



Institute of Computer Engineering Technology



iCET Certified Developer

COURSE WORK

Assignment	Object Oriented Programming
Batch No	iCD 112
Name	Java Swings Application
Ass. Date	12th October 2024

Guidelines

- ❖ Refer to the Coursework Guidelines at the end to understand the specific guidelines to be followed when developing the project required.
- ❖ You should use your knowledge of JAVA Swing, and MVC design pattern to implement this coursework.
- ❖ Adhere to best practices for Java Swing development.
- ❖ Organize your code logically into packages and classes, keeping related functionality together.
- ❖ Follow consistent naming conventions for classes, variables, and methods to enhance code readability.
- ❖ All validations that have been mentioned in this document should be implemented in your program.

Case Study

The Fashion Shop, recently started an online T-shirt store, it has a large number of transactions every day, the Fashion shop owner requires a system to manage online t-shirt orders. As you are a talented iCET student, they have thought to give you a chance to make a system for them.

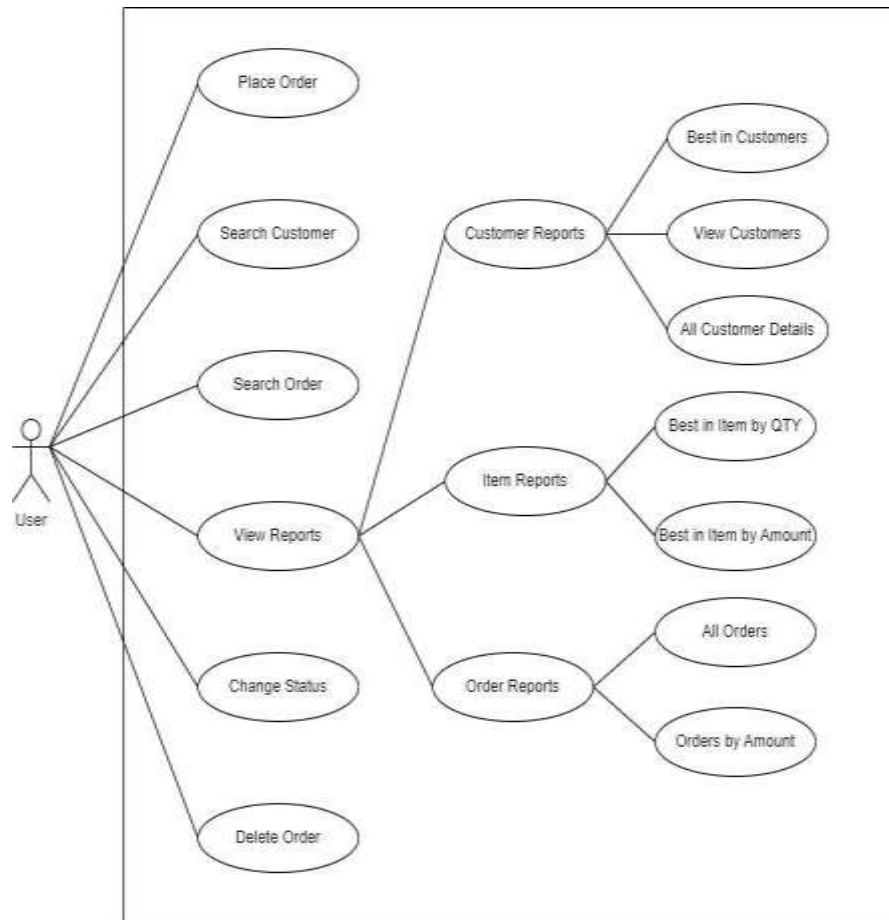


Figure 1 – Use case Diagram

Requirements

You are supposed to create a Java application to manage an online T-shirt store. In the application, you need to implement the following use cases.

When you run the application, you should come up with something similar to the following Swing GUI where the user can select an option that they want to execute. This will be the Home Page of the application that you will be developing.

