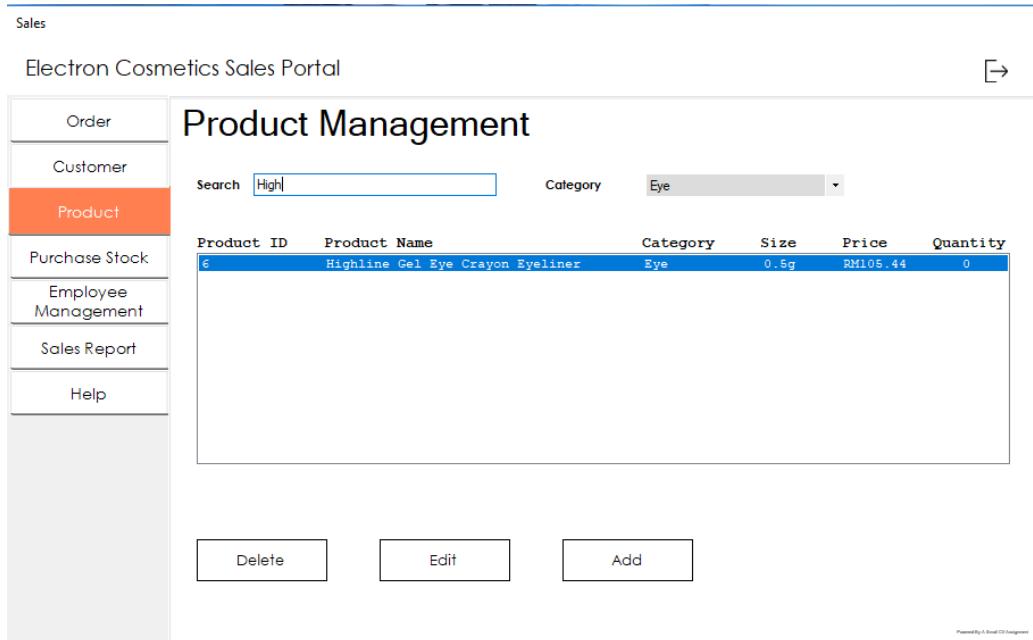
Order
Customer
Product
Purchase Stock
Employee Management
Sales Report
Help

Search Category

Product ID	Product Name	Category	Size	Price	Quantity
6	Highline Gel Eye Crayon Eyeliner	Eye	0.5g	RM105.44	0

Delete Edit Add

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The user can search for products by typing in the search bar and also the user can choose the category of the product as a filter for the search. The product that matches the search will show.

Stock Management Page

Sales

Electron Cosmetics Sales Portal

Stock Management																													
Current Stock																													
<p>Stock Level <input type="button" value="All"/></p> <table border="1"> <thead> <tr> <th>ID</th> <th>Name</th> <th>Quantity</th> </tr> </thead> <tbody> <tr><td>3</td><td>FauxFilter Foundation</td><td>0</td></tr> <tr><td>4</td><td>FauxFilter Foundation</td><td>0</td></tr> <tr><td>5</td><td>Retractable Waterproof Eyeliner</td><td>0</td></tr> <tr><td>6</td><td>Highline Gel Eye Crayon Eyeliner</td><td>0</td></tr> <tr><td>8</td><td>Nail Peel Off Base Coat</td><td>0</td></tr> <tr><td>7</td><td>Nail Matt Top Coat</td><td>115</td></tr> <tr><td>1</td><td>Real Fit Lipstick Red</td><td>160</td></tr> <tr><td>2</td><td>Real Fit Lipstick Maroon</td><td>160</td></tr> </tbody> </table> <p>Product ID <input type="text" value="8"/> Product Name <input type="text" value="Nail Peel Off Base Coat"/> Category <input type="text" value="Nail"/> Purchase Quantity <input type="button" value="100"/></p> <p><input type="button" value="Add To Cart"/> <input type="button" value="Remove From Cart"/> <input type="button" value="Purchase Stock"/></p>			ID	Name	Quantity	3	FauxFilter Foundation	0	4	FauxFilter Foundation	0	5	Retractable Waterproof Eyeliner	0	6	Highline Gel Eye Crayon Eyeliner	0	8	Nail Peel Off Base Coat	0	7	Nail Matt Top Coat	115	1	Real Fit Lipstick Red	160	2	Real Fit Lipstick Maroon	160
ID	Name	Quantity																											
3	FauxFilter Foundation	0																											
4	FauxFilter Foundation	0																											
5	Retractable Waterproof Eyeliner	0																											
6	Highline Gel Eye Crayon Eyeliner	0																											
8	Nail Peel Off Base Coat	0																											
7	Nail Matt Top Coat	115																											
1	Real Fit Lipstick Red	160																											
2	Real Fit Lipstick Maroon	160																											
Cart																													
<table border="1"> <thead> <tr> <th>ID</th> <th>Name</th> <th>Quantity</th> </tr> </thead> <tbody> <tr><td>5</td><td>Retractable Waterproof Eyeliner</td><td>50</td></tr> <tr><td>8</td><td>Nail Peel Off Base Coat</td><td>100</td></tr> </tbody> </table> <p><small>Powered By A Small CO Management</small></p>			ID	Name	Quantity	5	Retractable Waterproof Eyeliner	50	8	Nail Peel Off Base Coat	100																		
ID	Name	Quantity																											
5	Retractable Waterproof Eyeliner	50																											
8	Nail Peel Off Base Coat	100																											

Moving on to the next tab which is the “Purchase Stock” which shows the Stock Management page to purchase insufficient stock. There is a list of Products to choose from and the user can choose the quantity of each product and add it to the cart.

