

# BC\_PUN\_1 Team 2

## TEAM DOCUMENTATION,ER DIAGRAMS AND UI SNAPSHOTS

**Team Name:** Innovision

**Project Name:** Order Processing System

**Purpose:** Web Based Application for processing orders and generating invoices.

### **Key Features:**

- Select login option employee login or customer login
- Then pass the userId and password if you are employee
- Employee functions : employee can create the quotes with order status pending
- The list of the pending orders will be displayed to employee and then employee will select the orders to create quote
- Then that quote will be saved to database
- Customer functions: he can login by Id or username and password
- Customer is able to review the pending orders and can place the new order
- While reviewing the pending orders customer can approve that orders and generate the invoice that changes will reflect to database
- While placing the new order the customer is able to select various products of any quantity and according to that the shipping cost total order value is calculated
- After selecting the product customer is asked to approve the order if yes then order status will be approved or else it will be pending and will expire in 30 days.

### **Dependencies:**

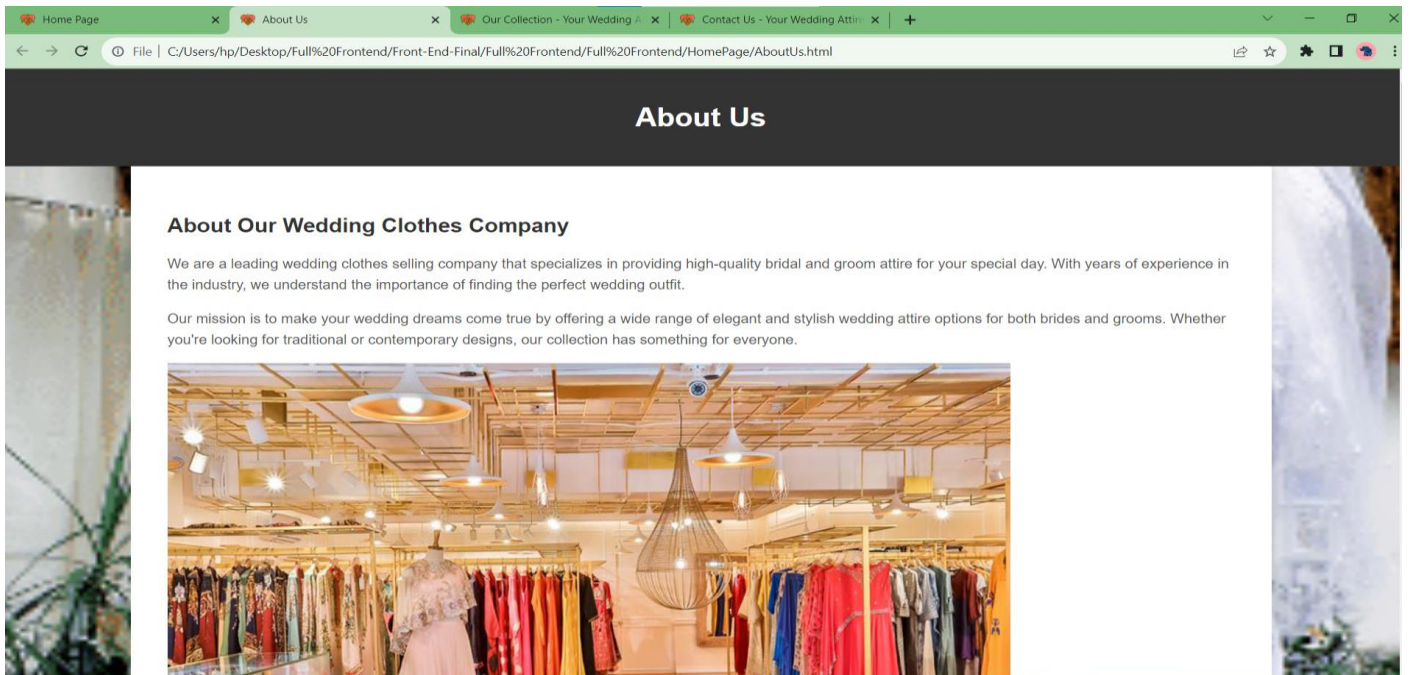
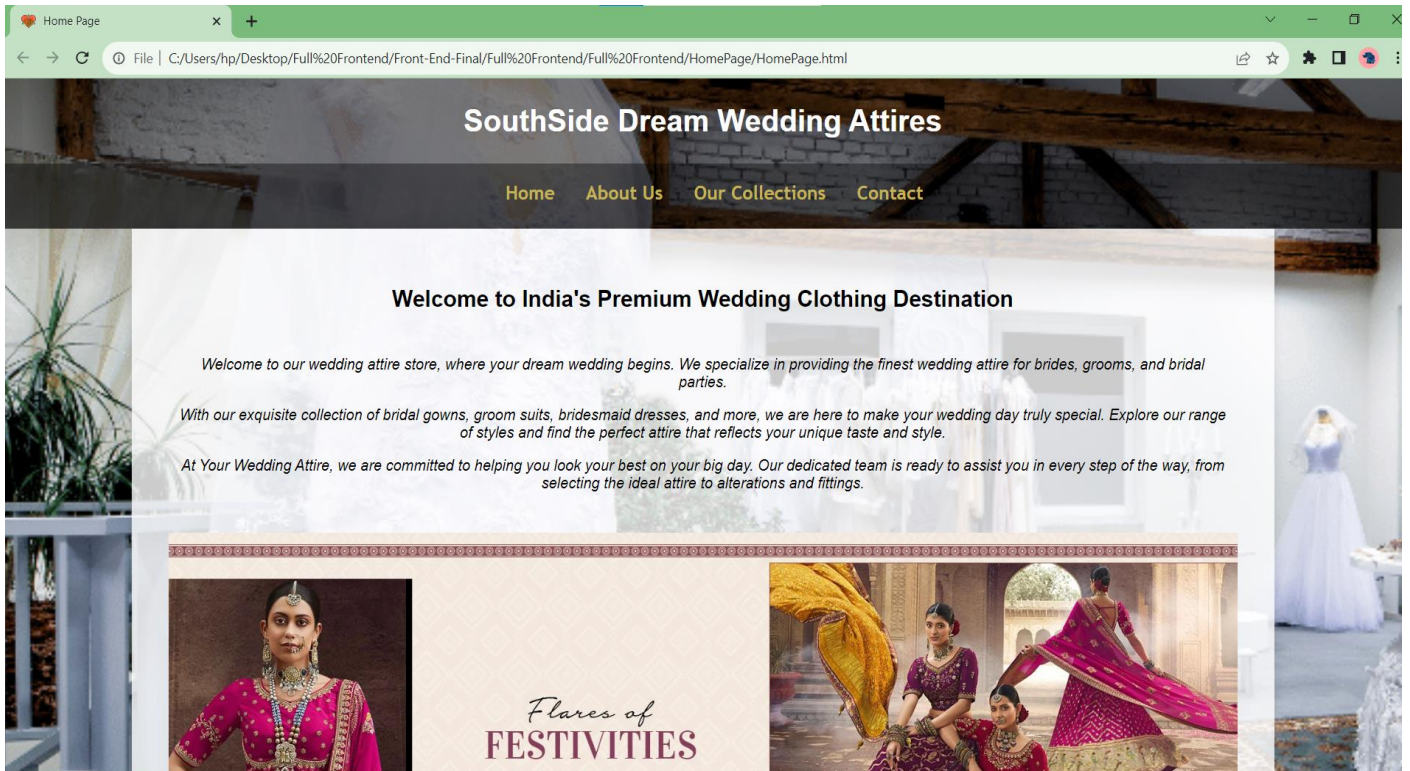
Front-End:

