Project Name - Pizza

Intro to Software Engineering Section 01

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Panic Party Pizzeria

Conceptual System Design

Report format

Mom and Pop’s Pizzeria

Report Date: November 8, 2025 Generated: 11:59 PM by Manager Will Donovan

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1. Sales Summary

- Gross Sales: $2,450.50
- Discounts Applied: -$150.25
- Net Sales (Gross - Discounts): $2,300.25
- Taxes Collected (8%): $184.02
- Total Revenue (Net Sales + Tax): $2,484.27

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2. Payment Method Breakdown

- Cash: $480.27
- Credit Card (Visa/MC): $1,750.00
- Credit Card (Amex): $204.00
- Gift Card: $50.00
- Total Collected: $2,484.27

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3. Order & Service Metrics

- Total Orders: 112
- Average Order Value (Net Sales / Orders): $20.54
- Average Order Turnaround (Order to Complete): 14.5 minutes

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4. Top Sales by Category

1. Pizza: $1,550.00 (85 units)
2. Drinks: $450.25 (130 units)
3. Appetizers: $300.00 (50 units)

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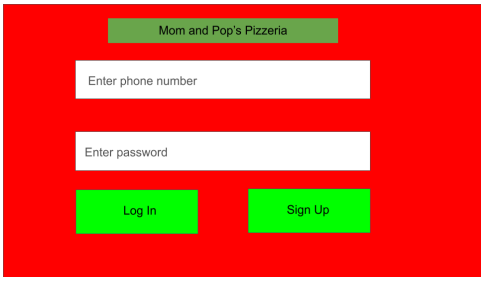
5. Inventory Alerts (Low Stock)

- Item: Pepperoni (Case)
    - Remaining: 2
    - Par Level: 5
- Item: 12" Pizza Boxes (Sleeve)
    - Remaining: 1
    - Par Level: 4

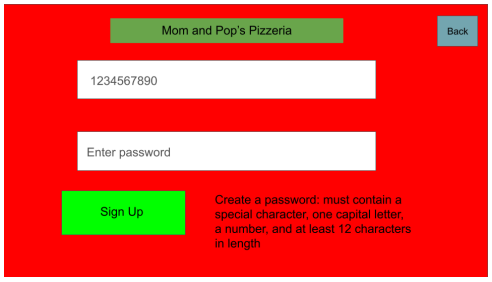
Screen Layouts

Customer View

Once a user has opened the website, the screen to the right will be seen. This first screen is dedicated for any user to log in using their phone number and the password that they set.

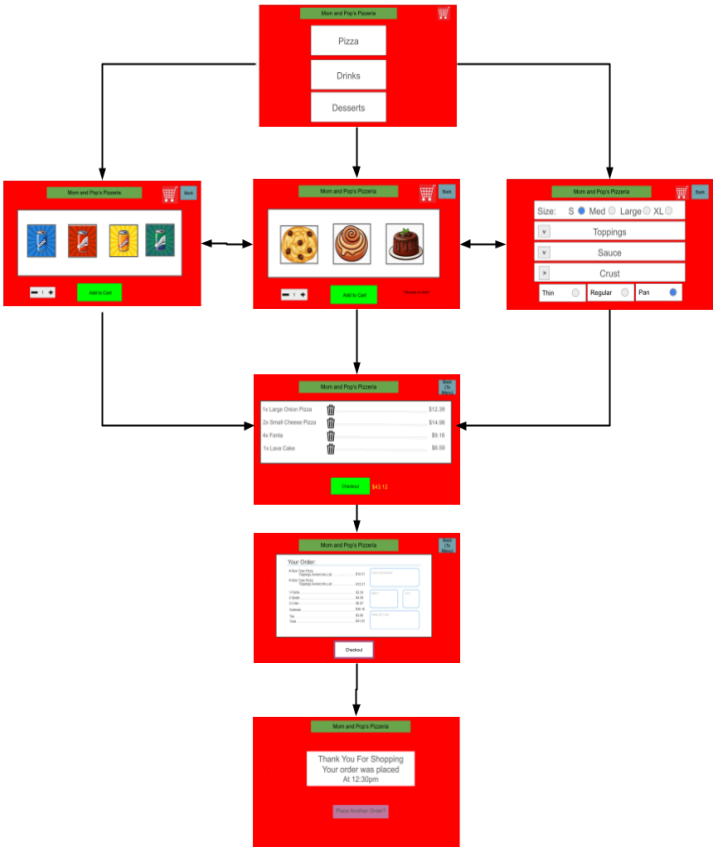


If the user has to create an account they will click on the sign up button. Then they are taken to the sign up page with instructions on the information necessary to make an account.



