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UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING
Faculty of Engineering

SECJ2154 (OBJECT-ORIENTED PROGRAMMING)
SECTION 03 - DR ZURAINI

PROJECT REPORT

Mini Project Title:

MyPizza Food Ordering System

GROUP 5

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INTRODUCTION

The modern customer craves convenience and efficiency. Nowadays, people are increasingly turning to online and mobile solutions to streamline their daily routines. This trend extends to the food industry, where traditional phone and paper-based ordering systems are failing to meet these demands.

Restaurants face challenges in keeping up with customer demand while managing order accuracy and efficiency. Manual processes can lead to errors, delays, and frustrated customers. Additionally, static menus and limited ordering options restrict customer experience.

Traditionally, ordering food at a restaurant involves a manual process where customers interact with waitstaff to place orders. This conventional method, while effective, has its limitations, particularly in terms of speed, accuracy, and resource management. Long wait times, miscommunication, and order errors can frustrate customers and strain restaurant operations.

This food ordering system offers a modern solution to these challenges, providing a convenient and efficient way for customers to order food. The system will leverage modern technologies such as software automation, file management, and object-oriented programming concepts to create a seamless and efficient ordering experience for both customers and restaurant staff. Customers will benefit from increased convenience by ordering anytime, anywhere, through a user-friendly interface. Restaurants will experience improved order accuracy and efficiency through streamlined order processing and reduced wait times.

PROBLEM STATEMENT

The current food ordering system, reliant on manual order taking, is susceptible to human error. This can lead to inaccurate orders being placed, impacting customer satisfaction and increasing wasted food.

Furthermore, maintaining records of orders, customer details, and payment transactions manually is cumbersome and vulnerable to loss or damage. This significantly hinders the restaurant's ability to track valuable data such as order history and customer preferences, limiting its capacity to personalize services and deliver targeted promotions.

Our proposed system addresses these shortcomings by offering functionalities that empower both customers and restaurants.