- HTML
- CSS
- JavaScript
- JSON

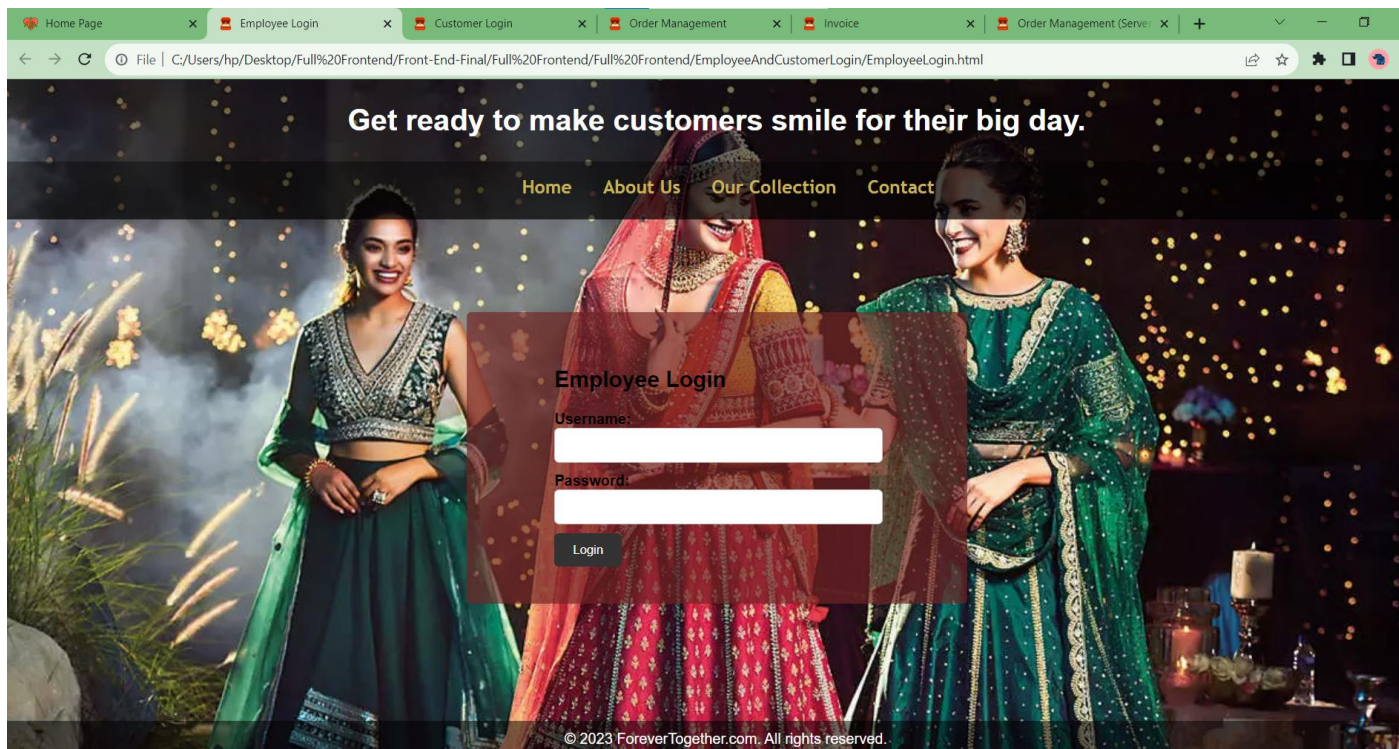
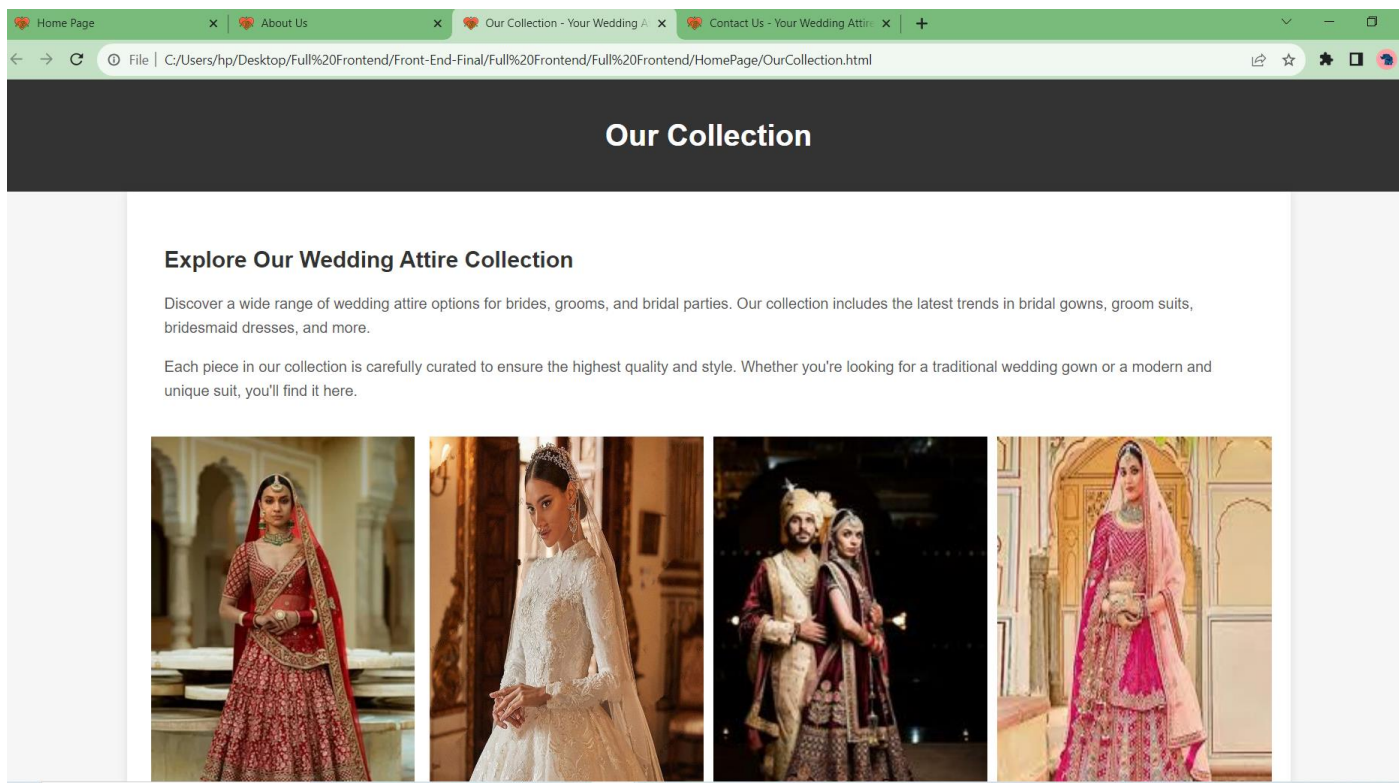
Back-End:

