

# DS604: INTRODUCTION TO DATA MANAGEMENT

DHRUV JAIN – 202418020 – 7984940845  
NAIR ANUJIT MOHANKUMAR – 202418036  
NAMAN GANDHI – 202418038  
JITH PHILIPOSE XAVIER – 202418022  
KUMAR SANSKAR - 202418027

GROUP- 01

## DESCRIPTION SCENARIO

# Instant Grocery and Essentials Delivery Database Management System

**Objective – Design and implement a database system for an online grocery and essentials delivery service to manage and track records of various details (orders, customer information, delivery details, warehouse and other details).**

### **Introduction:**

A Grocery and Essentials delivery service is provided by third-party platforms that allow customers to order groceries online from their homes. This service has been on the rise, especially since the pandemic struck, and it has since become a very profitable business model. In India, there are numerous grocery and essentials delivery apps, but Swiggy Instamart, Blinkit and Zepto have predominantly shared the market.

There are lots of advantages to a grocery and essentials delivery service. Users get a wider choice of all the available online products at a very reasonable cost, and that, too, is delivered to their homes. It saves time and costs for the users. People of different states/regions can order specialities from other states.

India is observing a tremendous increase in new start-ups, specifically in grocery and essentials delivery, to fulfil the aspirations of middle-class and lower-middle-class Indians who are staying in the Metros and Tier 3 cities. The new generation of urban India is looking for groceries at discounted prices sitting in their rooms as they do not want to compromise on their convenience. They want to have healthy food at an economical rate at their doorsteps.

### **Information about the database:**

We have roughly followed the structure of Swiggy Instamart to create our Database Management System.

- Application Users
  1. Surfers
  2. Customers
  3. Warehouses
  4. Delivery Agents
  5. HelpDesk Agents

## **Use Cases - Surfers**

These are the users who just land on the website/app and explore without ordering anything.

1. Search groceries and essentials based on one or more filters - Vegetables, Fruits, Dairy Products, Snacks, Availability, and Delivery time.

## **Use Cases - Customers**

These are the users who order groceries and essentials through the app.

1. Register/Login
2. Modify self-details like addresses, name etc.
3. Search groceries and essentials based on one or more filters - Vegetables, Fruits, Dairy Products, Snacks, Availability, and Delivery time.
4. Add to Cart, View Cart/Edit Cart/Delete Cart.
5. Place an Order and Track their Order.
6. Rate the order (Delivery Experience).
7. Save and Edit payment methods.
8. Report a complaint for a particular Order and request a refund.

## **Customer Registration**

Customers are required to log in every time they open the app/website. While registering, they need to provide the following details: Name, Email ID, Mobile Number, Date of Birth, and Address.

## **Modification of Details**

Customers can modify their details, such as adding a new address, Mobile Number, Email ID, and Date of Birth. They can also delete their account.

## **Search Items**

Customers can search for groceries and essentials based on various categories like vegetables, fruits, snacks and beverages, beauty and personal care, etc.

## **Maintain Cart**

Customers can modify their cart, add more items and remove items from the cart. They can also clear their cart.

### **Place an Order and Track their order.**

Customers conclude the purchase by placing the order. The customer specifies the address details and external payment method of their choice. The customer can also apply any discount on the order, if available.

Once the order is delivered, the order status is updated to 'Delivered'. Other types can be – 'Yet to be Confirmed', 'Order confirmed', 'On the way', or 'Cancelled'.

Orders can be cancelled only if they have not been confirmed by the warehouse. If the customer cancels the order after it has been confirmed, the necessary amount charged will be accounted for. In case an order is cancelled by the warehouse or the customer before the confirmation window ends, the refund status will be accounted for.

### **Ratings and Reviews**

Customers can rate the delivery person on a scale of 1-5 stars. They can also provide reviews about the delivery person. All these details are included in the database.

### **Save and Edit payment method.**

Customers can add new payment methods and edit existing payment methods.

## **Use Cases - Warehouses**

These are the users who have registered themselves on the app/website as warehouse admins and list items to be sold through the app.

1. Register/Login
2. Modify Details
3. Update the status of the items (Out of Stock, In Stock, No Delivery Partners nearby)
4. List items to be sold and manage their Inventory
5. Manage Orders (Confirm, Cancel)

### **Warehouse Registration**

Warehouses have to provide the following details while registering: Name, Address, Inventory and Location.