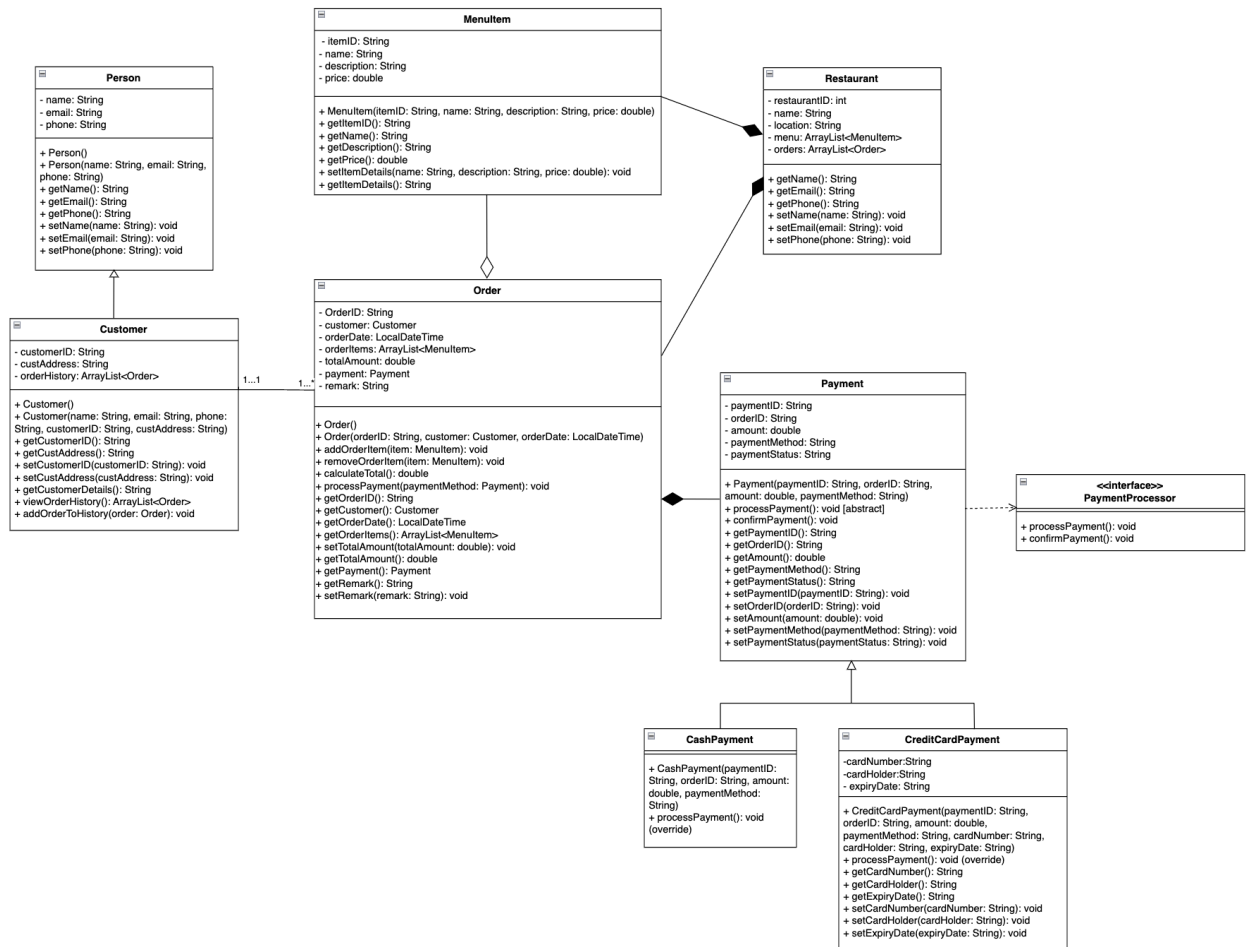
- Customers can place orders directly through a user-friendly digital interface, minimizing the risk of errors and streamlining the order-taking process.
- The system will securely store customer details and order history, enabling the restaurant to offer personalized services and targeted promotions, ultimately enhancing the overall customer experience.

OBJECTIVES

The objective of this food ordering system is to enhance the efficiency, accuracy, and convenience of the food ordering process for both customers and restaurant staff. The system aims to address the limitations of traditional manual order-taking methods by utilizing software technologies and programming concepts. The objectives include:

- Improve order accuracy by ensuring customer orders are recorded accurately.
- Enhance customer convenience.
- Increase efficiency for the order process that is able to reduce waiting time and improve restaurant operations.
- Effective data management which can store customer details, order history, and menu in external files to ensure data accessibility.
- Provide restaurant staff with tools to manage orders, track inventory, and generate reports efficiently.
- Design a user-friendly order system and accessible to users.

PROJECT DESIGN



3.1 Class Diagram of Pizza Food Ordering System

Class	Person In Charge	Responsibilities
'Person'	Shuhd Nashwan	Implement abstract classes with common attributes and methods.
'Customer'	Mok Yun Yi	Handle customer-specific details and inheritance from Person.
'MenuItem'	Mok Yun Yi	Implement attributes and methods related to menu items.
'Order'	Denies Wong Ke Ying	Handle order processing, including adding/removing items and calculating totals.

'Payment'	Denies Wong Ke Ying	Implement the abstract Payment class and its subclasses.
'CreditCardPayment'	Amirah Syazwani	Implement payment processing specific to credit cards.
'CashPayment'	Amirah Syazwani	Implement payment processing specific to cash payments.
'Restaurant'	Shuhd Nashwan	Oversee restaurant operations, manage menu items, and view orders.