- Java -Spring Tool Suite
- SQL-MySQL Databse

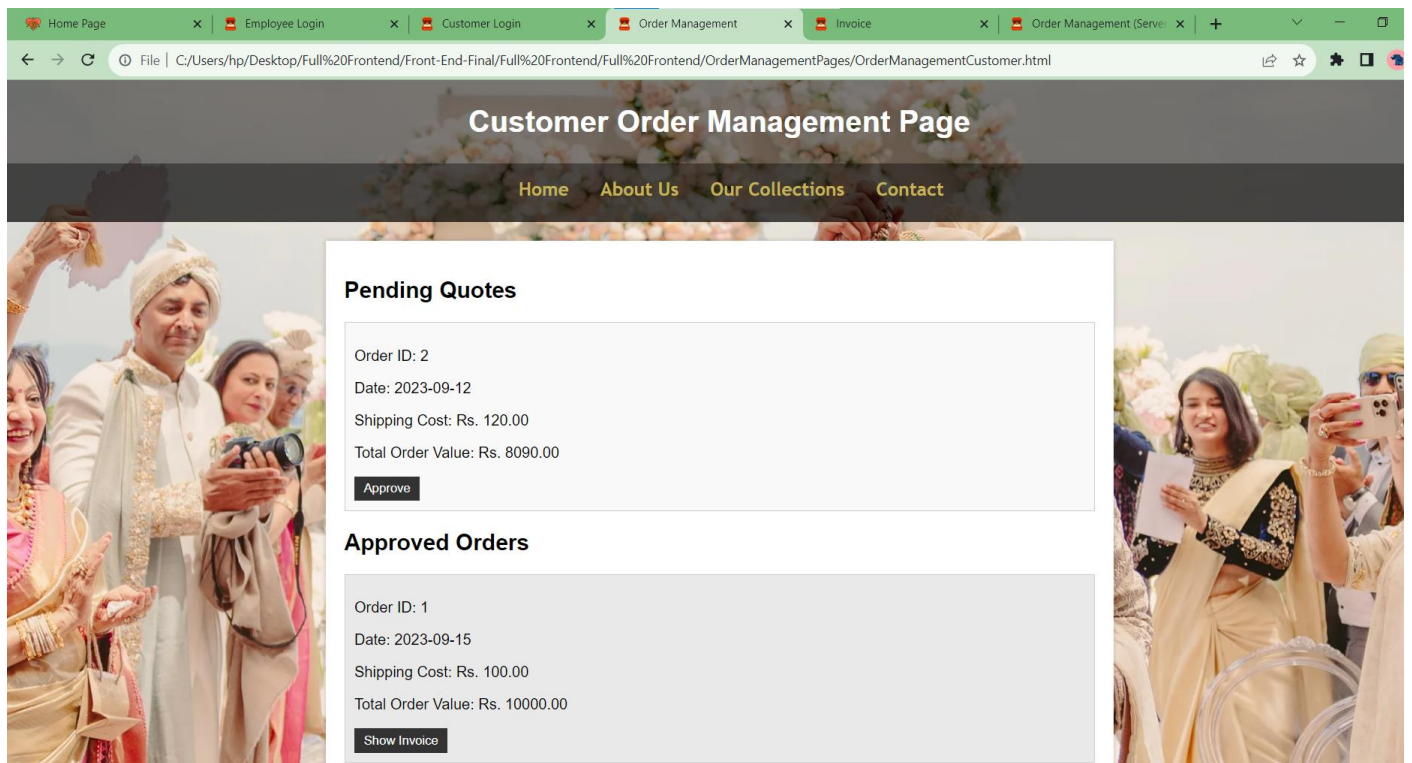
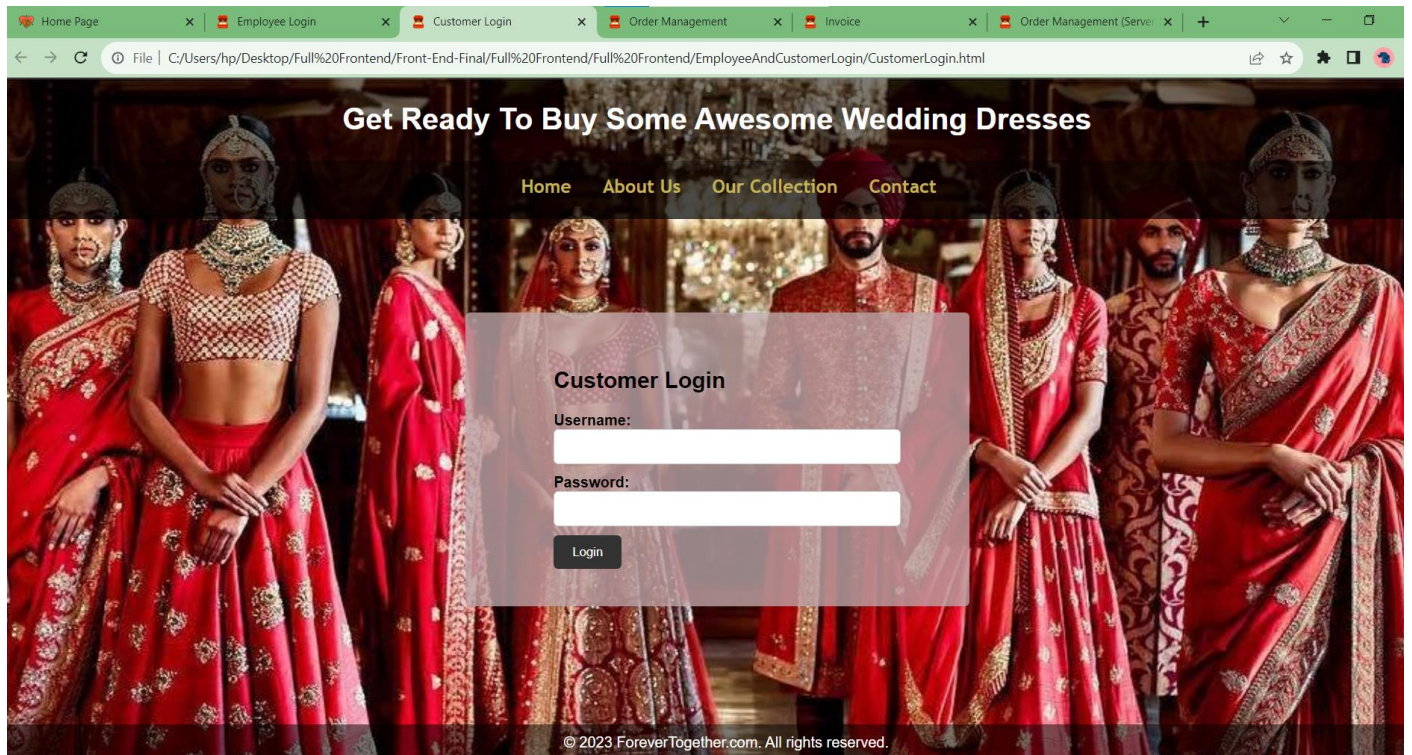
## FRONT-END PAGES:



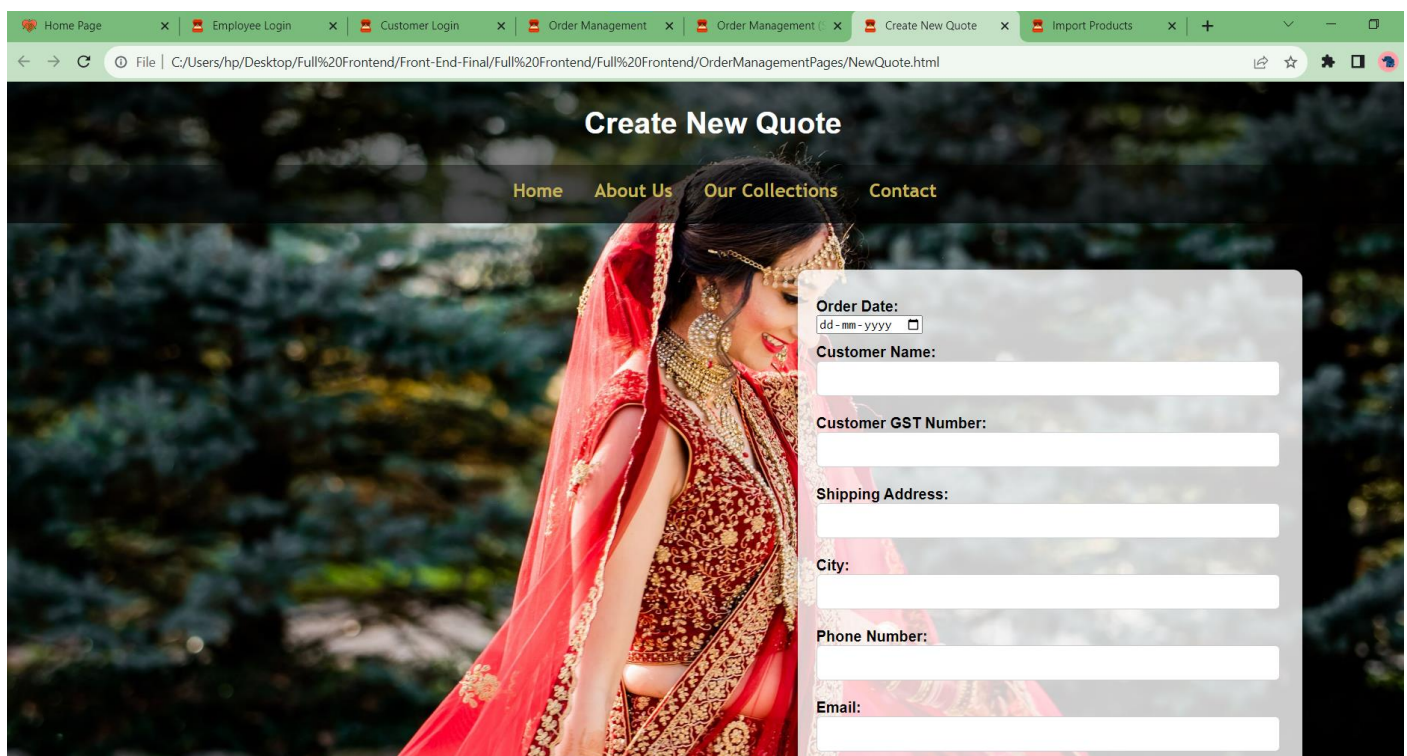
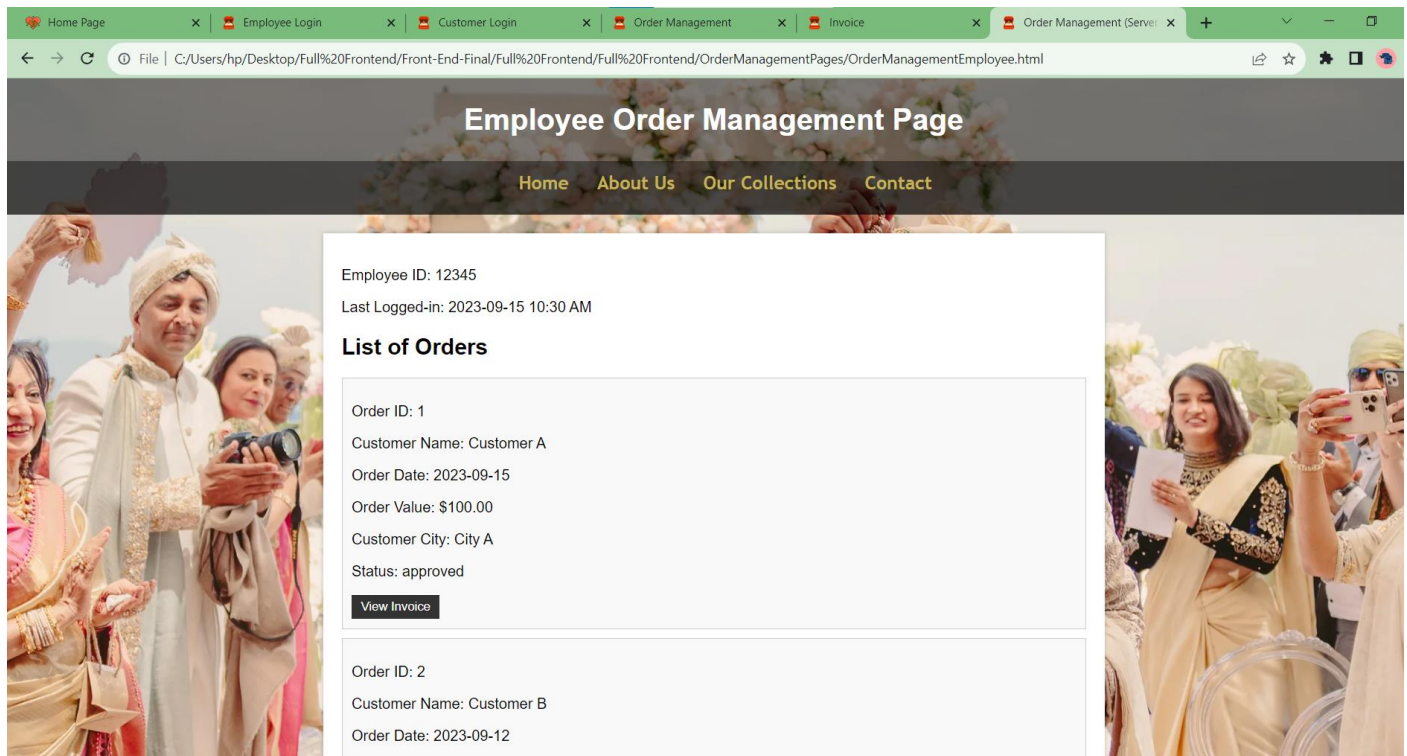