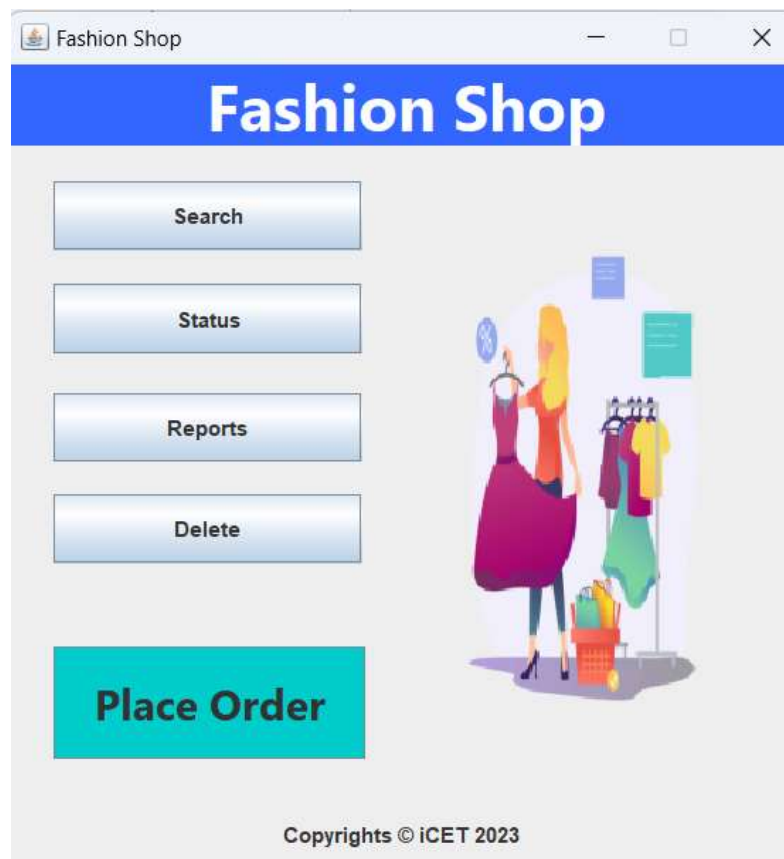


Figure 2 - Home page of the Fashion Shop

01. Place Order

Placing a new order is easy. The system keeps 5 details related to the Order. They are Order ID, Customer Contact Number as the Customer ID, T-Shirt size, Quantity, and Order Status. Prices of T-Shirts according to sizes are given below and they are constant.

T-Shirt size	Price (LKR)
XS	600.00
S	800.00
M	900.00
L	1000.00
XL	1100.00
XXL	1200.00

❖ Order ID

The Order ID should be generated by the system and the Order ID should start with ‘ODR#’ and should have 6 numbers. When the user selects the Place Order option on the home page, Place Order window should be loaded, the Order ID should be generated by the system and the user should place their Order under that Order ID. The order ID cannot be generated randomly and generate the next Order ID accordingly to the last Order ID. Order ID cannot be repeated.

❖ Customer Contact Number

When entering the Contact Number, it should be validated. Contact Numbers should start with a “0” and must have 10 numbers. If the user enters an invalid Contact Number (as an example, start without “0” or the Contact Number has more than 10 numbers), an alert error message should be displayed (Example – “Invalid Input”)

❖ T-Shirt Size

There are 6 T-Shirt sizes (XS/S/M/L/XL/XXL). The user should input What T-shirt size they want and the customer can only place an order in one size at a time. If the user enters an invalid response, an alert error message should be displayed.

❖ Quantity

The user should input the T-Shirt Quantity. Any value greater than 0 can be entered as quantity. If the user enters an invalid response (Lesser than zero), an alert error message should be displayed.

❖ Amount

The program should calculate the total amount and display it.

❖ Order Status

There are 3 order statuses. They are **PROCESSING** / **DELIVERING** / **DELIVERED**. The order status should be declared as a static final variable. Declare that static variable as 0 for **PROCESSING**, 1 for **DELIVERING**, and 2 for **DELIVERED**. While the order is being placed, the system should save **PROCESSING** as the initial status.

After the user enters the details and presses the “place” button, the order will be placed successfully and an alert message will be displayed to the user as shown below. If the user wishes to return to the homepage, the user should press the back button.