3.2 Table of Person In Charge for each Class

PROJECT OUTPUT (SCREEN SHOTS)

Role: Customer

1. Press button '1' to log in as a customer and fill in the customer details. Next, place the order by pressing button '1'.

```

Welcome to MyPizza!
1. Customer
2. Restaurant
3. Exit
Enter your choice: 1

Enter your customer ID: 01

Customer not found. Please enter your details.
Enter your name: Amirah
Enter your email: asyazwani@gmail.com
Enter your phone: 01157911722
Enter your address: Taman Melati, Jasin, Melaka

Customer Menu:
1. Place Order
2. View Order History
3. Exit
Enter your choice: 1

```

2. The system then will show all menu details. Customers can add item to order by pressing button '1' and by filling in the item ID.

```
Menu:
ID: pizza001
Name: Hawaiian Pizza
Description: A delightful mix of sweet and savory flavors, this pizza is topped with tomato sauce,
cheese, ham, and pineapple. The tropical taste of pineapple adds a burst of sweetness to complement
the salty ham.
Price: $23.0
ID: pizza002
Name: Island Supreme Pizza
Description: This pizza brings a taste of the island to your plate with a unique combination of fla
vors. Its topped with Thousand Island sauce, crabstick, tuna, pineapple, onion, and a generous amou
nt of cheese.
Price: $25.0
ID: pizza003
Name: Pepperoni Pizza
Description: This pizza is topped with a generous amount of pepperoni slices and mozzarella cheese,
baked to perfection on a traditional crust. Its a popular choice among many.
Price: $26.0
ID: soup001
ID: soup001
Name: Creamy Mushroom Soup
Description: A rich and creamy soup made with fresh mushrooms, onions, garlic, and a blend of herbs
. Its a comforting and hearty choice for soup lovers.
Price: $6.0

1. Add item to order
2. Remove item from order
3. Complete order
Enter your choice: 1

Enter item ID: pizza001
Item added to order.
```


3. The customer adds another item to order.

```
Menu:
ID: pizza001
Name: Hawaiian Pizza
Description: A delightful mix of sweet and savory flavors, this pizza is topped with tomato sauce,
cheese, ham, and pineapple. The tropical taste of pineapple adds a burst of sweetness to complement
the salty ham.
Price: $23.0
ID: pizza002
Name: Island Supreme Pizza
Description: This pizza brings a taste of the island to your plate with a unique combination of fla
vors. Its topped with Thousand Island sauce, crabstick, tuna, pineapple, onion, and a generous amou
nt of cheese.
Price: $25.0
ID: pizza003
Name: Pepperoni Pizza
Description: This pizza is topped with a generous amount of pepperoni slices and mozzarella cheese,
baked to perfection on a traditional crust. Its a popular choice among many.
Price: $26.0
ID: soup001
Name: Creamy Mushroom Soup
Description: A rich and creamy soup made with fresh mushrooms, onions, garlic, and a blend of herbs
. Its a comforting and hearty choice for soup lovers.
Price: $6.0

1. Add item to order
2. Remove item from order
3. Complete order
Enter your choice: 1

Enter item ID: soup001
Item added to order.
```

4. Items can be removed from order by pressing button '2' .

```
Menu:
ID: pizza001
Name: Hawaiian Pizza
Description: A delightful mix of sweet and savory flavors, this pizza is topped with tomato sauce,
cheese, ham, and pineapple. The tropical taste of pineapple adds a burst of sweetness to complement
the salty ham.
Price: $23.0
ID: pizza002
Name: Island Supreme Pizza
Description: This pizza brings a taste of the island to your plate with a unique combination of fla
vors. Its topped with Thousand Island sauce, crabstick, tuna, pineapple, onion, and a generous amou
nt of cheese.
Price: $25.0
ID: pizza003
Name: Pepperoni Pizza
Description: This pizza is topped with a generous amount of pepperoni slices and mozzarella cheese,
baked to perfection on a traditional crust. Its a popular choice among many.
Price: $26.0
ID: soup001
Name: Creamy Mushroom Soup
Description: A rich and creamy soup made with fresh mushrooms, onions, garlic, and a blend of herbs
. Its a comforting and hearty choice for soup lovers.
Price: $6.0

1. Add item to order
2. Remove item from order
3. Complete order
Enter your choice: 2

Enter item ID: soup001
Item removed from order.
```