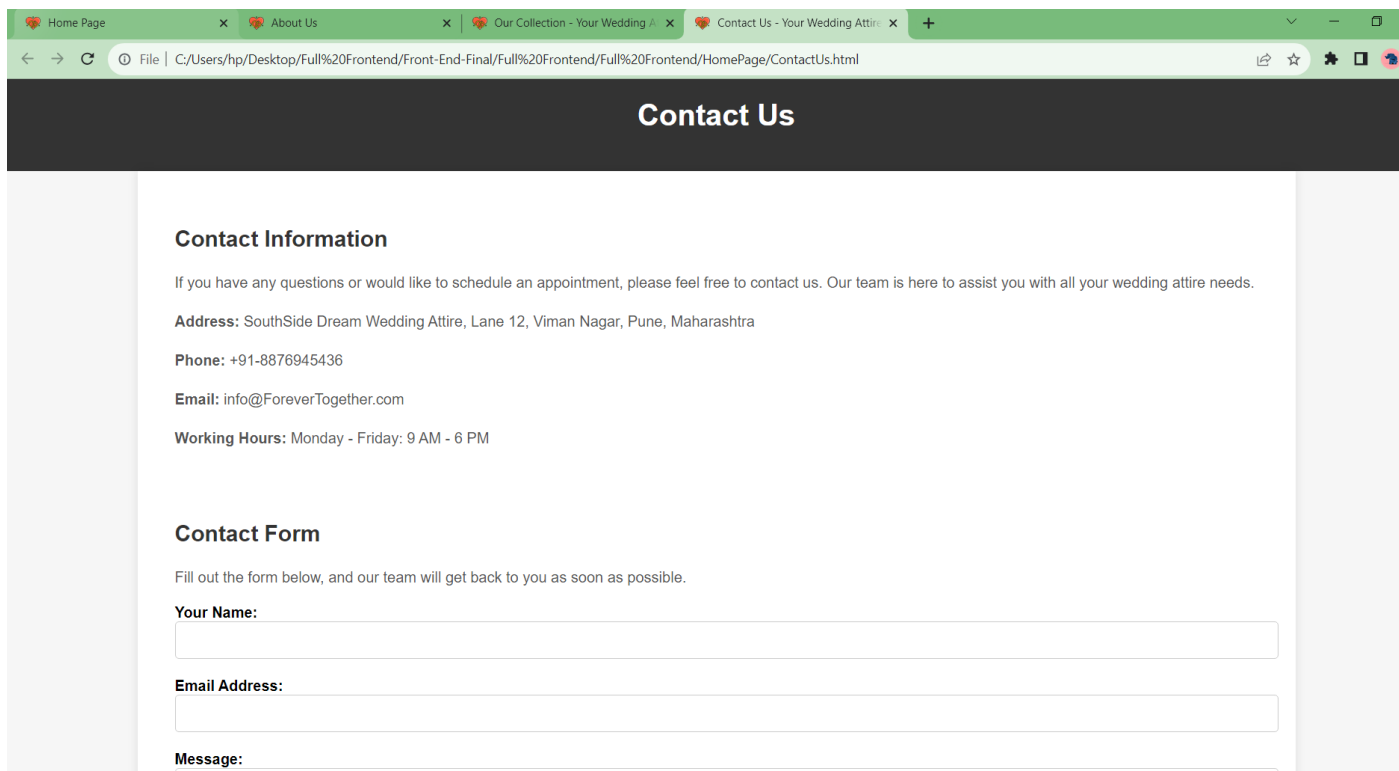
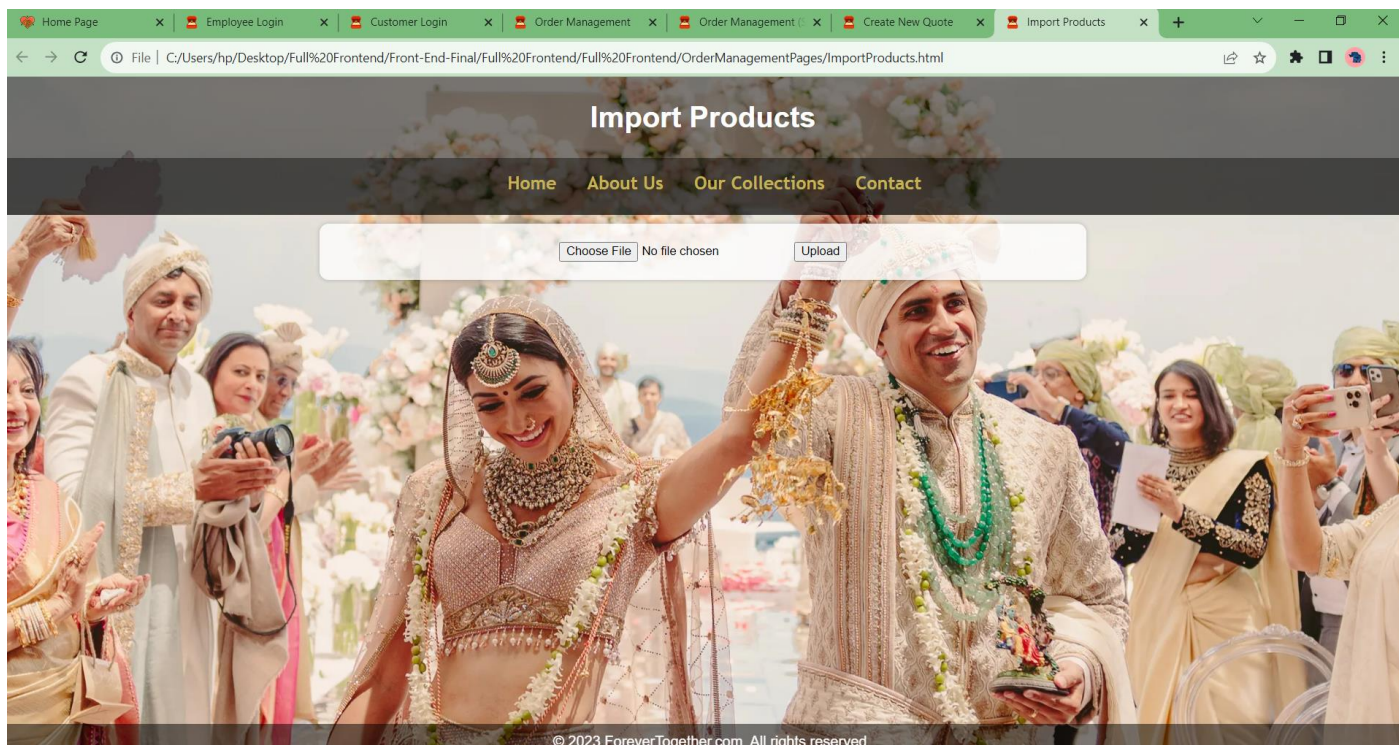