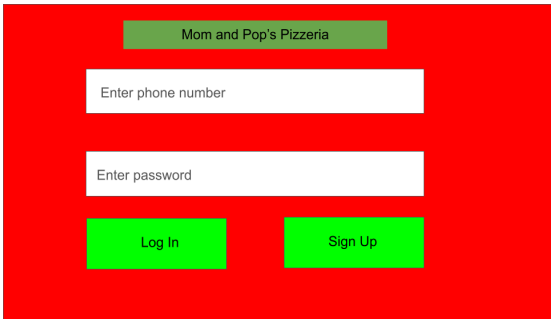
In the case of a customer, they are taken to the menu screen. From here a customer can view the items available at Mom and Pop's Pizzeria and order them.

The diagram below shows the flow that a customer may go through. First a user will add an item to their cart. When the user is satisfied with their selection they can interact with the shopping cart icon to review the items they wish to purchase. The user is then taken to a screen to input payment information. Finally the user is given the time the order was placed and the option to create a new order. The customer always has the option to a higher level in the diagram with the back button.

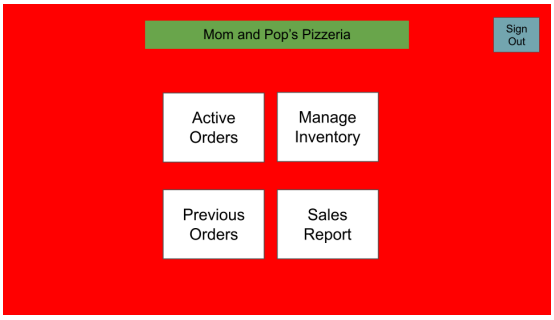


Manager View

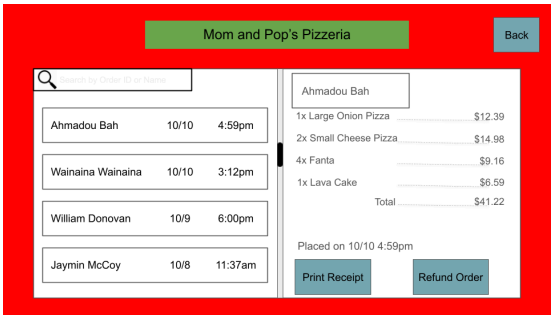
Managers will see the same login/sign up page as normal customers. Once they input the appropriate phone number and password they are taken to the main screen page.



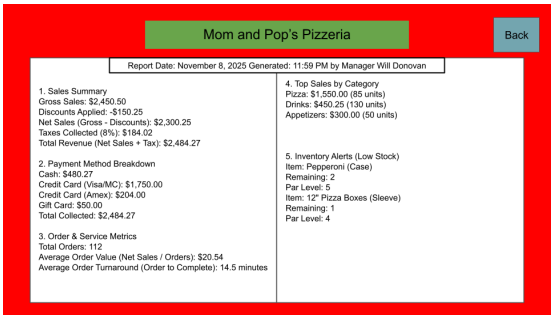
From this main page a manager has the ability to view orders that are ongoing, see orders from previous days or weeks, generate a sales report, or manage shop inventory. All pages below are able to come back to this main menu



The pages that show both active orders and completed orders show the receipts of all orders. The information detailed in the receipts include the contents of the order, when the order was placed, the name and order id of the receipt, and the amount the customer paid. Managers are also given the option to print a copy of the receipt or refund the entire order.



The sales report button provides a summary of sales, payment methods used, the total number of orders, and a breakdown of sales by item. From this screen a manager is able to provide a range for which days are taken account into the summary.

