**Billing Management System Documentation**

**1️⃣ Setup Guide**

**Step 1: Configure the Database**

1. Open MySQL Workbench or phpMyAdmin.
2. Create a new database:
3. CREATE DATABASE BillingManagement;
4. USE BillingManagement;
5. Run the following SQL scripts to create tables:
6. CREATE TABLE customers (
7. id INT AUTO\_INCREMENT PRIMARY KEY,
8. name VARCHAR(100) NOT NULL,
9. email VARCHAR(100) UNIQUE NOT NULL,
10. phone VARCHAR(15) NOT NULL
11. );
12. CREATE TABLE products (
13. id INT AUTO\_INCREMENT PRIMARY KEY,
14. name VARCHAR(100) NOT NULL,
15. price DECIMAL(10,2) NOT NULL,
16. stock INT NOT NULL
17. );
18. CREATE TABLE invoices (
19. id INT AUTO\_INCREMENT PRIMARY KEY,
20. customer\_id INT,
21. total\_amount DECIMAL(10,2),
22. date TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,
23. FOREIGN KEY (customer\_id) REFERENCES customers(id) ON DELETE CASCADE
24. );
25. CREATE TABLE invoice\_items (
26. id INT AUTO\_INCREMENT PRIMARY KEY,
27. invoice\_id INT,
28. product\_id INT,
29. quantity INT,
30. price DECIMAL(10,2),
31. FOREIGN KEY (invoice\_id) REFERENCES invoices(id) ON DELETE CASCADE,
32. FOREIGN KEY (product\_id) REFERENCES products(id)
33. );
34. CREATE TABLE payments (
35. id INT AUTO\_INCREMENT PRIMARY KEY,
36. invoice\_id INT,
37. amount DECIMAL(10,2),
38. payment\_date TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,
39. FOREIGN KEY (invoice\_id) REFERENCES invoices(id) ON DELETE CASCADE
40. );

**Step 2: Run the Server**

1. Install and configure **Apache Tomcat 11+**.
2. Place the BillingManagementSystem.war file inside Tomcat/webapps/.
3. Start the Tomcat server:
4. net stop Tomcat11 && net start Tomcat11
5. Access the system at: http://localhost:8080/BillingManagementSystem/

**2️⃣ Feature Overview**

**Customer & Product Management**

* **Add New Customers** → Enter customer details and save.
* **Update/Delete Customers** → Click on **Edit/Delete** next to a customer.
* **Add New Products** → Enter product details and save.
* **Update/Delete Products** → Click on **Edit/Delete** next to a product.

**Invoice Management**

* **Create a New Invoice**:
  1. Select a customer.
  2. Add products to the invoice.
  3. Confirm and save the invoice.
* **View & Edit Invoices**:
  1. View existing invoices and update details if needed.

**Payments Processing**

* **Add Payment**:
  1. Navigate to **Payments Section**.
  2. Select an invoice and enter the payment amount.
  3. Save the payment record.
* **View Payment History**:
  1. List of all payments made for invoices.

**3️⃣ Sample Data for Testing**

**Customers**

INSERT INTO customers (name, email, phone) VALUES

('Amit Sharma', 'amit.sharma@example.com', '9876543210'),

('Priya Verma', 'priya.verma@example.com', '9765432109'),

('Rahul Mehta', 'rahul.mehta@example.com', '9654321098');

**Products**

INSERT INTO products (name, price, stock) VALUES

('Wireless Mouse', 999.99, 20),

('Mechanical Keyboard', 2499.50, 15),

('USB-C Charger', 1499.00, 30);

**4️⃣ Next Steps**

✅ **Restart Tomcat** (net stop Tomcat11 && net start Tomcat11) ✅ **Run the Application** (http://localhost:8080/BillingManagementSystem/) ✅ **Test Features: Add/Edit/Delete Customers, Products, Invoices, and Payments** 🚀 **Now, the system is fully functional and ready for use!**