# **Database Project Document**

# **Batoor Delivery Services**

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Submitted to

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### **Abstract**

The web application is to be made for Batoor Delivery Services, Swabi. This will be used by their customers to place on-demand orders and do online shopping from the registered restaurants. The admin panel will have an option to approve/disapprove orders and get a display of the orders placed. They can also add/edit items & restaurants.

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#### **Problem Statement**

#### Title:

Automating the manual ordering system of Batoor Delivery Services, Swabi and making it easy-to-use for everyone through internet.

#### Description:

Currently, Batoor Delivery Services have a manual system of taking orders from their customers. Customers call them on their mobile number and place their order. They note all their details on paper and make a record of it. The customers do not have any visual of the restaurants and food they offer.

If the system gets digitalized and have a website. The user will have a visual of restaurants listing and the meals they offer. They will be able to select anything of their choice. They will also be able to make on-demand orders online without the process of making a phone call. The paper-based records will also be replaced with the data of each order stored in the database.

### Introduction (Overview)

The project is of a website for Batoor Delivery Services. The website will be used by the company to interact with their customers. The users can register/login to the website for using its services. The website will have a listing of restaurants that are registered with the company and the food they offer. The users will browse the items and add any of them to cart. The users will have an option to increase/decrease the quantity of items. The users upon completion his order will checkout and enter drop-off address. The users also can place on-demand orders for different products. They will input details about the product and pickup/drop-off locations and will place the order. The orders upon placement will be received by the admin for approval/disapproval. The admin will input delivery charges for online shopping and delivery charges plus products price for on-demand delivery prior to approval. Upon approval a text message will be sent to the customer's contact about his order approval. The admin panel upon login will have options to add/edit restaurants and items for display on the website.

The website will be developed using MERN Stack Technology. HTML, CSS, JavaScript, Bootstrap and React.js will be used in front-end. JavaScript, Node.js and Express.js will be used in the backend and NoSQL database MongoDB will be used in the database. For database design process we will use <a href="mailto:app.diagrams.net">app.diagrams.net</a> online tool. Database implementation just for this task/document will be done using MySQL RDBMS.

### Scope

This document applies to Batoor Delivery Services web app. This web app facilitates the customers of the company to place online on-demand orders and do online shopping from their registered restaurants. The admin will have a display of two portions: orders to be approved and orders approved. They can add/edit items and restaurants as well.

The web app has two panels of administration and users. They can access it by providing login credentials. The output then comprises of an interactive display that let the users select the desirable function that he wants to perform.

The option of online payment would not be available by now and would be added later. The web app can only be accessed through internet.

The software is expected to be completed in 3 months approximately.

#### Users

- Admin: The admin of the web app will have a display of order to approve and approved orders. He can approve / not approve the orders. The approved orders will be stored, and the admin can access it any time. The admin will have an option to add/edit items and restaurants. These functionalities will be displayed categorically with a good interface.
- User / Customer: The user / customer will have the option to make on-demand order online or do online shopping from selected restaurants. The user will have the option to login / create account. These functionalities will be displayed categorically with a good interface.

### **Functional Requirement**

#### Orders Display

- o The web app will display to-be-approved and approved orders to the admin
- The web app would allow the admin panel to send confirmation messages to the user for their orders with delivery charges.
- The web app should display the records of all approved orders to the admin.
- The admin should have an option of submitting delivery charges prior to approving online shopping order.

 The admin should have option of submitting price & delivery charges for ondemand delivery after approval.

#### Add/Edit Items and Restaurants

- o The web app should allow the admin to add/edit items for online order.
- The web app should allow the admin to add/edit restaurants.

#### • Login / Create Account

- The web app shall allow the admin to login with the credentials.
- o The web app shall allow the customer to login to the website.
- The web app shall allow the customer to create account for the website.

#### On-Demand Delivery

- o The web app shall allow the customer to place on-demand delivery orders.
- o The order will require name, contact, and address of pickup and drop-off locations.
- The web app shall allow the customer to state the product the customer wants to order.