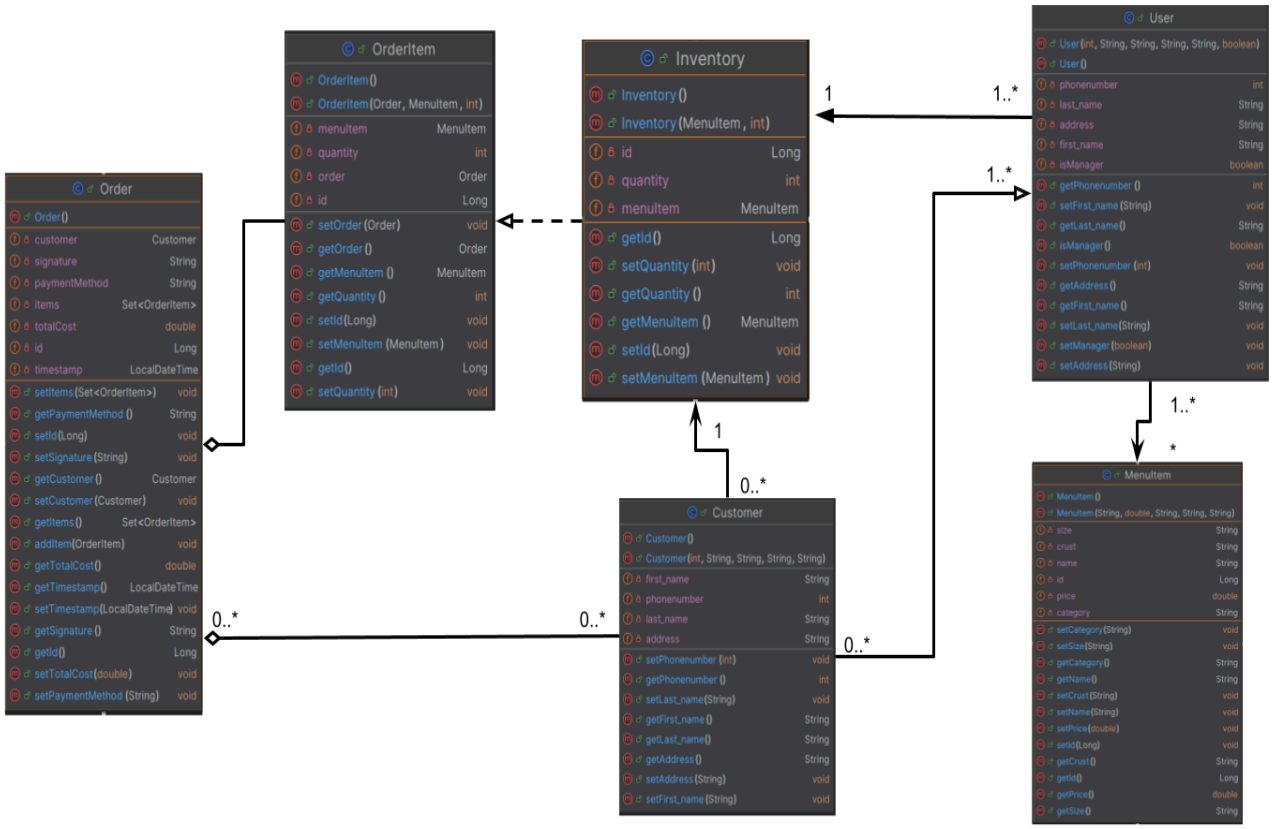


Technical Design

Detailed Class Diagram


=public


=private



Supporting Text Specification

Class: User

User(): The default constructor to create a User object.

User(int, String, String, String, String, boolean): A parameterized constructor to create a User object with initial values.

getFirstName() / setFirstName(String): Gets or sets the user's first name.

getLastName() / setLastName(String): Gets or sets the user's last name.

getPhonenumber() / setPhonenumber(int): Gets or sets the user's phone number.

getAddress() / setAddress(String): Gets or sets the user's address.

setIsManager(boolean): Sets the manager status for the user.

Class: Customer

Relationships: Inherits from: User. Has a relationship with: Order (one customer can have many orders).

Customer(): The default constructor to create a Customer object.

Customer(int, String, String, String, String): A parameterized constructor to create a Customer object.

getId() / setId(Long): Gets or sets the customer's unique ID.

getPaymentMethod() / setPaymentMethod(String): Gets or sets the customer's payment method.

Class: Order

Relationships: Belongs to: One Customer. Contains: One or more OrderItem objects.

Order(): The default constructor to create an Order object.

getId() / setId(Long): Gets or sets the order's unique ID.

getCustomer() / setCustomer(Customer): Gets or sets the associated customer.

getItems() / setItems(Set<OrderItem>): Gets or sets the collection of order items.
addItem(OrderItem): Adds a single OrderItem to the order's item set.

getTotalCost() / setTotalCost(double): Gets or sets the total cost of the order.

getSignature() / setSignature(String): Gets or sets the order signature.

getTimestamp() / setTimestamp(LocalDateTime): Gets or sets the order timestamp.

Class: MenuItem

Relationships: Can be part of: Many OrderItems. Tracked in: Inventory (one-to-one relationship).

MenuItem(): Default constructor.

MenuItem(String, double, String, String, String): A parameterized constructor to create a MenuItem.

getName() / setName(String): Gets or sets the item's name.

getPrice() / setPrice(double): Gets or sets the item's price.

getCrust() / setCrust(String): Gets or sets the item's crust type.

getSize() / setSize(String): Gets or sets the item's size.

getCategory() / setCategory(String): Gets or sets the item's category.

Class: OrderItem

Relationships: Part of: One Order. Refers to: One MenuItem.

OrderItem(): The default constructor.