Sales

Electron Cosmetics Sales Portal

Stock Management																													
Current Stock																													
<p>Stock Level <input type="button" value="All"/></p> <table border="1"> <thead> <tr> <th>ID</th> <th>Name</th> <th>Quantity</th> </tr> </thead> <tbody> <tr><td>3</td><td>FauxFilter Foundation</td><td>0</td></tr> <tr><td>4</td><td>FauxFilter Foundation</td><td>0</td></tr> <tr><td>5</td><td>Retractable Waterproof Eyeliner</td><td>0</td></tr> <tr><td>6</td><td>Highline Gel Eye Crayon Eyeliner</td><td>0</td></tr> <tr><td>8</td><td>Nail Peel Off Base Coat</td><td>0</td></tr> <tr><td>7</td><td>Nail Matt Top Coat</td><td>115</td></tr> <tr><td>1</td><td>Real Fit Lipstick Red</td><td>160</td></tr> <tr><td>2</td><td>Real Fit Lipstick Maroon</td><td>160</td></tr> </tbody> </table> <p>Product ID <input type="text" value="8"/> Product Name <input type="text" value="Nail Peel Off Base Coat"/> Category <input type="text" value="Nail"/> Purchase Quantity <input type="button" value="100"/></p> <p><input type="button" value="Add To Cart"/> <input type="button" value="Remove From Cart"/> <input type="button" value="Purchase Stock"/></p>			ID	Name	Quantity	3	FauxFilter Foundation	0	4	FauxFilter Foundation	0	5	Retractable Waterproof Eyeliner	0	6	Highline Gel Eye Crayon Eyeliner	0	8	Nail Peel Off Base Coat	0	7	Nail Matt Top Coat	115	1	Real Fit Lipstick Red	160	2	Real Fit Lipstick Maroon	160
ID	Name	Quantity																											
3	FauxFilter Foundation	0																											
4	FauxFilter Foundation	0																											
5	Retractable Waterproof Eyeliner	0																											
6	Highline Gel Eye Crayon Eyeliner	0																											
8	Nail Peel Off Base Coat	0																											
7	Nail Matt Top Coat	115																											
1	Real Fit Lipstick Red	160																											
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ID	Name	Quantity																											
8	Nail Peel Off Base Coat	100																											

User can remove the products in the cart by clicking “Remove From Cart”. We can see that “Retractable Waterproof Eyeliner” has been removed from the cart.

Sales

Electron Cosmetics Sales Portal

Stock Management

Current Stock

ID	Name	Quantity
3	FauxFilter Foundation	0
4	FauxFilter Foundation	0
5	Retractable Water	Stock Purchase
6	Highline Gel Eye	
8	Nail Peel Off Base Coat	
7	Nail Matt Top Coat	
1	Real Fit Lipstick	
2	Real Fit Lipstick	

Cart

ID	Name	Quantity
8	Nail Peel Off Base Coat	100

Stock Purchase Notice Sent!

Product ID: 8 OK

Product Name: Nail Peel Off Base Coat

Category: Nail

Purchase Quantity: 100

Add To Cart Remove From Cart Purchase Stock

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A popup will show indicating that stock purchase notice has been sent after user clicks on the “Purchase Stock” button.

Sales

Electron Cosmetics Sales Portal

Stock Purchasing Form

Request For Stock Purchase

SP10249

From: Sales Department Date: 23/11/2017

To: Purchasing Department

ID	Name	Quantity	Unit Price	Total	Quantity
8	Nail Peel Off Base Coat	100	RM10.20	RM1,020.00	100
			Total	RM1,020.00	

Add To Cart Remove From Cart Purchase Stock

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A form page will show up showing the product name, quantity, unit price, and also the total price of the product that has been requested for stock purchase.

Employee Management Page

Sales

Electron Cosmetics Sales Portal

Employee Management

Employee ID	Account Type	Name	Sex	Date of Birth	Phone No
1	Admin	Kwang Yuen	Male	12/05/1987	012-3456250
3	Admin	Khai Liang	Male	17/10/1997	015-2941193
5	Employee	ShenYang	Male	24/04/1996	016-2847002
6	Employee	Hann Zern	Male	29/03/1998	019-3466605
2	Manager	Marcus	Male	29/12/1997	010-2239384

Buttons: Delete, Edit, Add

Moving on to the next tab which is the “Employee Management” tab which shows the list of employees that have access to the system. We can see that there are different account types which are Admin, Employee, and Manager. The account type of each employee will have different level accessibility of the system.

Sales

Electron Cosmetics Sales Portal

Sale Order

Order List

OrderID	Company Name	EmployeeID	Order Date	Payment Status	Order Status	Estimated Order Arrival
2	Sephora	1	22/11/2017	Paid	Pending	24/11/2017
4	Sephora	1	22/11/2017	Paid	Pending	24/11/2017
5	Sephora	1	22/11/2017	Not Paid	Pending	24/11/2017
3	MakeupCo	1	22/11/2017	Paid	Pending	24/11/2017
1	JibbyMakeup	1	22/11/2017	Paid	Pending	24/11/2017

Action Buttons: Edit, Delete, Notify Payment, Order Receipt, New Order

Employees with account type of “Admin” will have access to all tabs which are Order, Customer, Product, Purchase Stock, Employee Management, Sales Report, and Help.

Sales

Electron Cosmetics Sales Portal

Sale Order

Order List

OrderID	Company Name	EmployeeID	Order Date	Payment Status	Order Status	Estimated Order Arrival
2	Sephora	1	22/11/2017	Paid	Pending	24/11/2017
5	Sephora	1	22/11/2017	Not Paid	Pending	24/11/2017
3	MakeupCo	1	22/11/2017	Paid	Pending	24/11/2017
6	MakeupCo	1	23/11/2017	Paid	Pending	25/11/2017
7	MakeupCo	1	23/11/2017	Paid	Pending	25/11/2017
1	JibbyMakeup	1	22/11/2017	Paid	Pending	24/11/2017

Edit
Delete
Notify Payment
Order Receipt
New Order

Employees with account type of “Manager” will have access to all tabs that Admins have which are Order, Customer, Product, Purchase Stock, Sales Report, and Help except Employee Management.