#### Online Shopping (Restaurants)

- The web app shall allow the customer to do online shopping from the selected restaurants.
- The web app will have a display of all the restaurants and the food offered by them. The user will select the desired meal and add it to the cart. The user at last, will checkout from the cart and make the final order.

#### Search Box

The search box will allow the user to search any of their desired item.

#### Shopping Cart

 Shopping Cart will help user to buy multiple items in a single go. User just have to navigate to different products and press Add to Card button on each Product Page.

#### Feedback

 This will allow the user to give his reviews or suggestions about the product and services provide by the System.

#### Technical Issues

 This system will work on client-server architecture. It will require an internet server, and which will be able to run application. The system should support some commonly used browser such as IE or Google Chrome etc.

#### • Validity Checks

 In order to gain access to the system, the user is required to enter his/her correct username and password. Also, if the user is an administrator, he is required to enter his login id in order to access and change the facilities provided by the system.

### Non-Functional Requirement

### **Performance Requirements**

The following list provides a brief summary of the performance requirements for this software

Capacity: The software should be available to the audience for 24 hours service. The
software should be able to operate on all major web-browsers with all of its fundamental
functions. It should not slow-down the system. Even at peak hours without affecting the
quality of service of the system

#### • Dynamic requirements:

- The website opening load should not exceed from 2 to 3 sec in normal and under the heavy load not more than 5 to 6 sec.
- The login credential verification time must not exceed 1 sec. under normal server workload and 3 sec. under peak server workload.
- Creating user account should not exceed 1 sec in normal workload and 2 sec in heavy workload.
- Sending approval SMS from admin to user must not exceed 1 sec.
- Quality: The goal is to produce quality software. As the quality of a software is difficult
  to measure quantitatively, the following ways or guidelines will be used when judging
  the quality of the software:
  - **1. Consistency** All code will be consistent with respect to the style (this is implied when adhering to the standard).
  - 2. **Test Cases** All functionality will be tested thoroughly.

### **Software System Attributes**

• Availability: The software will be available 24 hours a day and 7 day per week for its users having internet connection. In case of any problem accessing the application, the support team will solve the problem as soon as possible.

• Maintainability: The system should be maintainable, any changes required should be applicable on the system at any time without any increase in errors.

### **Security Requirements:**

The system should provide a secure login to the users by using advanced secure login algorithms and provide access only to the authorized users as security is the key requirement of this system. The password shall be 6-14 characters long. Passwords can contain digit, hyphen and underscore.

The system's back-end servers shall never display a customer's password. The customer's password may be reset but never shown. The system's back-end servers shall only be accessible to authenticated administrators. The system's back-end databases shall be encrypted.

### 5.4 Software Quality Attributes:

System must be:

- Consistent in performance
- Safe and Secure
- Robust
- Scalable
- Flexible
- User friendly
- Efficient
- Inter-operable
- Upgradable

# Software / Tools / Programming Languages used

### Front-end:

- HTML
- CSS
- JavaScript
- Bootstrap
- React.js

#### Back-end:

- JavaScript
- Node.js
- Express.js

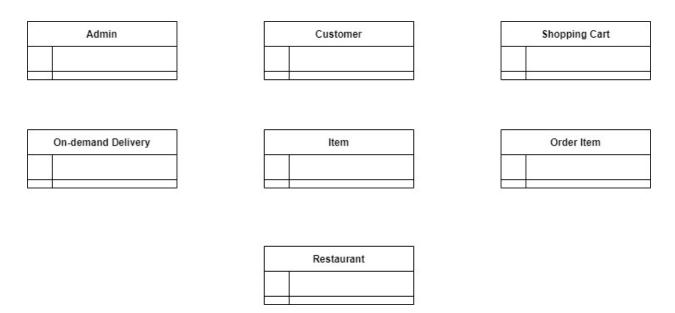
#### Database:

- MongoDB
- MySQL (for this document only)