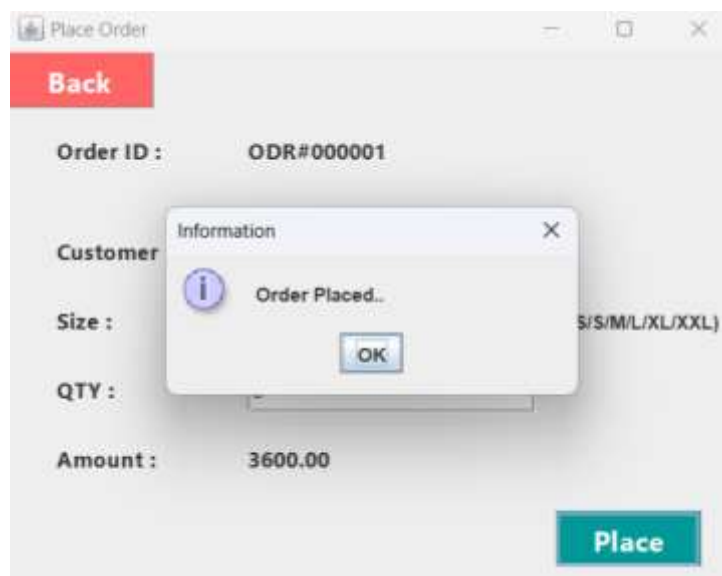


Figure 3 – Place Order Alert

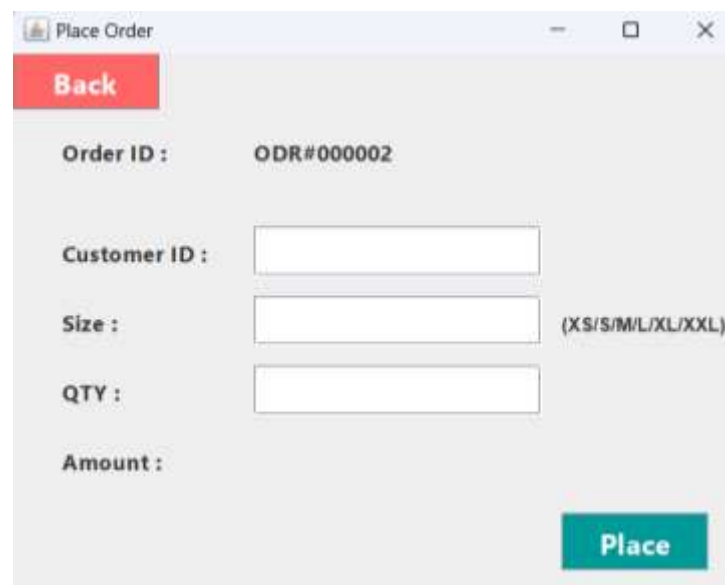


Figure 4 – Place Order

02. Search Customer

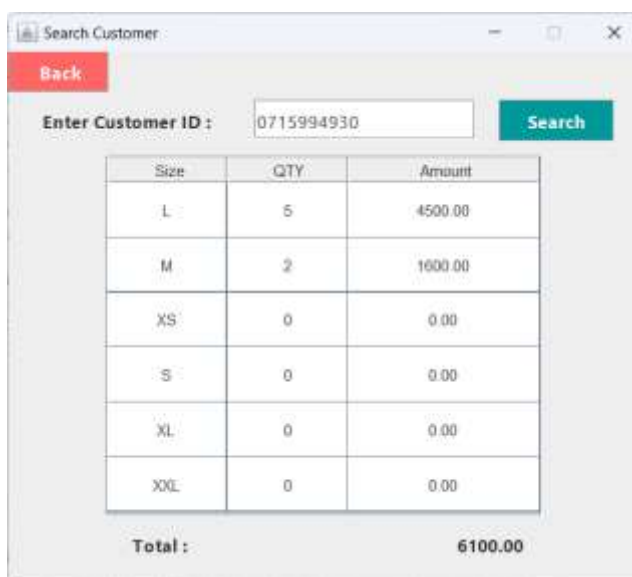
Once the user presses the search button in the homepage, the options shown below should be displayed.



Figure 5 – Search Options

With the option Search customer, a customer can be searched from the system. First, the user needs to enter the Customer Contact Number. The contact number should be validated and checked in the system. Otherwise, an alert error message should be displayed.

If the user enters a contact number that is already in the system, Sizes of all the placed orders with that contact number should be displayed to the user. The sizes should be sorted in the descending order by amount. The user can return back to the main menu by pressing the back button.



Search Customer

Back

Enter Customer ID : **Search**

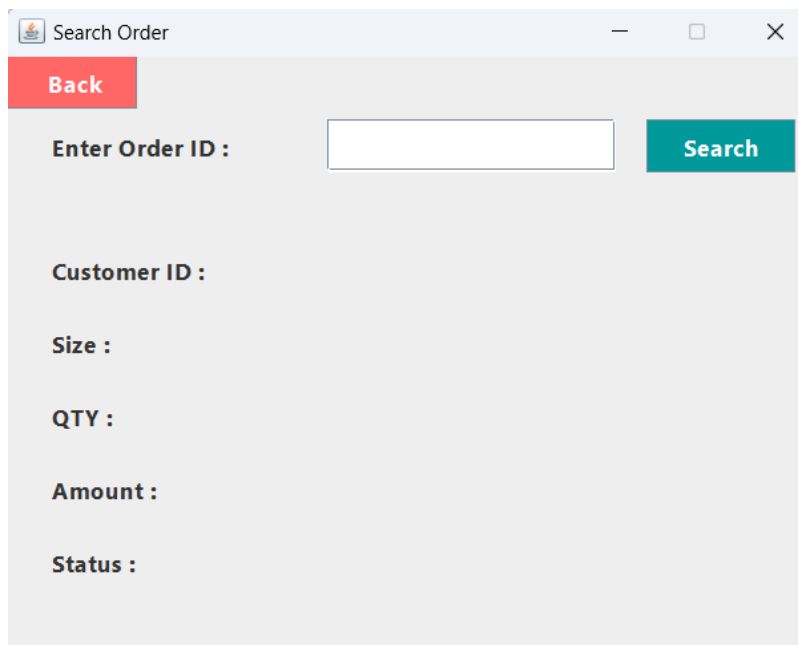
Size	QTY	Amount
L	5	4500.00
M	2	1600.00
XS	0	0.00
S	0	0.00
XL	0	0.00
XXL	0	0.00

