

# Assignment 3 Readme

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Classes created:-

1. **Admin class**: It includes all the methods and functionalities that the admin can handle and perform. When the program is run, for an admin to access its functionalities it has to login with a fixed admin password(**123**).
2. **Customer class**: It includes all the methods and functionalities that the customer can perform. A VIP customer has to enter a fixed VIP code(**vip123**) in order to access the VIP benefits. A customer can only cancel their order that has been paid for while completing the checkout process. They can add special requests, if any, during the checkout process only. In the 'checkout' method, UUID(Universally Unique Identifier, which is a 128-bit value that is almost guaranteed to be unique across space and time. Java provides UUID.randomUUID() as a method to create a random UUID.) is used to generate a unique order ID for each order.
3. **FoodItem class**: It keeps track of the details of each food item, like its name, category, price, availability and also an Array List of the reviews it has gotten from customers who ordered it.
4. **Order class**: It keeps track of all the individual orders of the customers. It also consists of an enum of different types of status of an order. There are 6 possible statuses, Received, Preparing, Out\_For\_Delivery, Delivered, Denied, Refunded.
5. **Main class**: It calls and implements all the methods and functionalities in the expected way.

I have used the following collections:-

- In **Admin** class:-

- **HashMap** to store menu, with key as the name of the item mapped to a FoodItem object as the value with the details of the item(name, category, price, availability).
- **Priority queue** to store pending orders which takes an object of the Order class which represents the individual orders of the customers( when "viewPendingOrders" method of Admin class is called, first the VIP orders are printed, as they are given priority first, followed by the non-VIP orders).
- **Array List** is used to store the history/record of all completed orders, which is used to generate daily sales report.

- In **Customer** class:-

- **HashMap** is used to store the items added by the customer in their cart. It has an object of the FoodItem class as the key and the quantity, ordered by the customer, as the mapped value.

- In **FoodItem** class:-

- **Array List** to store the reviews of the respective food item added by customers.

- In **Order** class:-

- **Array List** to store all the items a customer has ordered in their order.

- In **Main** class:-

- **Hashmap** is used to store the customers who have ordered so far and to keep a record of them. Customer name(key) is mapped to an object of the Customer class.

**Bonus** functionalities implemented:-

- Orders are handled in the order they were received, ensuring fair processing.
- Order Priority: Orders placed by VIP customers are given priority over regular orders, ensuring VIP orders are processed first when multiple orders are pending.
- Customer types(regular and VIP) logic is handled.
- Item reviews(provide review and view reviews) logic is implemented in the Customer class.
- When an item is removed, the status of all pending orders containing that item will be updated to 'denied'.