Sales

Electron Cosmetics Sales Portal

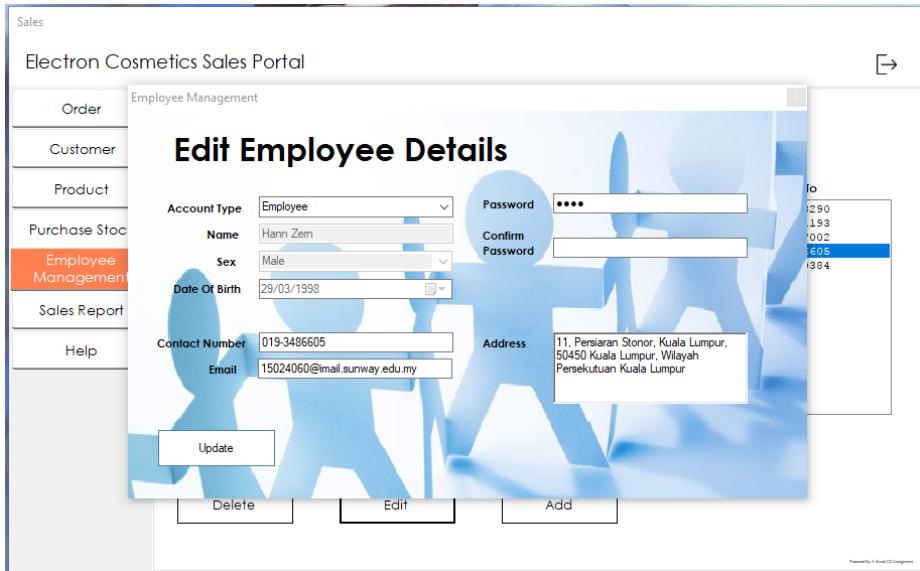
Sale Order

Order List

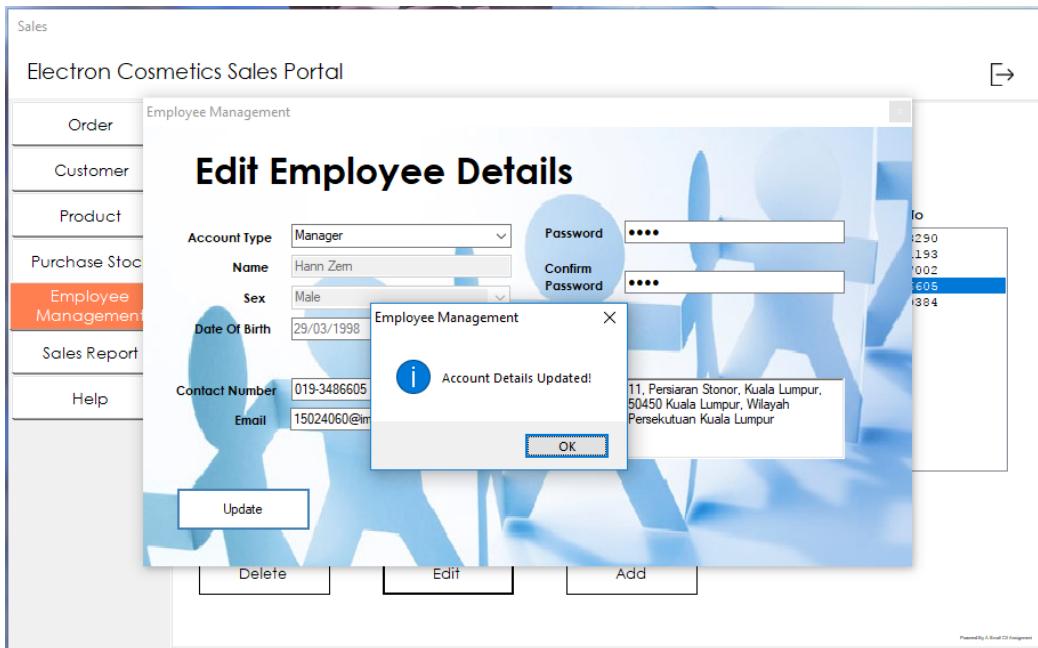
OrderID	Company Name	EmployeeID	Order Date	Payment Status	Order Status	Estimated Order Arrival
2	Sephora	1	22/11/2017	Paid	Pending	24/11/2017
5	Sephora	1	22/11/2017	Not Paid	Pending	24/11/2017
3	MakeupCo	1	22/11/2017	Paid	Pending	24/11/2017
6	MakeupCo	1	23/11/2017	Paid	Pending	25/11/2017
7	MakeupCo	1	23/11/2017	Paid	Pending	25/11/2017
1	JibbyMakeup	1	22/11/2017	Paid	Pending	24/11/2017

Edit
Delete
Notify Payment
Order Receipt
New Order

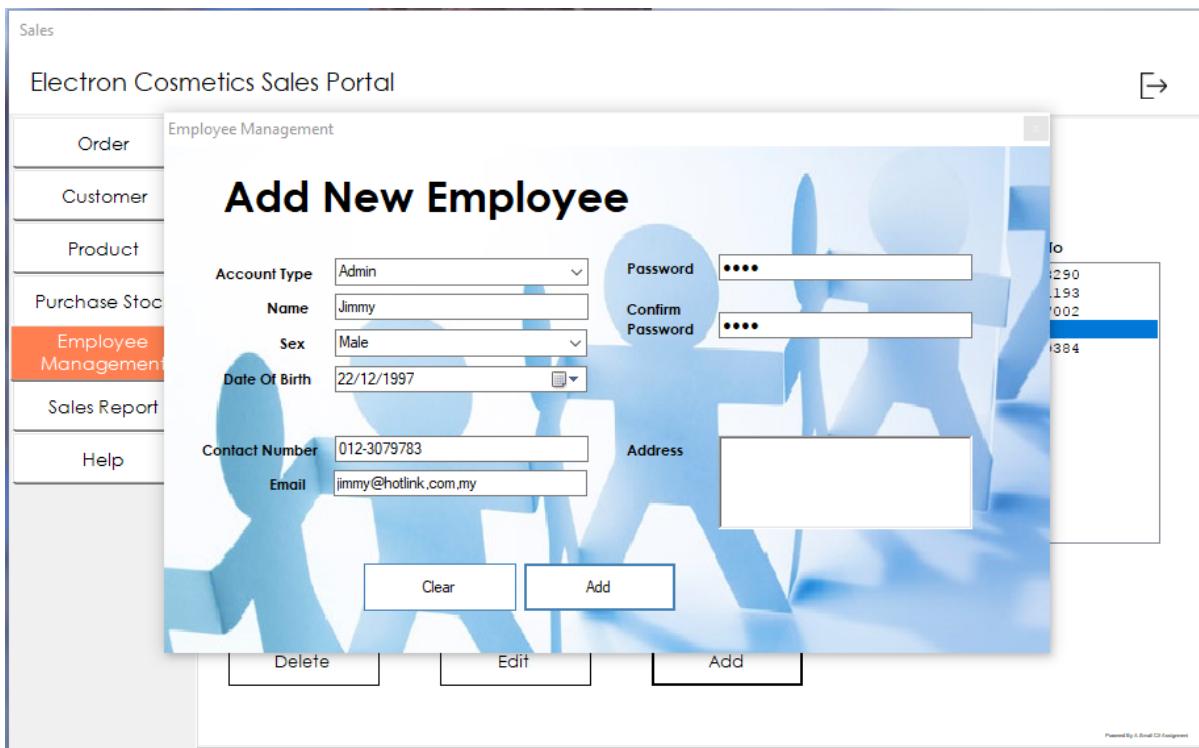
Employees with account type of “Employee” will only have access to tabs like Order, Customer, Product, Purchase Stock, and Help only.