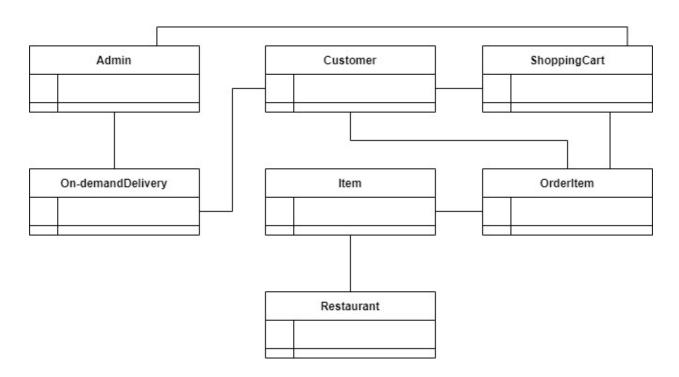
# Chapter 2 Database Design Process

### **Conceptual Design**

### Step 1:

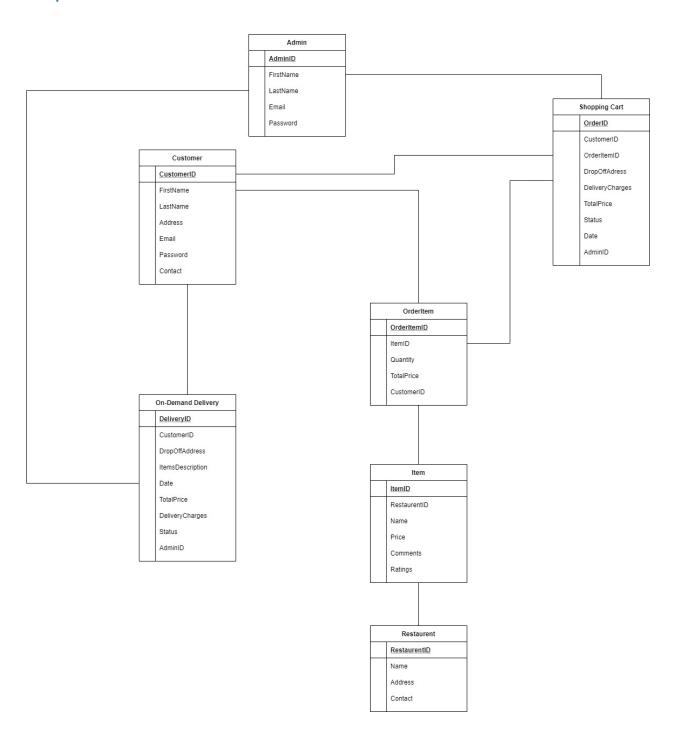