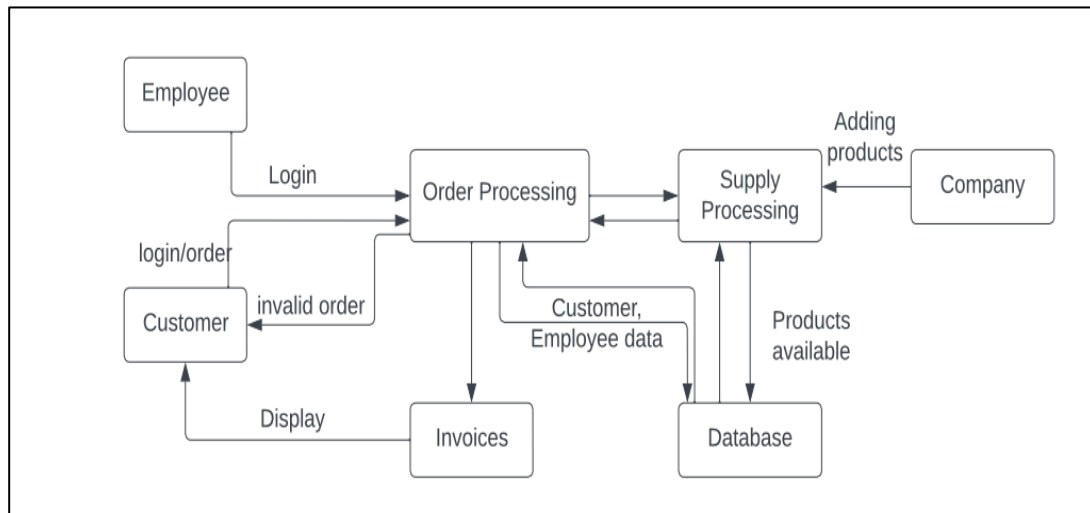




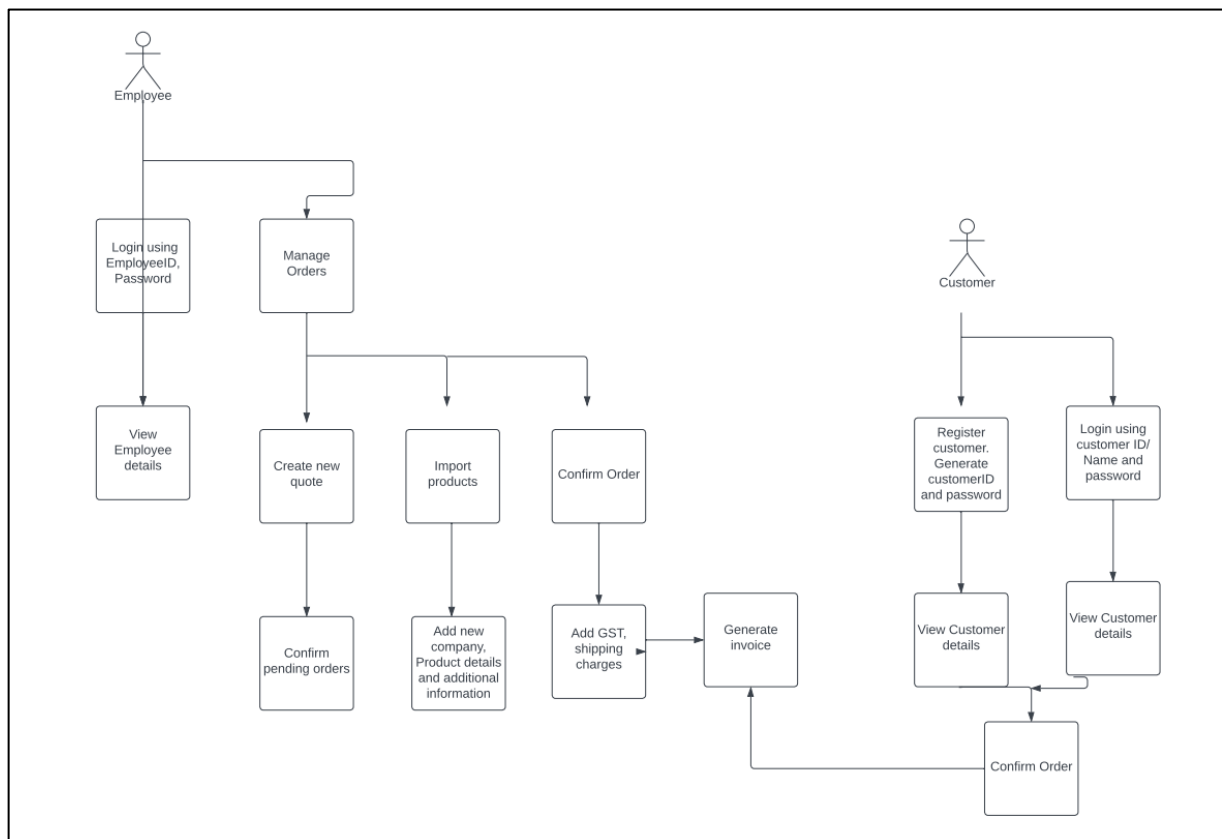
# Invoice

Customer ID	12345
Customer Name	Sara Lakhani
GST Number	GST123456789
City and Address	Riddhi Siddhi Park, Viman Nagar, Pune
Products Bought	
Banarasi Saree	Rs. 5000.00
Lehenga Choli	Rs. 7500.00
Silk Dupatta	Rs. 600.00
Shipping Cost	Rs. 50.00
Total Amount to be Paid	Rs 13,150.00