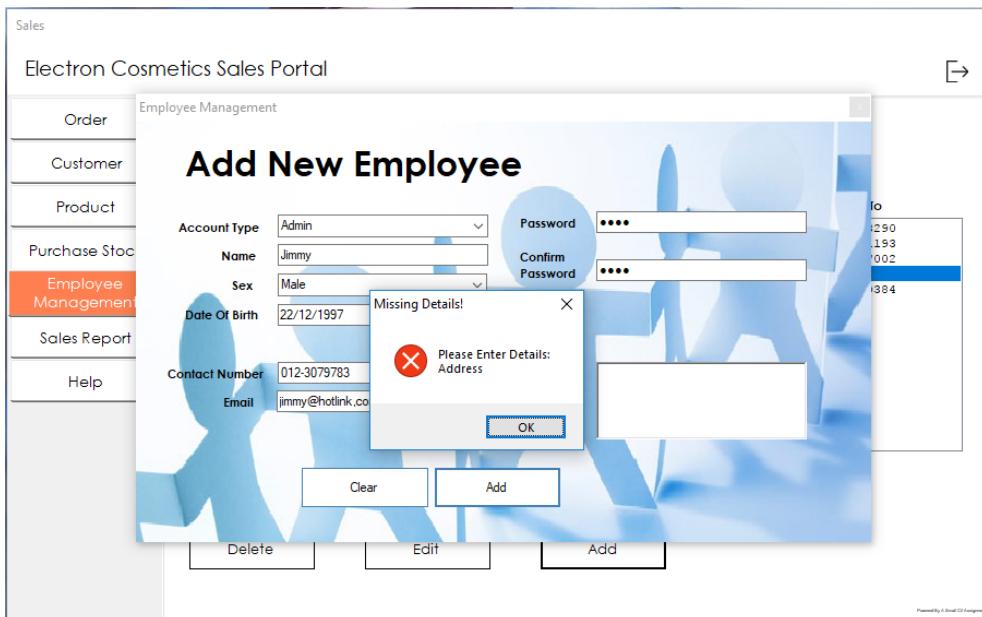
Back at the Employee Management Page, only an admin can edit the other employee's details such as account type, password, contact number, email, and address.



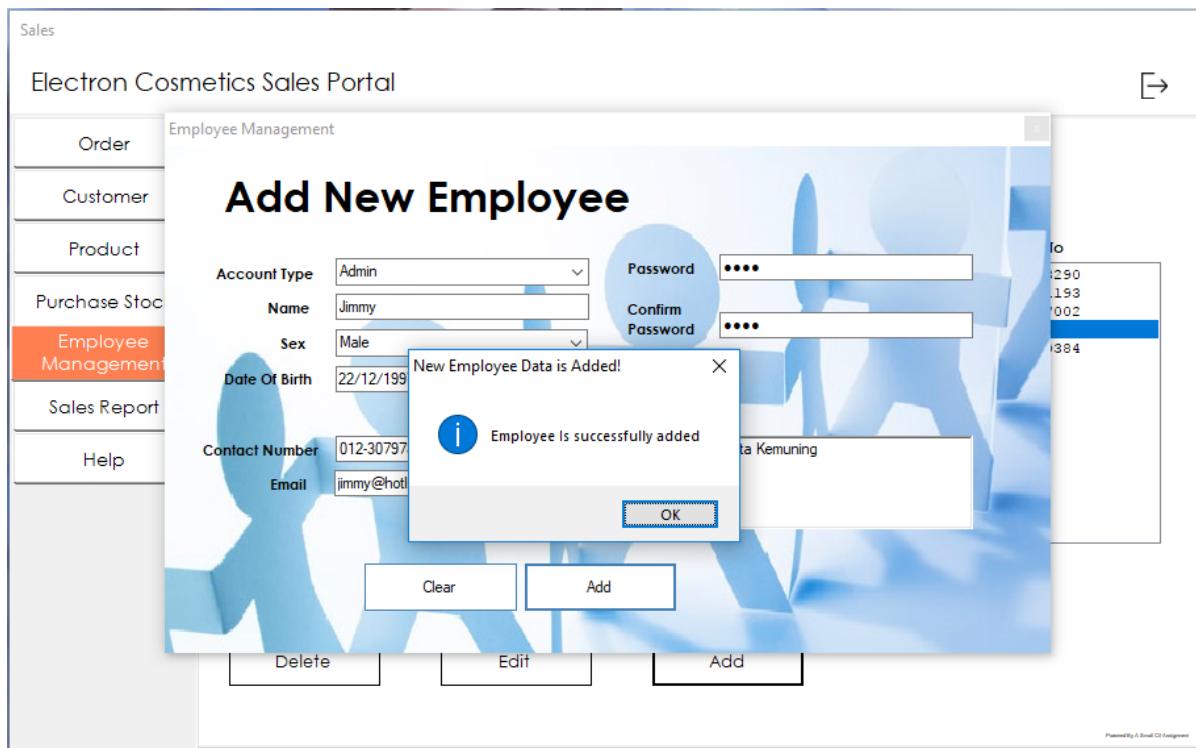
Once the update button is clicked, a popup will appear saying “Account Details Updated !”.