### Step 2:

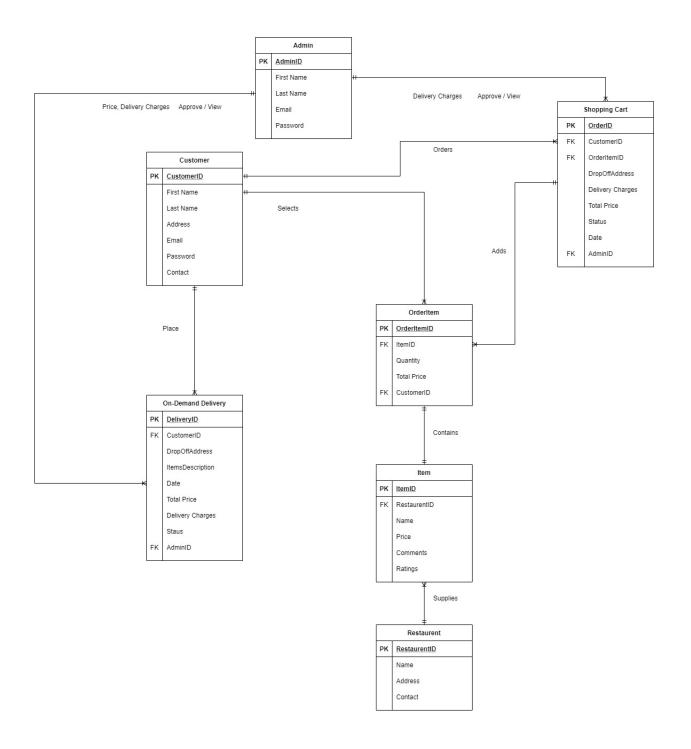


# Logical Design

# Step 1:

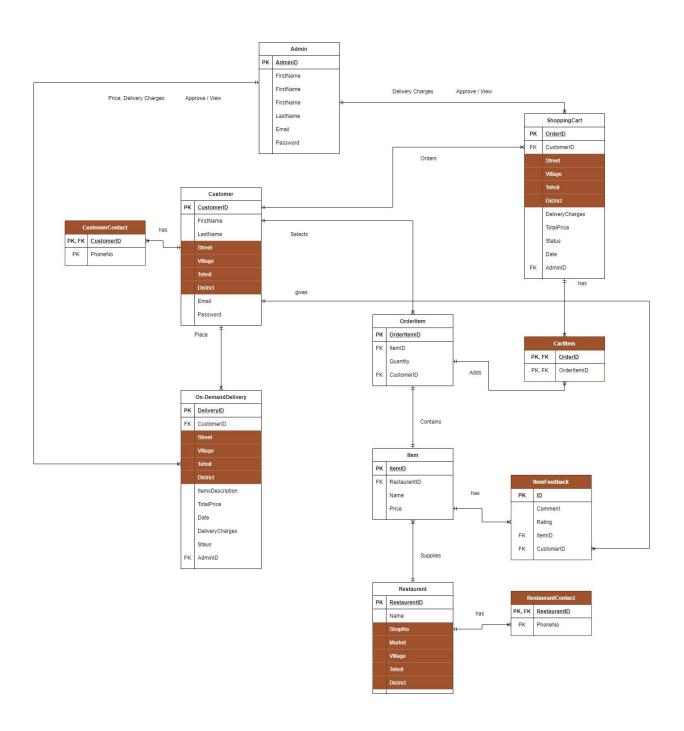


# Step 2:



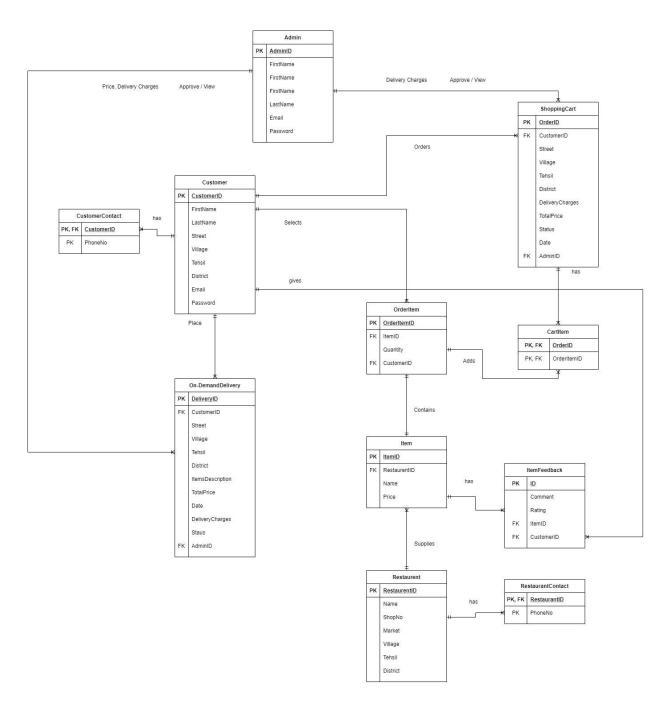
# 1NF (First Normal Form)