Total : 6100.00

Figure 6 – Search Customer

03. Search Order

Once the user presses the search button in the homepage, the options shown below should be displayed.



Search Order

Back

Enter Order ID : **Search**

Customer ID :

Size :

QTY :

Amount :

Status :

Figure 7 – Search Order

With the option Search Order, the user can view order details. First, the user needs to enter a valid Order ID. After the user enters the Order ID, the system should search if this Order ID is an existing Order ID or not. If this Order ID hasn't been added yet, then an alert error message should be displayed as shown below.

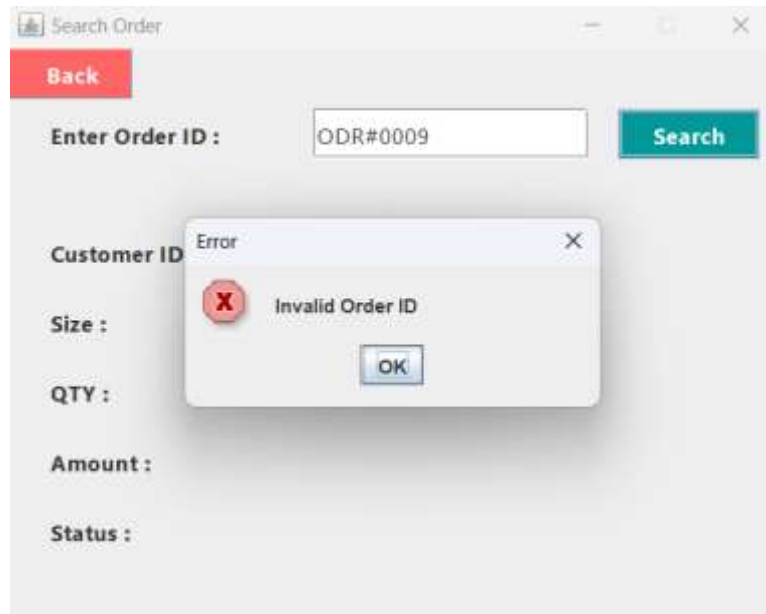


Figure 8 – Invalid Search Order

If the Order ID is correct, the order details should be displayed as shown below. If the user requires to return to the homepage, The user can return back to the main menu by pressing the back button.

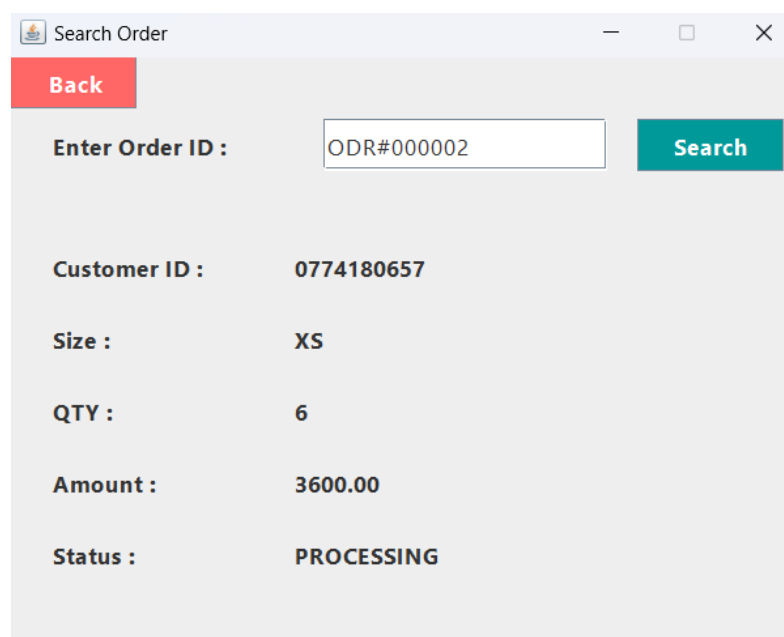


Figure 9 – Successful Search Order

04. View Reports

Once the user presses the Reports button in the homepage, the options should be displayed as shown below.