### **Modification of Details**

Details like address and other necessary information can be updated/modified.

### **Update Status**

Warehouses can dynamically update the status of an item to 'In Stock' or 'Out of Stock' depending on the inventory or availability of partners.

### **Display Products**

Warehouses list the names of items along with the price, short description(optional), and type(veg/non-veg).

### **Manage Orders**

Receive and Manage all the incoming Orders.

### **Use Cases - Delivery Agents.**

These are the users who have registered themselves on the app/website as delivery agents, and they deliver the orders to the customers from the warehouses.

1. Register/Login
2. Modify Details
3. Accept/Decline new orders based on availability and location
4. Update Delivery Status (Delivered, Not yet Delivered)
5. View Relevant Reports (Ratings, Reviews, Earnings, etc.)

### **Delivery Agent Registration**

Delivery Agents are required to log in whenever they open the app/website to access their profile. While registering, they need to provide the following details: Name, Email ID, Mobile Number, Location, and any valid Government-ID proof. They must provide details of their vehicle as well.

### **Modification of details**

Delivery Agents can modify their details like Mobile Number, Email ID, etc. They can also delete their account.

### **Accept New Orders**

Delivery Agents can accept/decline new orders based on their current location or order status.

### **Confirm Status**

Order status, based on delivery, can be updated. The types include - Cancelled, Picked Up, and Delivered.

### **View Relevant Reports (Ratings, Reviews, Earnings, etc.)**

Users can view relevant reports and details regarding their ratings by users, reviews, tips, earnings, etc.

## **Use Cases - HelpDesk Agents.**

These are the users who have registered themselves on the app/website as delivery agents, and they deliver the orders to the customers from the warehouses.

1. Register/Login
2. Modify Details
3. Handle complaints and queries made by customers

### **Help Agent Registration**

Help Agents are required to log in whenever they open the app/website to access their profile. While registering, they need to provide the following details: Name, Email ID, Mobile Number, and any valid Government ID proof.

### **Modification of details**

Help Agents can modify their details like Mobile Number, Email ID, etc. They can also delete their account.

### **Handling the Complaints and Queries**

A help desk agent can track the progress of tickets, assign work amongst each other, prioritise urgent issues, and offer speedy responses to customer queries.

### **List of Queries (Tentative):**

For General Customers

1. Search for items based on various parameters/filters
2. Details about customer's orders.
3. Display the items in their cart and update them.

For Warehouses

1. Daily/weekly/monthly/yearly sales
2. Manage Inventory of items
3. Cancelled orders by the customer
4. Most (Least) ordered/rated items on various combinations of the following:
  - Overall, weekly, monthly, yearly
  - City-wise, state-wise, category-wise, etc.
4. Customers who have given poor ratings

## 5. Average ratings

### For HelpDesk Agents

1. Total number of complaints received in a day/week/month/year
2. Total number of complaints handled in a day/week/month/year
3. Number of customers along with orders who have given ratings of 4 and more.
4. Daily/weekly/monthly revenue generated

### For Delivery partners

5. Total number of orders delivered in a day/week/month/year.
6. Details of tips received (through the app), if any
7. Number of orders cancelled by the customer/warehouse
8. Number of customers along with orders who have given ratings of 4 and more.
9. Daily/weekly/monthly revenue generated

### For Admin

1. Customers who have bought a gold membership and the price of their last membership.
2. Average time of delivery for a particular delivery person.
3. Customers who have not yet rated the app
4. Average customer ratings for a particular delivery partner
5. List of Refunds (with refund details) to be made.
6. Number of orders, deliveries, and total sales on a given day, month or period
7. Demand for a particular item
8. The margin earned on each order/margin-earning report

## **Conclusion**

In conclusion, the Groceries and Essentials Delivery Database Management System is a very important component for the success of a grocery delivery service. It is essential to capture all the relevant data and store them in a database to be able to cater to the needs of a huge population like India.

It can be difficult to cope with the challenges of managing orders, riders, and logistics altogether. The need for a dynamic and extensive grocery and essential delivery database management system helps overcome these challenges.