The admin can add a new employee by clicking the “Add” button and filling the fields required to add a new employee.



If not all field are filled in the “Add New Employee” page an error message will pop up.



If all field are filled, a message saying, “Employee is successfully added” will pop up.

Employee Management						
Employee ID	Account Type	Name	Sex	Date of Birth	Phone No	
1	Admin	Kwang Yuen	Male	13/05/1997	012-3453290	
3	Admin	Khai Liang	Male	17/10/1997	019-2941193	
7	Admin	Jimmy	Male	22/12/1997	012-3079783	
5	Employee	ShenYang	Male	24/04/1996	016-2847002	
6	Employee	Hann Zern	Male	29/03/1998		
2	Manager	Marcus	Male	29/12/1997	010-2239384	

We can see that a new employee named “Jimmy” with a Account type of “Admin” has been added to the Employee list.

Sales

Electron Cosmetics Sales Portal

Employee Management

Employee ID	Account Type	Name	Sex	Date of Birth	Phone No
1	Admin	Kwang Yuen	Male	13/05/1997	012-3453290
3	Admin	Khai Liang	Male	17/10/1997	019-2941193
7	Admin	Jimmy	Male	22/12/1997	012-3079783
5	Employee	ShenYang	Male	24/04/1996	016-2847002
6	Employee	Hann Zern	Male	29/03/1998	019-3486605
2	Manager	Marcus	Male	29/12/1997	010-2239384

Remove Employee

Are you sure you want to permanently delete the selected Employee?

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If the user chooses an employee from the list and clicks the “Delete” button, a confirmation window will popup.

Sales

Electron Cosmetics Sales Portal

Employee Management

Employee ID	Account Type	Name	Sex	Date of Birth	Phone No
1	Admin	Kwang Yuen	Male	13/05/1997	012-3453290
3	Admin	Khai Liang	Male	17/10/1997	019-2941193
5	Employee	ShenYang	Male	24/04/1996	016-2847002
6	Employee	Hann Zern	Male	29/03/1998	019-3486605
2	Manager	Marcus	Male	29/12/1997	010-2239384

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We can see from the picture above that employee “Jimmy” has been removed from the employee list.

Sales

Electron Cosmetics Sales Portal

Employee Management

Employee ID	Account Type	Name	Sex	Date of Birth	Phone No
1	Admin	Kwang Yuen	Male	13/05/1997	012-3456290
3	Admin	Khai Liang	Male	17/10/1997	019-2941193

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The user can also type into the search bar to search for an employee. There is also a filter of Account Type for an easier search.

Sales Report Page

Sales

Electron Cosmetics Sales Portal

Sales Report

Daily Summary of Sales

Sales Date	23/11/2017				
Total Orders	2	Best Selling Product	4	FauxFilter Foundation	7 Units
Total Sales	RM2,480.54	Employee With The Highest Total Sales	1	Kwang Yuen	RM2,480.54
		Customer With The Highest Purchase Order	2	MakeupCo	RM2,480.54

Detailed Sales Report

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Moving on to the second last tab which is the “Sales Report”. This is where the full report of sales can be viewed. The user can specify the date that he/she wants to view.

The screenshot shows a software interface for 'Electron Cosmetic' with a sidebar menu on the left. The 'Sales Report' tab is selected, highlighted in orange. The main window displays two separate sales reports in tables.

Sales Report (Customer ID : 2)

Product ID	Name	Price	Qty	Total
5	Retractable Waterproof Eyeliner	RM45.60	7	RM319.20
6	Highline Gel Eye Crayon Eyeliner	RM105.44	10	RM1,054.40
3	FauxFilter Foundation	RM168.70	19	RM3,205.30
4	FauxFilter Foundation	RM269.92	24	RM6,478.08

Total RM11,056.98

Sales Report (Order ID : 5)

Product ID	Name	Price	Qty	Total
7	Nail Matt Top Coat	RM17.00	5	RM85.00

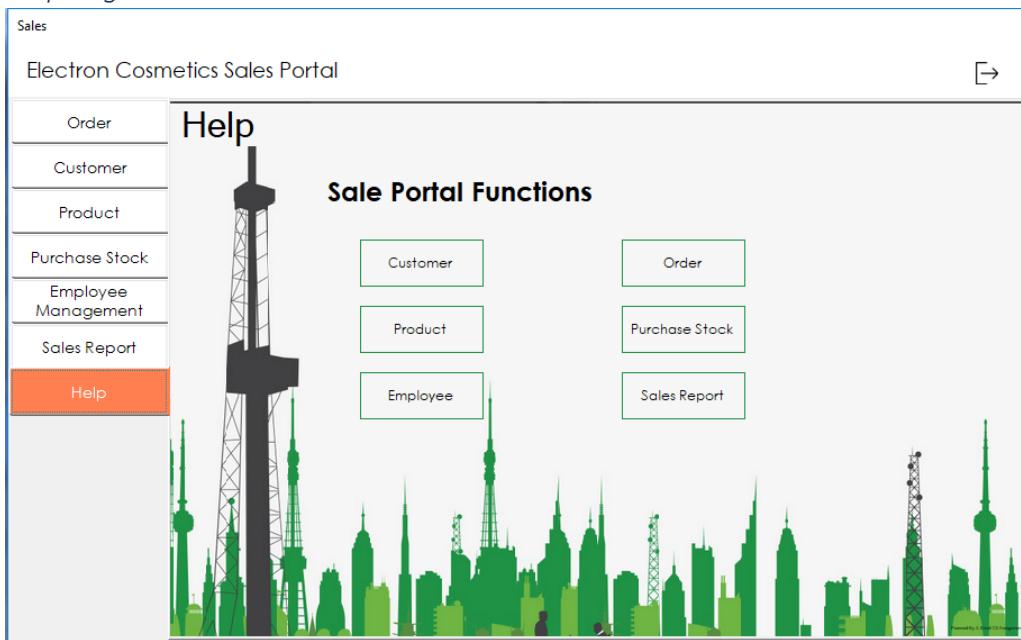
Total RM85.00

On the right side of the sales report window, there are three additional boxes with the following values:

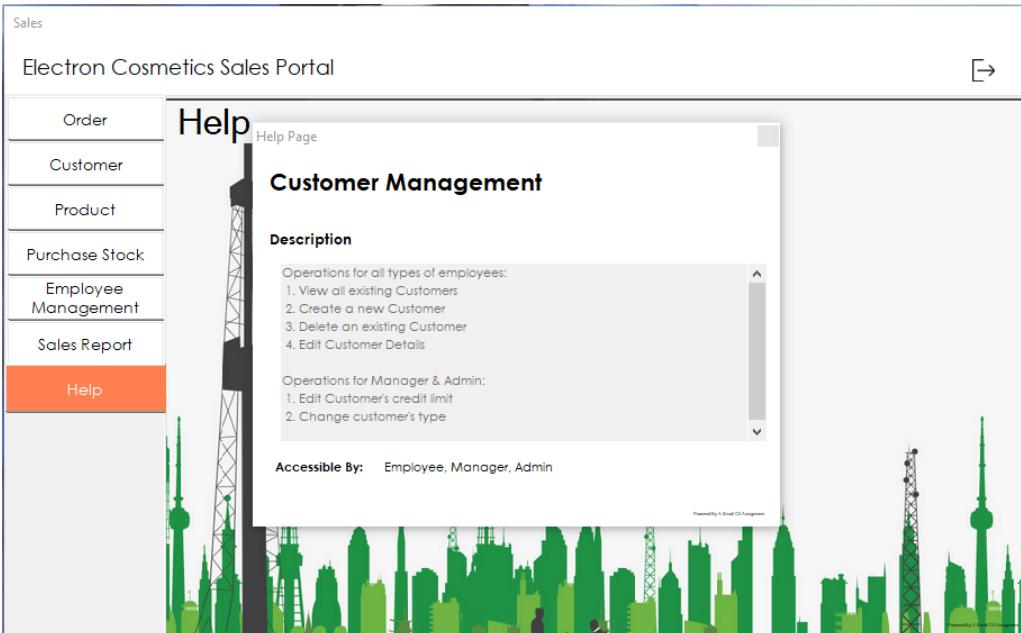
- 74 Units
- RM43,506.58
- RM28,063.40

The sales report will pop up in another window showing all the products sold in that specific date, along with each individual description, price, quantity, and total sales of the day.

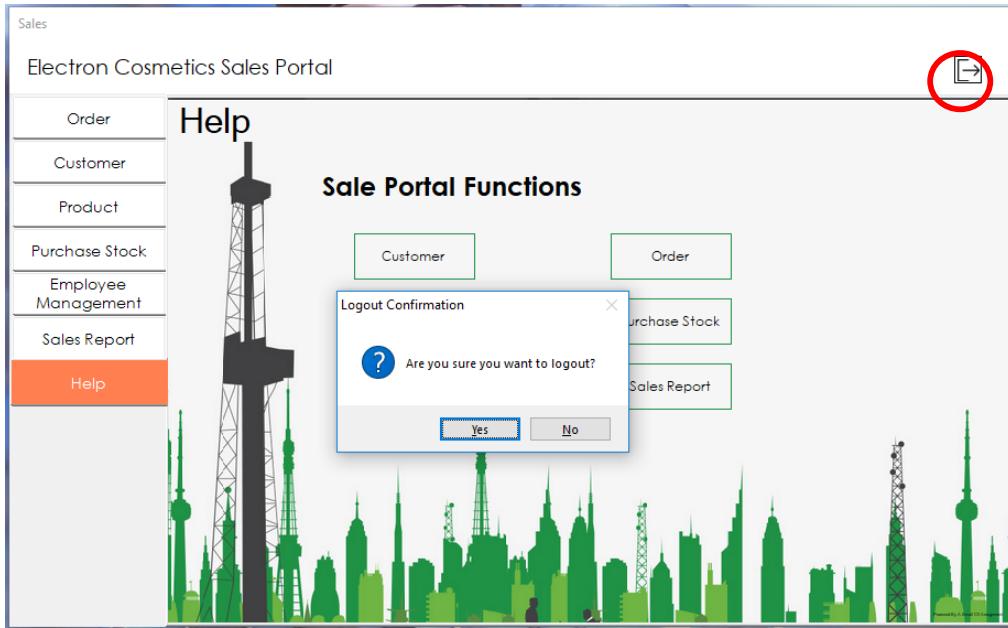
Help Page



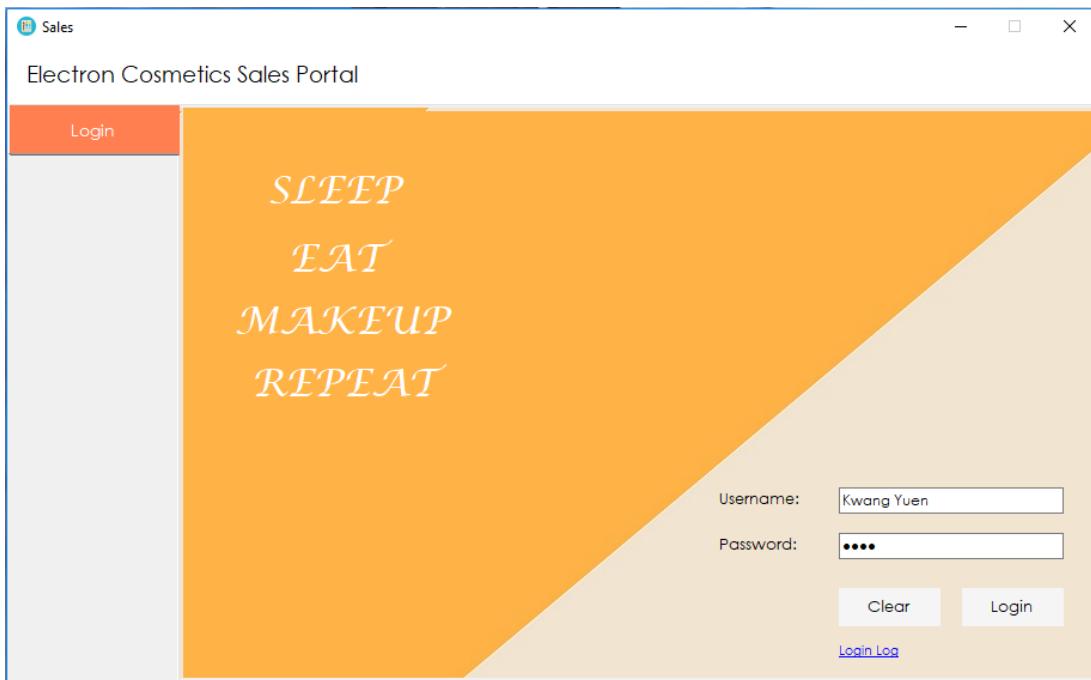
The final tab which is help is to help employees which are not sure about which tab and its functions. It is clearly listed when the user clicks on one of the buttons such as “Customer”, “Order”, “Product”, “Purchase Stock”, “Employee”, “Sales Report”.