Figure 10 – Report Options

❖ Customer Reports

1. Best In Customers

- With this option, the program should calculate the customers total amount and print it in descending order.
- If the customer has an order that consists of many t-shirt sizes, the program should calculate each amount separately according to the sizes.
- The sum of the calculated amounts should be printed as the total amount of the customer.
- The Customer ID cannot be repeated in the table.



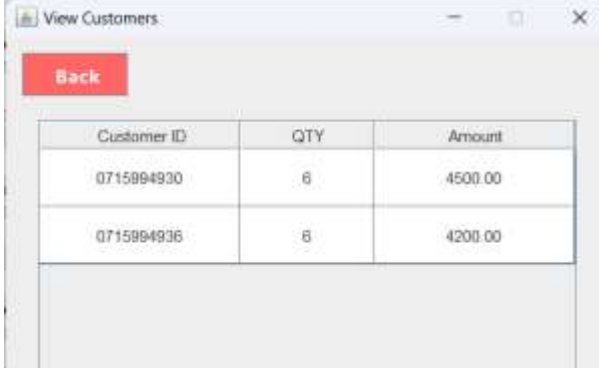
The 'Best In Customers' window displays a table with three columns: 'Customer ID', 'QTY', and 'Amount'. It includes a 'Back' button at the top left. The table contains two rows of data.

Customer ID	QTY	Amount
0715994930	6	4500.00
0715994936	6	4200.00

Figure 11 – Best in Customer Report

2. View Customers

- The user can press the View Customers Button under Customer Reports to access this option.
- In this option, it runs the same as the above option, but there is no sorting.

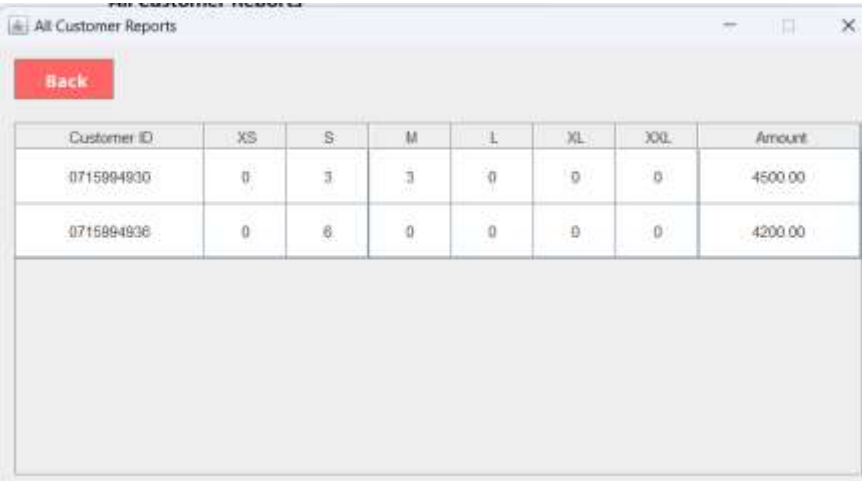


Customer ID	QTY	Amount
0715994930	6	4500.00
0715994936	8	4200.00

Figure 12 - Customer Report

3. All Customer Reports

- The user can press the All-Customer Reports Button under Customer Reports to access this option. Figure 11 - Customer Report
- In this option, the t-shirt sizes should be separated and displayed. If the customer has an order that consists of many t-shirt sizes, the program should calculate each amount separately according to the sizes.
- The sum of the calculated amounts should be printed as the total amount of the customer. The Customer ID cannot be repeated in the table.



Customer ID	XS	S	M	L	XL	XXL	Amount
0715994930	0	3	3	0	0	0	4500.00
0715994936	0	6	0	0	0	0	4200.00

Figure 13 – All Customer Report

❖ Item Reports

1. Best selling categories sorted by quantity

- The user can press the Categorized By QTY Button in Item Reports to access this option.
- In this option, the sizes of the t-shirts should be displayed in descending order by quantity.
- The QTY displayed is the total quantity sold of each specific size.
- The Total Amount displayed is the total amount of all sold t-shirts of that specific size.