## CONTROL-FLOW DIAGRAM:

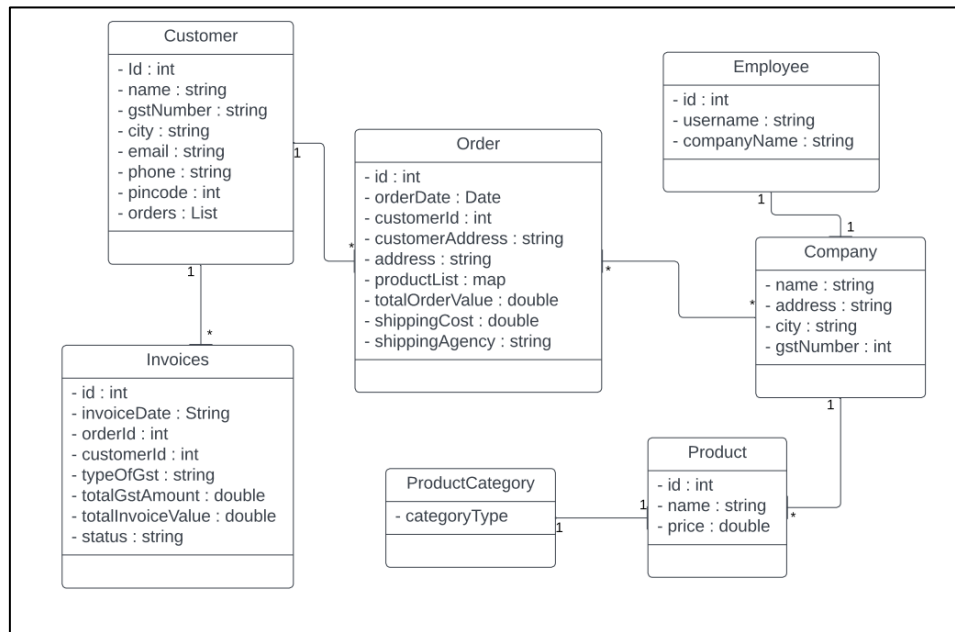


## UML DIAGRAM:





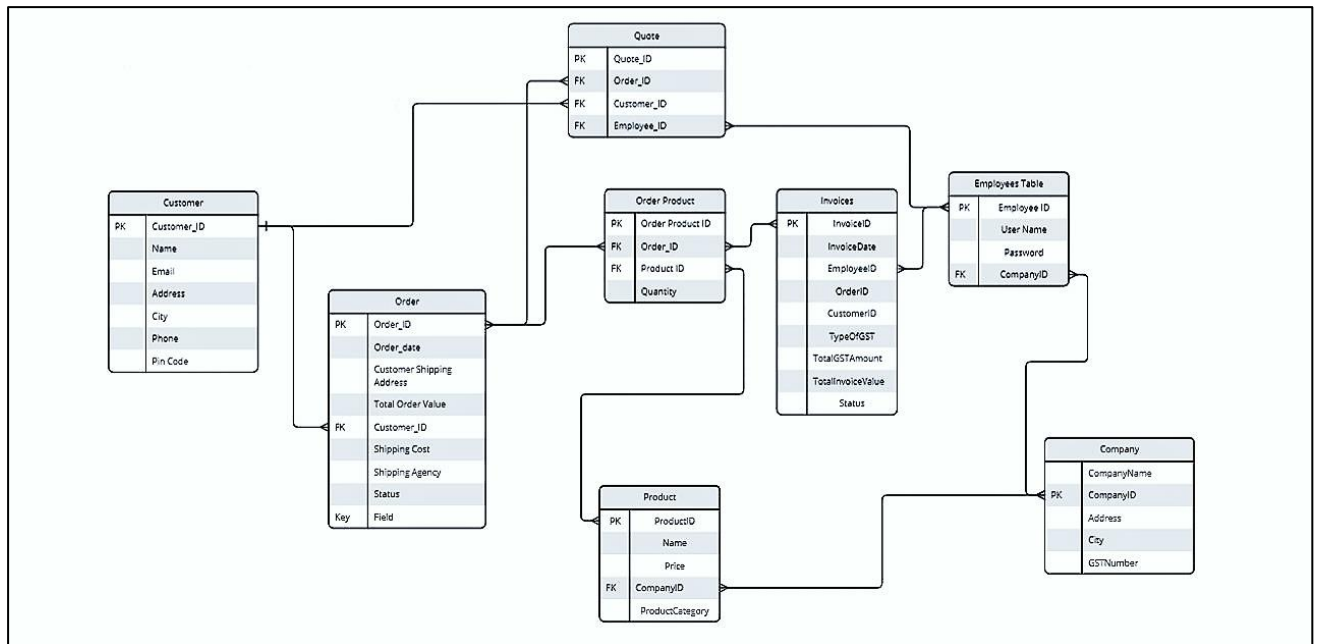
## CLASS DIAGRAM:



## ORDER PROCESSING DATABASE SCHEMA

A database named "OrderProcessing" has been created, with tables designed to handle customer data, company information, employee records, product listings, orders, and their associated products. These tables serve as the core structure for an order processing system, facilitating the storage and retrieval of information pertaining to customers, products, and orders.