# (Changes highlighted)



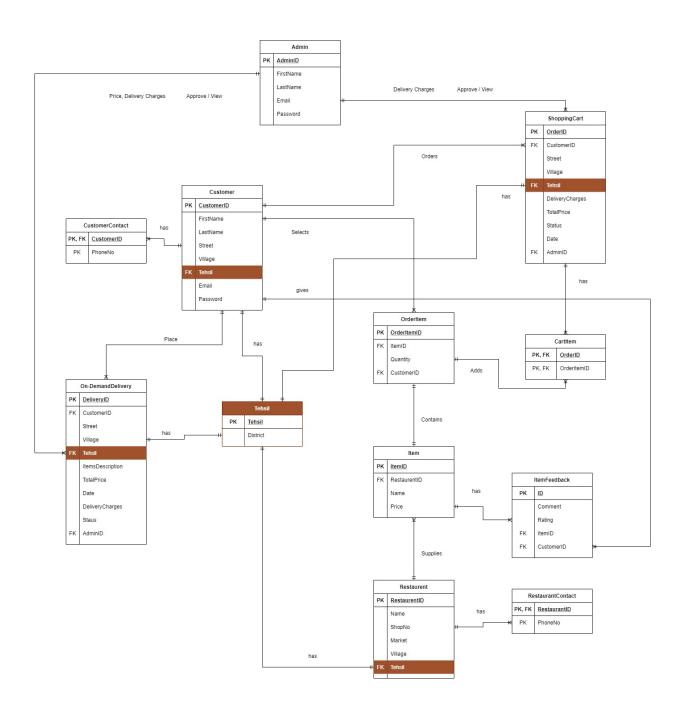
# 2NF (Second Normal Form)

# (No Changes)

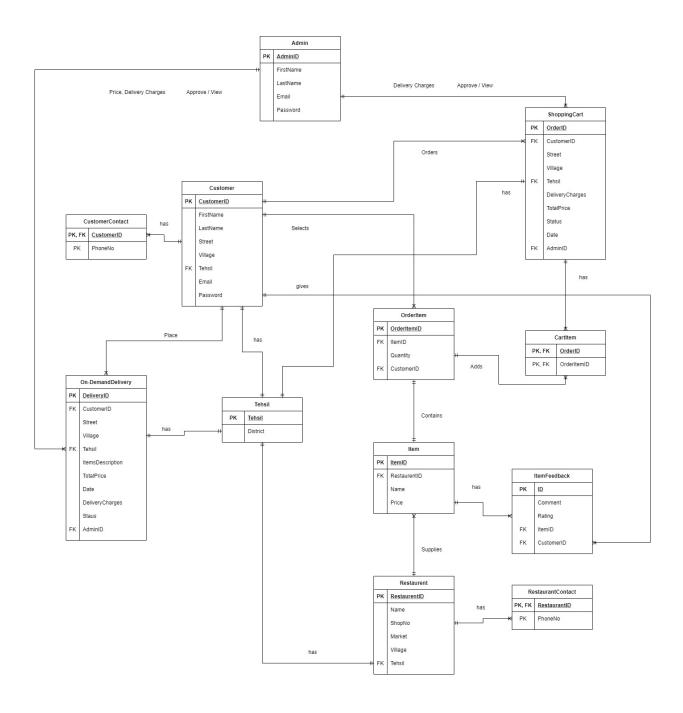


# 3NF (Third Normal Form)

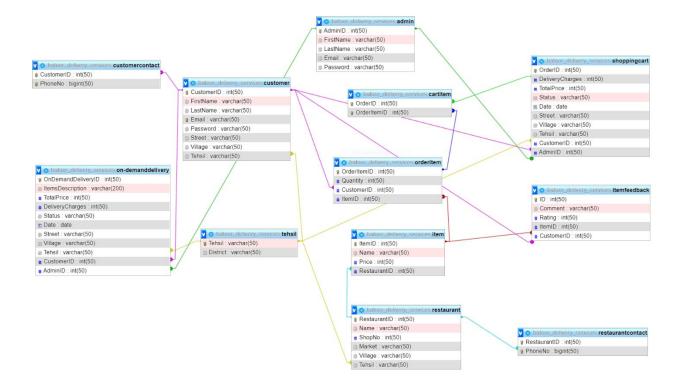
# (Changes Highlighted)