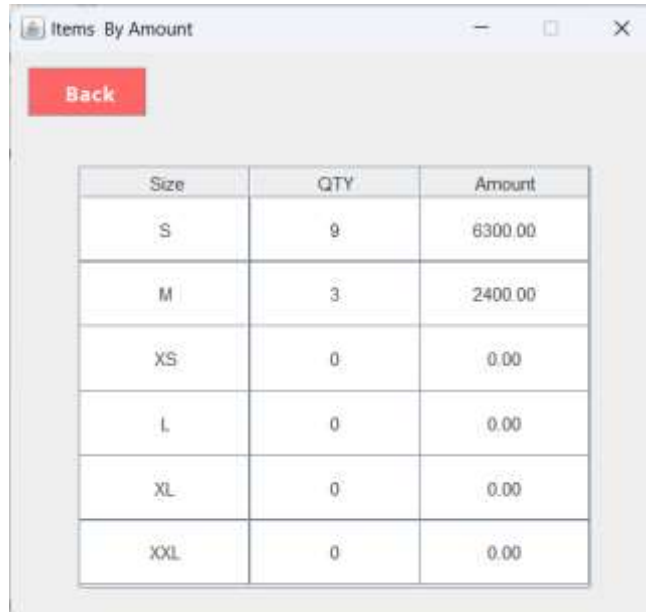


Size	QTY	Amount
S	9	6300.00
M	3	2400.00
XS	0	0.00
L	0	0.00
XL	0	0.00
XXL	0	0.00

Figure 17 – Item Report Sorted by QTY

2. Best selling items sorted by amount

- The user can press the Categorized By Amount Button in Item Reports to access this option.
- In this option, the sizes of the t-shirts should be displayed in the descending order by total amount.
- The QTY displayed is the total quantity sold of each specific size.
- The Total Amount displayed is the total amount of all sold t-shirts of that specific size.



Items By Amount

Back

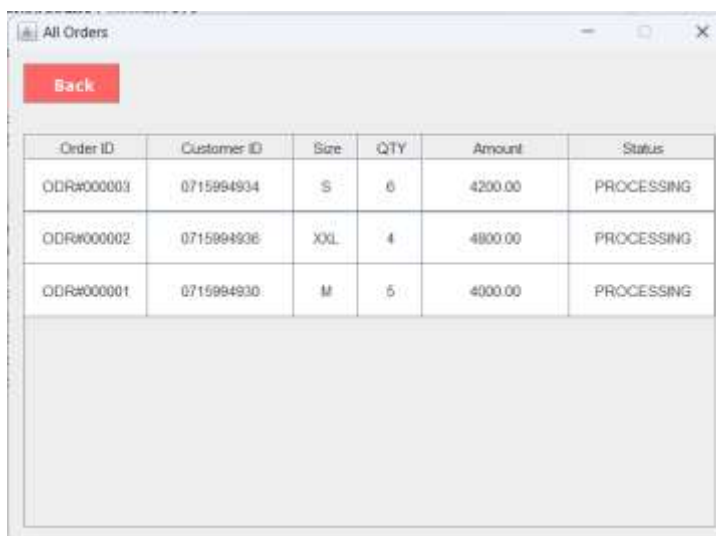
Size	QTY	Amount
S	9	6300.00
M	3	2400.00
XS	0	0.00
L	0	0.00
XL	0	0.00
XXL	0	0.00

Figure 15 – Item Report Sorted by Amount

Order Reports

1. All Orders

- The user can press the All Orders Button under Order Reports to access this option.
- In this option, all the orders should be displayed. All orders should be displayed in the descending order by Order ID.



All Orders

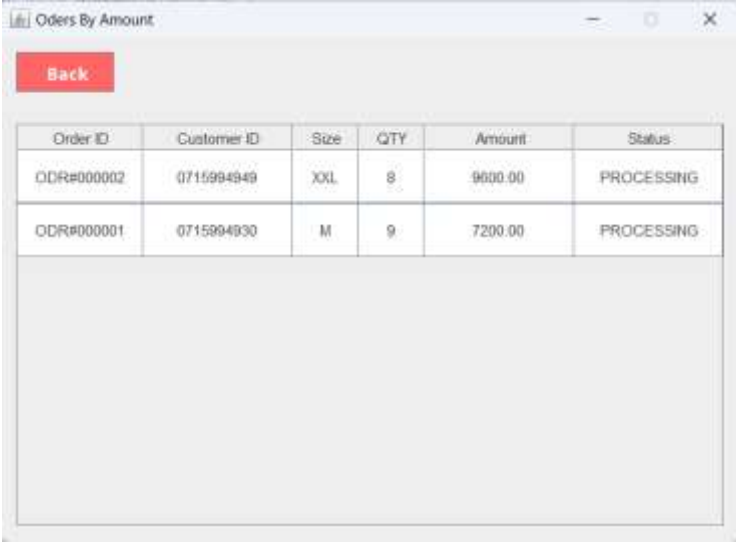
Back

Order ID	Customer ID	Size	QTY	Amount	Status
ODR#000003	0715994934	S	6	4200.00	PROCESSING
ODR#000002	0715994936	XXL	4	4800.00	PROCESSING
ODR#000001	0715994930	M	5	4000.00	PROCESSING

Figure 16 – All Orders

2. Order By Amount

- In this option, all the orders should be displayed. All orders should be displayed in the descending order by Amount.