5. Customers can complete the order by pressing button '3'. Here, a new customer will receive a 10% discount while old customers can get a free mushroom soup. The total amount will be shown and we can put a remark for our order.

```
Menu:
ID: pizza001
Name: Hawaiian Pizza
Description: A delightful mix of sweet and savory flavors, this pizza is topped with tomato sauce,
cheese, ham, and pineapple. The tropical taste of pineapple adds a burst of sweetness to complement
the salty ham.
Price: $23.0
ID: pizza002
Name: Island Supreme Pizza
Description: This pizza brings a taste of the island to your plate with a unique combination of fla
vors. Its topped with Thousand Island sauce, crabstick, tuna, pineapple, onion, and a generous amou
nt of cheese.
Price: $25.0
ID: pizza003
Name: Pepperoni Pizza
Description: This pizza is topped with a generous amount of pepperoni slices and mozzarella cheese,
baked to perfection on a traditional crust. Its a popular choice among many.
Price: $26.0
ID: soup001
Name: Creamy Mushroom Soup
Description: A rich and creamy soup made with fresh mushrooms, onions, garlic, and a blend of herbs
. Its a comforting and hearty choice for soup lovers.
Price: $6.0

1. Add item to order
2. Remove item from order
3. Complete order
Enter your choice: 3
10% discount applied.
Total Amount: $20.7
Enter any remark for your order: leave in front of the door
```

6. Next, customers can choose whether to pay using credit card or cash. If the customer chooses method '1', the system will ask for card details for the customer to fill in.

```
Payment Methods:
1. Credit Card
2. Cash
Enter your choice: 1

Enter card number: 4274 2834 9827
Enter card holder name: Amirah
Enter expiry date: 10/28
Credit card payment processed for order: 9f25de33-e415-4234-b99d-5f921c8d79c3
Order completed successfully.
```

7. Scenario if customers choose to pay by cash.

```
Payment Methods:
1. Credit Card
2. Cash
Enter your choice: 2

Cash payment processed for order: f8c3bcb4-d62a-45b7-8236-c72798a03375
Order completed successfully.
```

8. Customers also can press '2' to view their order history. The system will display all details about the customer order history.

```
Customer Menu:
1. Place Order
2. View Order History
3. Exit
Enter your choice: 2

Order History:

Order ID: 9f25de33-e415-4234-b99d-5f921c8d79c3
Order Date: 2024-06-24T02:31:59.086696400
Items:
ID: pizza001
Name: Hawaiian Pizza
Description: A delightful mix of sweet and savory flavors, this pizza is topped with tomato sauce,
cheese, ham, and pineapple. The tropical taste of pineapple adds a burst of sweetness to complement
the salty ham.
Price: $23.0
Remark: leave in front of the door
Total Amount: $20.7
Payment Status: Confirmed
```

Role: Restaurant admin

1. Other than that, this system can log in as a restaurant or admin. Here we can add a new menu, remove, update and view orders.

```
Customer Menu:
1. Place Order
2. View Order History
3. Exit
Enter your choice: 3

Welcome to MyPizza!
1. Customer
2. Restaurant
3. Exit
Enter your choice: 2

Restaurant Menu:
1. Add Menu Item
2. Remove Menu Item
3. Update Menu Item
4. View Orders
5. Exit
Enter your choice: 1
```

2. If we press '1', the system will ask the admin to fill in the new item details.

```
Enter item ID: pizza004
Enter item name: Smoked Beef Pizza
Enter item description: The savory, smoky beef melds divinely into the soft, caramelized onions and
peppers and rich, crusty cheese in this carnivore-pleasing pizza.
Enter item price: 24
Menu item added successfully.
```