### Final ERD



# Final ERD on MySQL



# Chapter 3 Database Implementation

### **Database Creation Queries**

#### Admin Table

```
CREATE TABLE `admin` (
        `AdminID` int(50) NOT NULL AUTO_INCREMENT,
        `FirstName` varchar(50) NOT NULL,
        `LastName` varchar(50) NOT NULL,
        `Email` varchar(50) NOT NULL,
        `Password` varchar(50) NOT NULL,
       PRIMARY KEY ('AdminID')
)
Customer Table
CREATE TABLE `customer` (
        `CustomerID` int(50) NOT NULL AUTO_INCREMENT,
        `FirstName` varchar(50) NOT NULL,
        `LastName` varchar(50) NOT NULL,
        `Email` varchar(50) NOT NULL,
        'Password' varchar(50) NOT NULL,
        `Street` varchar(50) NOT NULL,
        `Village` varchar(50) NOT NULL,
        'Tehsil' varchar(50) NOT NULL,
       PRIMARY KEY ('CustomerID'),
       UNIQUE KEY `Email` (`Email`),
       KEY 'Tehsil' ('Tehsil'),
       CONSTRAINT `customer_ibfk_1` FOREIGN KEY (`Tehsil`) REFERENCES `tehsil` (`Tehsil`)
)
```

#### CustomerContact Table

### On-DemandDeilvery Table

```
CREATE TABLE `ondemanddelivery` (
        `OnDemandDeliveryID` int(50) NOT NULL AUTO_INCREMENT,
        'ItemsDescription' varchar(200) NOT NULL,
        `TotalPrice` int(50) DEFAULT NULL,
        `DeliveryCharges` int(50) DEFAULT NULL,
        `Status` varchar(50) DEFAULT NULL,
        'Date' date NOT NULL,
        `Street` varchar(50) NOT NULL,
        'Village' varchar(50) NOT NULL,
        'Tehsil' varchar(50) NOT NULL,
        `CustomerID` int(50) NOT NULL,
        `AdminID` int(50) DEFAULT NULL,
       PRIMARY KEY ('OnDemandDeliveryID'),
       KEY `CustomerID` (`CustomerID`),
       KEY 'Tehsil' ('Tehsil'),
       KEY `AdminID` (`AdminID`),
       CONSTRAINT `ondemanddelivery_ibfk_1` FOREIGN KEY (`Tehsil`) REFERENCES `tehsil`
       (`Tehsil`),
```

```
CONSTRAINT `ondemanddelivery_ibfk_2` FOREIGN KEY (`CustomerID`) REFERENCES
       `customer` (`CustomerID`),
       CONSTRAINT `ondemanddelivery_ibfk_3` FOREIGN KEY (`AdminID`) REFERENCES `admin`
       (`AdminID`)
)
Restauarant Table
CREATE TABLE `restaurant` (
        `RestaurantID` int(50) NOT NULL AUTO_INCREMENT,
        'Name' varchar(50) NOT NULL,
        `ShopNo` int(50) NOT NULL,
        'Market' varchar(50) NOT NULL,
        'Village' varchar(50) NOT NULL,
        `Tehsil` varchar(50) NOT NULL,
       PRIMARY KEY ('RestaurantID'),
       KEY 'Tehsil' ('Tehsil'),
       CONSTRAINT `restaurant_ibfk_1` FOREIGN KEY (`Tehsil`) REFERENCES `tehsil` (`Tehsil`)
)
RestaurantContact Table
CREATE TABLE `restaurantcontact` (
        `RestaurantID` int(50) NOT NULL,
        `PhoneNo` bigint(50) NOT NULL,
       PRIMARY KEY ('RestaurantID', 'PhoneNo'),
       CONSTRAINT `restaurantcontact_ibfk_1` FOREIGN KEY (`RestaurantID`) REFERENCES
       `restaurant` (`RestaurantID`)
```