### Entity-Relationship Diagram:



### **Entities:**

- Customers
- Orders
- OrderProducts
- Products
- Company
- Employees
- Quotes

### **Relationships:**

- Customers and Orders (one-to-many)
- Orders and OrderProducts (one-to-many)
- Products and Company (one-to-many)
- Employees and Company (one-to-many)
- Quotes and Orders (many-to-one)
- Quotes and Customers (many-to-one)
- Quotes and Employees (many-to-one)

## Entities and Attributes:

### **Customers Entity:**

- CustomerID (Primary Key)
- Name, GSTNumber, Address, City, Email, Phone, PinCode, Password

### **Orders Entity:**

- OrderID (Primary Key)
- OrderDate, CustomerShippingAddress, TotalOrderValue, ShippingCost, ShippingAgency, Status
- CustomerID (Foreign Key)

### **OrderProducts Entity:**

- OrderProductID (Primary Key)
- Quantity
- OrderID (Foreign Key)
- ProductID (Foreign Key),

### **Products Entity:**

- ProductID (Primary Key)
- ProductName, Price
- CompanyID (Foreign Key)

### **Company Entity:**

- CompanyID (Primary Key)
- CompanyName, Address, City, GSTNumber

### **Employees Entity:**

- EmployeeID (Primary Key)
- UserName, Password
- CompanyID (Foreign Key)

### **Quotes Entity:**

- QuotesID (Primary Key)
- OrderID (Foreign Key)
- CustomerID (Foreign Key)
- EmployeeID (Foreign Key)

## Relationships:

- **Customers and Orders:** One-to-many relationship where each customer can place multiple orders.
- **Orders and OrderProducts:** One-to-many relationship where each order can contain multiple products with quantities.
- **Products and Company:** One-to-many relationship where each product belongs to a specific company.
- **Employees and Company:** One-to-many relationship where each employee is associated with a specific company.
- **Quotes and Orders:** Many-to-one relationship where multiple quotes can be associated with a single order.



- **Quotes and Customers:** Many-to-one relationship where multiple quotes can be associated with a single customer.
- **Quotes and Employees:** Many-to-one relationship where multiple quotes can be associated with a single employee.

### Indexing and Performance:

- **Primary Keys:** Primary key (e.g., CustomerID, OrderID, ProductID, CompanyID, EmployeeID, QuoteID) which is automatically indexed. Primary keys ensure uniqueness and efficient data retrieval.
- **Foreign Keys:** Foreign keys (e.g., CustomerID, OrderID, ProductID, EmployeeID) establish relationships between tables. These columns are automatically indexed to speed up join operations, ensuring that related data is retrieved efficiently.

### Sample Data:

#### Customers Table:

CustID	Name	GSTNo	Address	City	Email	Phone	PinCode	Password
1	Ajay	GST123	123 Main St	Bareilly	<a href="mailto:ajay@ex.com">ajay@ex.com</a>	823456789	400001	@Ajay823
2	Akash	GST678	456 Oak Ave	Bihar	<a href="mailto:akash@ex.com">akash@ex.com</a>	987654321	110001	@Akash98
3	Abhinav	GST246	789 Elm Rd	Delhi	<a href="mailto:abhinav@ex.com">abhinav@ex.com</a>	876543210	700001	@Abhin87

#### Company Table:

CompanyID	CompanyName	Address	City	GSTNumber
1	Indian Textiles	123 Fabric Street	Mumbai	GSTIN12345
2	Silk Emporium	456 Silk Lane	Delhi	GSTIN67890
3	Cotton Creations	789 Cotton Road	Jaipur	GSTIN24680

#### Employees Table:

EmpID	UserName	Password	CompID
1	emp1_it	pass123	1
2	emp2_it	sec_pass	1
3	emp1_se	silkpass	2

#### Products Table:

ProductID	ProductName	Price	CompID
1	Cotton Saree	1500.00	1
2	Silk Kurta	1200.00	1
3	Ethnic Shawl	800.00	1
4	Silk Saree	2000.00	2
5	Embroidered Lehenga	2500.00	2

## Orders Table:

OrdID	OrderDate	CustID	ShipAddress	TotVal	ShipCost	ShipAgency	Status
1	2023-09-10	1	123 Main St	1500.00	50.00	ABC Ship	Approved
2	2023-09-11	2	456 Oak Ave	2500.00	75.00	XYZ Cour	Complete
3	2023-09-11	3	789 Elm Rd	1200.00	45.00	DHL Expr	Approved

## Quotes Table:

QuotesID	OrderID	CustomerId	EmployeeID
1	1	1	1
2	2	2	3
3	3	3	2

## Constraints:

### Primary Key Constraint:

Used In: CustomerID, CompanyID, EmployeeID, ProductID, OrderID, QuotesID.

Usefulness: Ensures each record in a table has a unique identifier.

Example: CustomerID in the Customers table serves as a unique identifier for each customer.

### Foreign Key Constraint:

Used In: CustomerID (in Orders), CompanyID (in Employees and Products), OrderID (in Quotes), CustomerID (in Quotes), EmployeeID (in Quotes).

Usefulness: Enforces relationships between tables for data consistency.

Example: CustomerID in the Orders table references the Customers table, ensuring orders are linked to valid customers.

### NOT NULL Constraint:

Used In: Name, GSTNumber, Address, City, Email, Phone, PinCode (in Customers), UserName, Password (in Employees).

Usefulness: Requires specific columns to contain data, preventing null values.

Example: Name and Email columns in Customers must have non-null values for essential customer information.

### Check Constraint (Status in Orders):

Used In: Status (in Orders).

Usefulness: Restricts column values to a predefined set of valid options.

Example: Status column in Orders is limited to values like "Pending," "Approved," etc., ensuring data consistency.

### Auto-Increment Constraint:

Used In: CustomerID, EmployeeID, QuotesID.

Usefulness: Automatically generates unique values for new records.

Example: CustomerID and EmployeeID are auto-incremented, simplifying record creation.

### **Use case:**

#### **Customer Registration:**

Successful Registration: A new customer can register successfully by providing valid details such as name, email, and password.

Invalid Registration: The system prevents customers from registering with incomplete or invalid information.

#### **Employee Login:**

Valid Employee Login: An authorized employee can log in with the correct Employee ID and password.

Invalid Employee Login: The system denies access to employees with incorrect login credentials.

#### **Product Import:**

Valid JSON Upload: Users can choose and upload a valid JSON file for importing products.

Feedback on Import: The system provides clear feedback on the status of product insertion, indicating success or failure.

#### **Information Display:**

Company Details: Users can access and view company details, including GST rates and shipping costs.

Employee Details: Employee information is readily available.

#### **Invoice Management:**

Invoice Status Update: The system updates the invoice status to "paid" after payment confirmation.

Invoice Generation: Confirming an order triggers the generation of an invoice with correct details, including GST and total value.

#### **Quote Approval:**

Quote Submission: An employee can submit a quote for approval.

Approval Process: The quote approval process updates the order status correctly based on approval decisions.

#### **Performance Testing:**

Concurrent Orders: The application's performance is tested by simulating a large number of concurrent orders to assess response times.



**Error Handling:**

Informative Error Messages: The system provides informative error messages for various scenarios, such as login failures or file upload failures.

**Authentication and Session Management:**

User Authentication: The application's authentication and session management are tested for both employees and customers.

**Product Import Count:**

Product Import Count: The system accurately counts the number of products successfully imported and those that failed to import during the import process.