- Choice '2' for removing items by filling in the item ID.

```
Restaurant Menu:
1. Add Menu Item
2. Remove Menu Item
3. Update Menu Item
4. View Orders
5. Exit
Enter your choice: 2

Enter item ID to remove: pizza001
Menu item removed successfully.
```

- Choice '3' for updating existing menu items.

```
Restaurant Menu:
1. Add Menu Item
2. Remove Menu Item
3. Update Menu Item
4. View Orders
5. Exit
Enter your choice: 3

Enter item ID to update: soup001
Enter new name: Garlic Mushroom Soup
Enter new description: Thick and creamy with aromatic roasted garlic and the earthiness of thyme.
Enter new price: 7
Menu item updated successfully.
```

- Choice '4' for viewing existing orders.

```
Restaurant Menu:
1. Add Menu Item
2. Remove Menu Item
3. Update Menu Item
4. View Orders
5. Exit
Enter your choice: 4

Current Orders:

Order ID: 88b4a470-42a6-4a12-97c8-ae78121ef533
Customer:
Name: wong
Email: keying0516@gmail.com
Phone: 01139762466
Customer ID: cust001
Address: 207,MA4
Order Date: 2024-06-10T21:52:08.656011900
Items:
ID: pizza002
Name: Island Supreme Pizza
Description: This pizza brings a taste of the island to your plate with a unique combination of flavors. Its topped w
ith Thousand Island sauce, crabstick, tuna, pineapple, onion, and a generous amount of cheese.
Price: $25.0
Remark: extra cheese, no onion
Total Amount: $22.5
Payment Status: Confirmed
```

```
Order ID: d2fc36e0-c7ab-487c-abc4-b5ffdfc29831
Customer:
Name: wong
Email: keying0516@gmail.com
Phone: 01139762466
Customer ID: cust001
Address: 207,MA4
Order Date: 2024-06-10T21:53:44.647151500
Items:
ID: soup001
Name: Creamy Mushroom Soup
Description: A rich and creamy soup made with fresh mushrooms, onions, garlic, and a blend of herbs. Its a comfortin
g and hearty choice for soup lovers.
Price: $6.0
ID: pizza001
Name: Hawaiian Pizza
Description: A delightful mix of sweet and savory flavors, this pizza is topped with tomato sauce, cheese, ham, and
pineapple. The tropical taste of pineapple adds a burst of sweetness to complement the salty ham.
Price: $23.0
Remark: no
Total Amount: $23.0
Payment Status: Confirmed
```

6. Exit the program.

```
Restaurant Menu:
1. Add Menu Item
2. Remove Menu Item
3. Update Menu Item
4. View Orders
5. Exit
Enter your choice: 5

Welcome to MyPizza!
1. Customer
2. Restaurant
3. Exit
Enter your choice: 3
Goodbye!
```

CONCLUSION

In conclusion, this system offers an automated ordering process for food that is advantageous to customers and restaurant employees combined. Restaurant employees utilize this system to handle orders through a digital platform where they can log different tasks including managing the menu, managing orders, and managing client information. In addition to the computerized system, there will be no loss of order records or customer data, problems that often occur with non-computerized systems.

To further enhance customer experience, the system includes special functionalities such as offering a 10% discount for new customers and a free mushroom soup for returning customers.

All of these aspects of the system will help restaurant employees handle the food ordering process more effectively than they would if they used manual order-taking procedures. By simplifying order processing and reducing wait times, allowing customers to place orders whenever and wherever they choose, and reducing human mistakes, the technology enhances overall operating efficiency and improves consumer comfort. Because customer information and order history are securely preserved, the restaurant can further enhance the customer experience by offering customized discounts and personalized services.

APPENDICES (JAVA FILES)

<https://drive.google.com/drive/folders/1nb80uGIWuc0bsCMyUFPfi5HMsPIxM4Of?usp=sharing>