OrderItem(Order, MenuItem, int): A parameterized constructor to create an OrderItem.

getOrder() / setOrder(Order): Gets or sets the parent order.

getMenuItem() / setMenuItem(MenuItem): Gets or sets the associated menu item.

getQuantity() / setQuantity(int): Gets or sets the quantity for this item.

Class: Inventory

Relationships: Corresponds to: One MenuItem (each inventory record is for a unique menu item).

Inventory(): The default constructor.

Inventory(MenuItem, int): A parameterized constructor to create an inventory record.

getMenuItem() / setMenuItem(MenuItem): Gets or sets the associated menu item.

getQuantity() / setQuantity(int): Gets or sets the available quantity.

Database Table Descriptions

Customer Table Description:

Attributes	Data Type	Attribute Type	Dependency
Name	String	Compound	-
Phone Number	Int	Simple	Primary Key
Address	String	Compound	-
Subdivision	String	Compound	-
Payment Preference	String	Compound	-

The Customer table stores details about each customer such as their name, phone number, address, subdivision, and payment preferences. Each customer is uniquely identified by a CustomerID (or phone number). This table connects to the Order and Payment tables through one-to-many relationships, meaning one customer can make multiple orders and payments.

Order Table Description:

Attributes	Data Type	Attribute Type	Dependency
Customer	String	Compound	Foreign Key
Date/Time	String	Compound	-
Pickup?	Boolean	Simple	-
Cost	Int	Simple	-
Completed?	Boolean	Simple	-
Order ID	Long	Compound	Primary Key

The Order table records each order made by a customer, including information such as the order date and time, type (pickup or delivery), total cost, status, and signature if paid by card. Each order is linked to one customer through a foreign key and has a one-to-one relationship with the Payment table. It also connects to multiple OrderItems, representing the individual items within the order.

OrderItem Table Description:

The OrderItem table stores information about individual items within each order, including the quantity and subtotal for each menu item. Each OrderItem is connected to one Order and one MenuItem through foreign keys. This allows the system to track exactly what items were included in each customer's order.

MenuItem Table Description:

Attributes	Data Type	Attribute Type	Dependency
Item Name	String	Compound	-
Price	Double	Compound	-
Crust Type	String	Compound	-
Size	String	Compound	-
Category	String	Compound	-

The MenuItem table contains information about all the items offered on the restaurant's menu, such as their name, category (e.g., pizza or beverage), size, crust type, and price. Each menu item can appear in many OrderItems, allowing the system to link products to multiple orders without data duplication.

Payment Table Description:

Attributes	Data Type	Attribute Type	Dependency
Type	String	Compound	-
Amount	Double	Compound	-
Date	Long	Compound	-
Customer	Object	Compound	Foreign Key
Order ID	Long	Compound	Primary Key

The Payment table stores all payment transactions, including the payment type (cash, card, or pay at store), amount, date, and card type if applicable. Each payment is linked to one specific Order and Customer. This ensures accurate record-keeping of how each order was paid and who made the payment.

Employee Table Description:

Attributes	Data Type	Attribute Type	Dependency
Name	String	Compound	-
Manager?	Boolean	Simple	-
Work TImes	Long	Compound	-
Phone Number	Int	Simple	Primary Key

The Employee table contains information about each employee, including their name, role (employee or manager), and work times such as clock-in and clock-out. Managers can oversee multiple employees, and employees may be linked to the orders they handle. This helps track employee responsibilities and management hierarchy.

Inventory Table Description:

Attributes	Data Type	Attribute Type	Dependency
Item Name	String	Compound	Primary Key
Quantity	Int	Simple	-
Last Restock	Long	Compound	-

The Inventory table tracks all items kept in stock, including the item name, current quantity, and the date of the last restock. It can optionally be linked to a manager who is responsible for maintaining the inventory. This table helps ensure that the restaurant always has the necessary ingredients and supplies available.

Technical Support Specification

Training Approach

- Once the product is set to be integrated, Panic Party Pizzeria will provide members of its staff to Mom and Pop's Pizzeria for training. This training will include how to access sales screens, view current and past orders, maintain inventory, and manage employee information.

Training Materials

- After training, Mom and Pop's Pizzeria will be provided with a video tutorial on the functions mentioned above. This video can be distributed to both managers and employees.

Installation Support

- A Panic Party Pizzeria employee will be present for initial installation. For subsequent installations, Panic Party Pizzeria will provide a set of instructions for users to make such changes.

Troubleshooting

- For updates and maintenance, these changes to the Mom and Pop's website will be rolled out at 6am on Monday or at the request of Mom and Pop's Pizzeria. The Panic Party Pizzeria help desk will be available on the line (123)456-7890 from 9am to 8pm to provide any further support.