After clicking the “Customer” button, it shows the “Customer Management” help page, the description of the tab and the operations. It also shows who is accessible to that specific tab which are account types of “Employee”, “Manager”, “Admin”.



The button on the top right corner that is circled red is the button to log out from the account. Once its clicked, a confirmation popup will appear.



After confirming the log out, it will bring the user back to the login page.

Explanation of UI Design

The screenshots show the Electron Cosmetics Sales Portal interface. The left sidebar contains tabs for Order, Customer, Product, Purchase Stock, Employee Management, Sales Report, and Help. The main content area displays three different management screens:

- Customer Management:** Shows a list of customers with columns: Customer ID, Company, Customer Type, Contact Person, and Contact Num. Data rows include 1 (Sephora, Premium, Brad Pitt, 012-12345678), 2 (MakeupCo, Normal, Tommy Cruise, 03-99204212), and 3 (JibbyMakeup, Premium, Mila Lawrence, 03-88888000). Buttons at the bottom are Delete, Edit, and Add.
- Employee Management:** Shows a list of employees with columns: Employee ID, Account Type, Name, Sex, Date of Birth, and Phone No. Data rows include 1 (Admin, Admin, Evans Yuan, Male, 13/08/1987, 012-3456789), 2 (Employee, Admin, Ethan Liang, Male, 17/10/1987, 018-2941159), 3 (Employee, Standard, Steven Lee, Male, 24/05/1988, 014-56789012), 4 (Employee, Standard, Hann Zern, Male, 25/03/1988, 013-34866005), and 6 (Manager, Manager, Marcus, Male, 29/12/1987, 010-22398984). Buttons at the bottom are Delete, Edit, and Add.
- Product Management:** Shows a list of products with columns: Product ID, Product Name, Category, Size, Price, and Quantity. Data rows include 1 (Retractable Waterproof Eyeliner, Eye, 0.5g, \$50.00, 150), 2 (High Pigment Crayon Eyeliner, Eye, 0.5g, \$15.44, 150), 3 (FauxFilter Foundation, Face, 30ml, \$169.70, 200), 4 (FauxFilter Foundation, Face, 30ml, \$269.92, 150), 5 (Real Fit Lipstick Red, Lip, 3.5g, \$55.00, 160), 6 (Real Fit Lipstick Mason, Lip, 3.5g, \$55.00, 150), 7 (Nail Matte Top Coat, Nail, 6ml, \$17.00, 115), and 8 (Nail Dew Off Base Coat, Nail, 6ml, \$17.00, 150). Buttons at the bottom are Delete, Edit, and Add.

The overall design of the system is almost similar for all the functions, as this will reduce the need of the end-user to learn how to use all of the different functions in the system. This can be seen in the form on the left, where there are similar design and components:

- Record Filter
- Listbox
- Delete, Edit, Add button

The Record Filter

The filters for the record is placed above the listbox, as this would be the first the thing the user would be able to see. The record filter consists of a textbox and a combobox. The reason a textbox is used, as it allows the user to search for any specific keywords. The reason a combobox is used, is to provide a fixed filter to be chosen.

Listbox

The listbox is placed in the middle to display all the records, and each will only display the necessary information needed.

Buttons

The buttons are placed at the bottom and after the listbox, is because the user will first interact with the listbox before moving to the buttons.

The entire system uses a tabcontrol to allow the user to switch between functions easily and at same time keep track of which function are they currently at. The tabcontrol is placed at the right side of the form as normally a human's eye will scan through things from top – bottom & left – right. Thus, it is logical to put the tabs on the right side of the form, as it would be the first thing the user sees and interact with.

Test Data

Adding a new employee

Before

The screenshot shows the 'Employee Management' screen of the 'Electron Cosmetics Sales Portal'. The left sidebar has links for Sales, Order, Customer, Product, Purchase Stock, Employee Management (which is selected), Sales Report, and Help. The main area has a search bar and a dropdown for Account Type ('All'). A table lists employees with columns: Employee ID, Account Type, Name, Sex, Date of Birth, and Phone No. The data is as follows:

Employee ID	Account Type	Name	Sex	Date of Birth	Phone No
1	Admin	Kuang Yuen	Male	13/05/1997	012-3453290
3	Admin	Khai Liang	Male	17/10/1997	019-2941193
5	Employee	ShenYang	Male	24/04/1996	016-2847002
6	Employee	Hann Zern	Male	25/03/1998	015-3486605
2	Manager	Marcus	Male	29/12/1997	010-2239394

Buttons at the bottom are Delete, Edit, and Add.

Input

The screenshot shows the 'Add New Employee' dialog box. It has fields for Account Type (Employee), Name (Johnny Chang), Sex (Male), Date Of Birth (13/02/1985), Contact Number (010-5693058), Email (johnny_c@yahoo.com), Password (****), and Confirm Password (****). The address field contains '3, Jalan PJS 11/15, Bandar Sunway, 47500 Petaling Jaya, Selangor'. Buttons at the bottom are Clear and Add.