The screenshot shows a window titled "Orders By Amount". It contains a red "Back" button at the top left. Below it is a table with the following data:

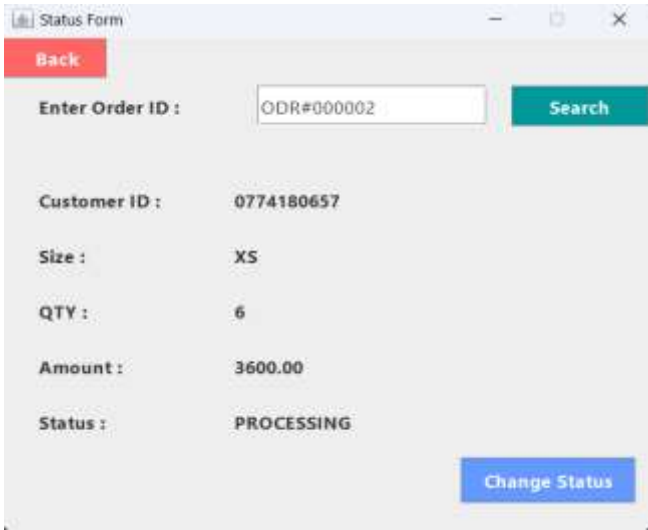
Order ID	Customer ID	Size	QTY	Amount	Status
ODR#000002	0715994949	XXL	8	9600.00	PROCESSING
ODR#000001	0715994930	M	9	7200.00	PROCESSING

Below the table is a large empty rectangular area.

Figure 17 – Order Report by Amount

05. Change Order Status

Once the user presses the status button, the status form page should be displayed. The user is required to enter the Order ID. The option will display the order details. The user can return back to the main menu by pressing the back button.



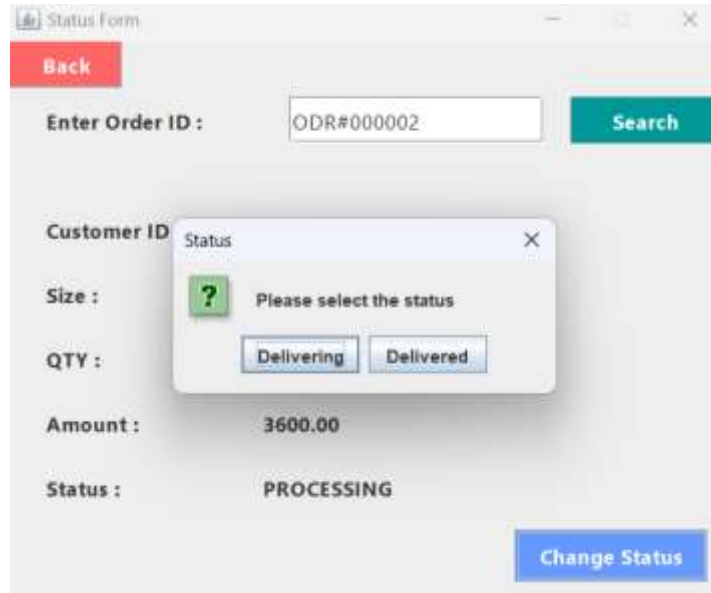
The screenshot shows a window titled "Status Form". It contains a red "Back" button at the top left. Below it is a form with the following fields and values:

- Enter Order ID :
- Customer ID : 0774180657
- Size : XS
- QTY : 6
- Amount : 3600.00
- Status : PROCESSING

At the bottom right, there is a blue "Change Status" button.

Figure 18 – Order Status Processing

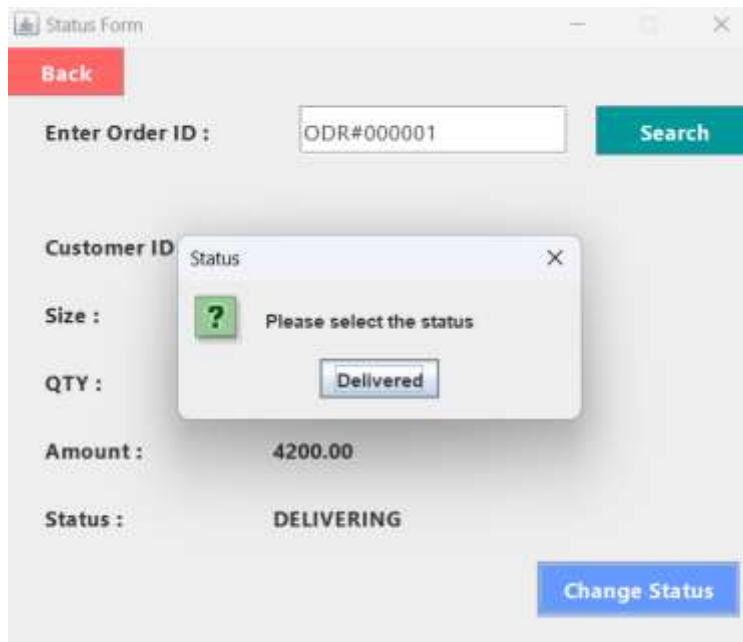
The user should press the “Change Status button” to change the order status. If the user proceeds, a pop-up message will be displayed to the user, the order status will change according to the current status. No change will be made if the current status is “delivered”. Refer the demo video for more information.