)

### Item Table

```
CREATE TABLE 'item' (
        `ItemID` int(50) NOT NULL AUTO_INCREMENT,
        'Name' varchar(50) NOT NULL,
        'Price' int(50) NOT NULL,
        `RestaurantID` int(50) NOT NULL,
       PRIMARY KEY ('ItemID'),
       KEY 'RestaurantID' ('RestaurantID'),
       CONSTRAINT `item_ibfk_1` FOREIGN KEY (`RestaurantID`) REFERENCES `restaurant`
       (`RestaurantID`)
)
ItemFeedback Table
CREATE TABLE `itemfeedback` (
        'ID' int(50) NOT NULL AUTO_INCREMENT,
        'Comment' varchar(50) NOT NULL,
        'Rating' int(50) NOT NULL,
        'ItemID' int(50) NOT NULL,
        `CustomerID` int(50) NOT NULL,
       PRIMARY KEY ('ID'),
       KEY `ItemID` (`ItemID`),
       KEY 'CustomerID' ('CustomerID'),
       CONSTRAINT `itemfeedback_ibfk_1` FOREIGN KEY (`CustomerID`) REFERENCES `customer`
       (`CustomerID`),
       CONSTRAINT `itemfeedback_ibfk_2` FOREIGN KEY (`ItemID`) REFERENCES `item` (`ItemID`)
)
```

### **OrderItem Table**

('OrderID'),

)

('OrderItemID')

```
CREATE TABLE `orderitem` (
        `OrderItemID` int(50) NOT NULL AUTO_INCREMENT,
        'Quantity' int(50) NOT NULL,
        `CustomerID` int(50) NOT NULL,
        'ItemID' int(50) NOT NULL,
        PRIMARY KEY ('OrderItemID'),
        KEY `ItemID` (`ItemID`),
        KEY 'CustomerID' ('CustomerID'),
        CONSTRAINT `orderitem_ibfk_1` FOREIGN KEY (`ItemID`) REFERENCES `item` (`ItemID`),
        CONSTRAINT `orderitem_ibfk_2` FOREIGN KEY (`CustomerID`) REFERENCES `customer`
       (`CustomerID`)
)
CartItem Table
CREATE TABLE 'cartitem' (
        'OrderID' int(50) NOT NULL,
        `OrderItemID` int(50) NOT NULL,
        PRIMARY KEY ('OrderID', 'OrderItemID'),
        KEY 'OrderItemID' ('OrderItemID'),
```

CONSTRAINT `cartitem\_ibfk\_1` FOREIGN KEY (`OrderID`) REFERENCES `shoppingcart`

CONSTRAINT `cartitem\_ibfk\_2` FOREIGN KEY (`OrderItemID`) REFERENCES `orderitem`

### **ShoppingCart Table**

```
CREATE TABLE `shoppingcart` (
        `OrderID` int(50) NOT NULL AUTO_INCREMENT,
        `DeliveryCharges` int(50) DEFAULT NULL,
        `TotalPrice` int(50) NOT NULL,
        `Status` varchar(50) DEFAULT NULL,
        'Date' date NOT NULL,
        'Street' varchar(50) NOT NULL,
        'Village' varchar(50) NOT NULL,
        'Tehsil' varchar(50) NOT NULL,
        `CustomerID` int(50) NOT NULL,
        `AdminID` int(50) DEFAULT NULL,
        PRIMARY KEY ('OrderID'),
        KEY `CustomerID` (`CustomerID`),
        KEY `AdminID` (`AdminID`),
        KEY `Tehsil` (`Tehsil`),
        CONSTRAINT `shoppingcart_ibfk_1` FOREIGN KEY (`CustomerID`) REFERENCES `customer`
       (`CustomerID`),
        CONSTRAINT `shoppingcart_ibfk_2` FOREIGN KEY (`AdminID`) REFERENCES `admin`
       (`AdminID`),
        CONSTRAINT `shoppingcart_ibfk_3` FOREIGN KEY (`Tehsil`) REFERENCES `tehsil` (`Tehsil`)
)
Tehsil Table
CREATE TABLE `tehsil` (
        `Tehsil` varchar(50) NOT NULL,
        'District' varchar(50) NOT NULL,
        PRIMARY KEY ('Tehsil')
)
```