Output

The screenshot shows the 'Employee Management' screen again. The newly added employee 'Johnny Chang' is now listed in the table. The row for 'Johnny Chang' is highlighted with a red border. The data is as follows:

Employee ID	Account Type	Name	Sex	Date of Birth	Phone No
1	Admin	Kuang Yuen	Male	13/05/1997	012-3453290
3	Admin	Khai Liang	Male	17/10/1997	019-2941193
5	Employee	ShenYang	Male	24/04/1996	016-2847002
6	Employee	Hann Zern	Male	25/03/1998	015-3486605
7	Employee	Johnny Chang	Male	13/02/1985	010-5693058
2	Manager	Marcus	Male	29/12/1997	010-2239394

Buttons at the bottom are Delete, Edit, and Add.

Adding a new product

Before

Sales

Electron Cosmetics Sales Portal

Product Management

Search Category

Product ID	Product Name	Category	Size	Price	Quantity
5	Retractable Waterproof Eyeliner	Eye	0.5g	\$50.41	190
6	Highline Gel Eye Crayon Eyeliner	Eye	0.5g	\$105.44	190
3	FauxFilter Foundation	Face	35ml	\$168.70	200
4	FauxFilter Foundation	Face	30ml	\$269.92	190
1	Real Fit Lipstick Red	Lip	3.5g	\$55.00	160
2	Real Fit Lipstick Maroon	Lip	3.5g	\$55.00	135
7	Nail Matt Top Coat	Nail	6ml	\$17.00	115
8	Nail Peel Off Base Coat	Nail	6ml	\$17.00	190

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Input

Product

Add New Product

Category: Lip

Name: Canola Honey Lip Balm

Size: 3.5g

Price: 29

Quantity: 100



Output

Sales

Electron Cosmetics Sales Portal

Product Management

Search Category

Product ID	Product Name	Category	Size	Price	Quantity
5	Retractable Waterproof Eyeliner	Eye	0.5g	\$50.41	190
6	Highline Gel Eye Crayon Eyeliner	Eye	0.5g	\$105.44	190
3	FauxFilter Foundation	Face	35ml	\$168.70	200
4	FauxFilter Foundation	Face	30ml	\$269.92	190
1	Real Fit Lipstick Red	Lip	3.5g	\$55.00	160
2	Real Fit Lipstick Maroon	Lip	3.5g	\$55.00	135
10	Canola Honey Lip Balm	Lip	3.5g	\$29.00	100
7	Nail Matt Top Coat	Nail	6ml	\$17.00	115
8	Nail Peel Off Base Coat	Nail	6ml	\$17.00	190

Powered by Front End Development

Adding a new customer

Before

Customer ID	Company	Customer Type	Contact Person	Contact Num
1	Sephora	Premium	Brad Pitt	03-61500123
2	MakeupCo	Normal	Tommy Cruise	03-99204212
3	JibbyMakeup	Premium	Mila Lawrence	03-8888 8000

Input

Output

Customer ID	Company	Customer Type	Contact Person	Contact Num
1	Sephora	Premium	Brad Pitt	03-61500123
2	MakeupCo	Normal	Tommy Cruise	03-99204212
3	JibbyMakeup	Premium	Mila Lawrence	03-8888 8000
4	sunshine Makeup	Normal	Anwar Smith	03-8736 4620

Adding a new order

Before

Sales

Electron Cosmetics Sales Portal

Sale Order

Order List

OrderID	Company Name	EmployeeID	Order Date	Payment Status	Order Status	Estimated Order Arrival
2	Sephora	1	22/11/2017	Paid	Pending	24/11/2017
4	Sephora	1	22/11/2017	Paid	Pending	24/11/2017
5	Sephora	1	22/11/2017	Not Paid	Pending	24/11/2017
3	MakeupCo	1	22/11/2017	Paid	Pending	24/11/2017
1	JbbyMakeup	1	22/11/2017	Paid	Pending	24/11/2017
6	JbbyMakeup	2	23/11/2017	Not Paid	Pending	25/11/2017

Edit

Delete

Notify Payment

Order Receipt

New Order

Input

Choose Products

Customer Info

Company Name:	Sephora
Customer ID:	1
Customer Name:	Brad Pitt
Customer Type:	Premium
Contact Number:	03-61500123
Payment Method:	Cash

Available Products

Product ID	Name	Price (RM)	Quantity
5	Retractable Waterproof Eyeliner	50.61	200
6	Highline Gel Eye Crayon Eyeliner	105.44	200
3	FauxFilter Foundation	168.7	200
4	FauxFilter Foundation	269.92	200
1	Real Fit Lipstick Red	55	160
2	Real Fit Lipstick Maroon	55	135
7	Nail Matt Top Coat	17	115
8	Nail Peel Off Base Coat	17	200

Cart

Product ID	Name	Price (RM)	Quantity
1	Retractable Waterproof Eyeliner	50.61	10
6	Highline Gel Eye Crayon Eyeliner	105.44	10
8	Nail Peel Off Base Coat	17	10
4	FauxFilter Foundation	269.92	10

Total Price: \$4,429.70
Estimated Arrival Date: 25/11/2017

CONFIRM ORDER

Output

Sales

Electron Cosmetics Sales Portal

Sale Order

Order List

OrderID	Company Name	EmployeeID	Order Date	Payment Status	Order Status	Estimated Order Arrival
2	Sephora	1	22/11/2017	Paid	Pending	24/11/2017
4	Sephora	1	22/11/2017	Paid	Pending	24/11/2017
5	Sephora	1	22/11/2017	Not Paid	Pending	24/11/2017
7	Sephora	1	23/11/2017	Paid	Pending	25/11/2017
3	MakeupCo	1	22/11/2017	Paid	Pending	24/11/2017
1	JbbyMakeup	1	22/11/2017	Paid	Pending	24/11/2017
6	JbbyMakeup	2	23/11/2017	Not Paid	Pending	25/11/2017

Edit

Delete

Notify Payment

Order Receipt

New Order