The screenshot shows a web application window titled "Status Form". It contains a "Back" button, a text input for "Enter Order ID" with the value "ODR#000002", and a "Search" button. Below this, there are fields for "Customer ID", "Size", "QTY", "Amount" (3600.00), and "Status" (PROCESSING). A "Change Status" button is at the bottom right. A modal dialog box is open in the center, titled "Status", with a green question mark icon and the text "Please select the status". It has two buttons: "Delivering" and "Delivered".

Figure 19 – Change Order Status

Once the Order status changes to “delivering” the details should be updated, and if the user desires to further change the status to “delivered” it should be displayed as follows.



The screenshot shows the same "Status Form" window, but with the "Enter Order ID" field containing "ODR#000001". The "Status" field now displays "DELIVERING" and the "Amount" is 4200.00. The modal dialog box is still open, showing the "Please select the status" prompt with the "Delivered" button highlighted.

Figure 20 – Change Order Status to Delivered

06. Delete Order

With this option, an order can be deleted from the system. First, the user needs to enter the order ID. The order ID should be validated. otherwise, it should be handled like previously.

If the user has entered a valid order ID but that order still hasn't been added to the system, then it should be notified.

The can press the delete button, to remove the order from the system. Before deleting the contact, a pop-up message for confirmation should be taken from the user to delete this order.

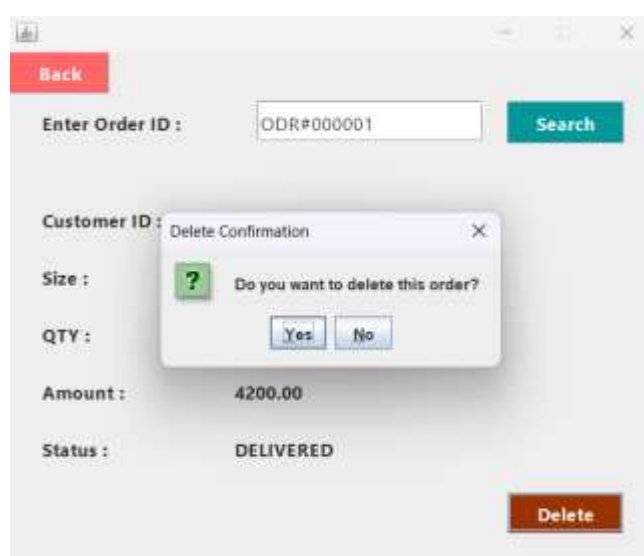


Figure 21 – Delete Order confirmation

If the user confirms, the order should be successfully deleted.

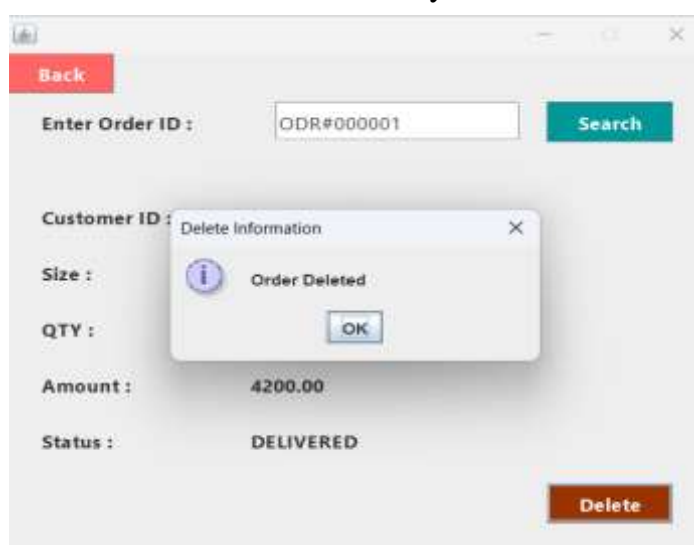


Figure 22 – Delete notification