### **Tables Implementation Screenshots**

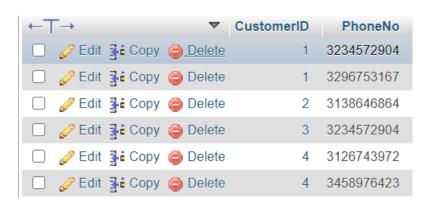
### **Admin**



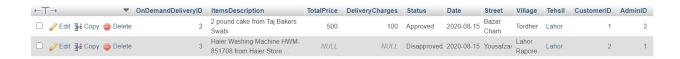
### Customer



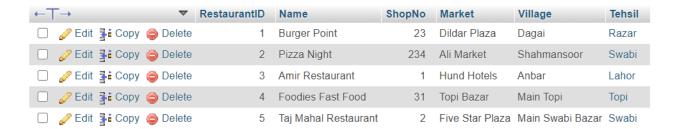
### CustomerContact



### On-demandDelivery



### Restaurant



### RestaurantContact



# Item

← <del>T</del> →	~	ItemID	Name	Price	RestaurantID
☐ Ø Edit ♣ Copy	Delete	1	Chicken Burger (Small)	200	1
☐ Ø Edit ♣ Copy	Delete	2	Chicken Burger (Medium)	250	1
☐ Ø Edit 3 Copy	Delete	4	Cheese Pizza (Small)	500	1
☐ Ø Edit ♣ Copy	Delete	5	Cold Drink (250 ml)	50	1
☐ Ø Edit 3 Copy	Delete	6	Fries (Small)	50	2
☐ 🥜 Edit 👫 Copy	Delete	7	Fries (Large)	100	2
☐ Ø Edit ♣ Copy	Delete	8	Chicken Tikka Pizza (Small)	500	2
☐ Ø Edit ♣ Copy	Delete	9	Chicken Tikka Pizza (Large)	700	2
☐ 🥜 Edit 👫 Copy	Delete	10	Chicken Karai	500	3
☐ <i>Ø</i> Edit <b>}</b> Copy	Delete	11	Mutton Karai	500	5
☐ 🥜 Edit 👫 Copy	Delete	12	Pulao	300	5
☐ <i>⊘</i> Edit <b>}</b> Copy	Delete	13	Shawarma	100	4
☐ 🥜 Edit 👫 Copy	Delete	14	Chicken Roast	500	4

# **ItemFeedback**

← <del></del> T→	□ IE	0	Comment	Rating	ItemID	CustomerID
☐   Ø Edit  ☐ Copy  ☐ De	lete '	1	Tasty	5	14	4
☐   Ø Edit  ☐ Copy  ☐ De	lete 2	2	Nice but took so much time	3	9	2
☐      Ø Edit      Gopy      Ope	lete 3	3	Timely delivery	4	14	3
☐ Ø Edit ¾ Copy   De	lete 4	4	Hell of a taste	5	9	1

### Orderltem

<b>←</b> ⊤→	$\triangledown$	OrderItemID	Quantity	CustomerID	ItemID
☐   Ø Edit   Gopy   Gopy   Gopy   Gopp  Gop	Delete	1	2	3	11
☐ Ø Edit ¾ Copy	Delete	2	1	3	2
☐   Ø Edit  ☐ Copy  ⑥	Delete	4	1	4	7
□    Ø Edit   Edit   Copy   O  Copy	Delete	5	2	4	5

### CartItem



### **ShoppingCart**



### **Tehsil**

