



**SOEN 387 Section F**

**Web-Based Enterprise Application Design - Fall 2023**

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**Assignment 2**

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## **Development environment and Instructions to run application**

### **Development Environment:**

The development environment used for this project comprises the following tools and technologies:

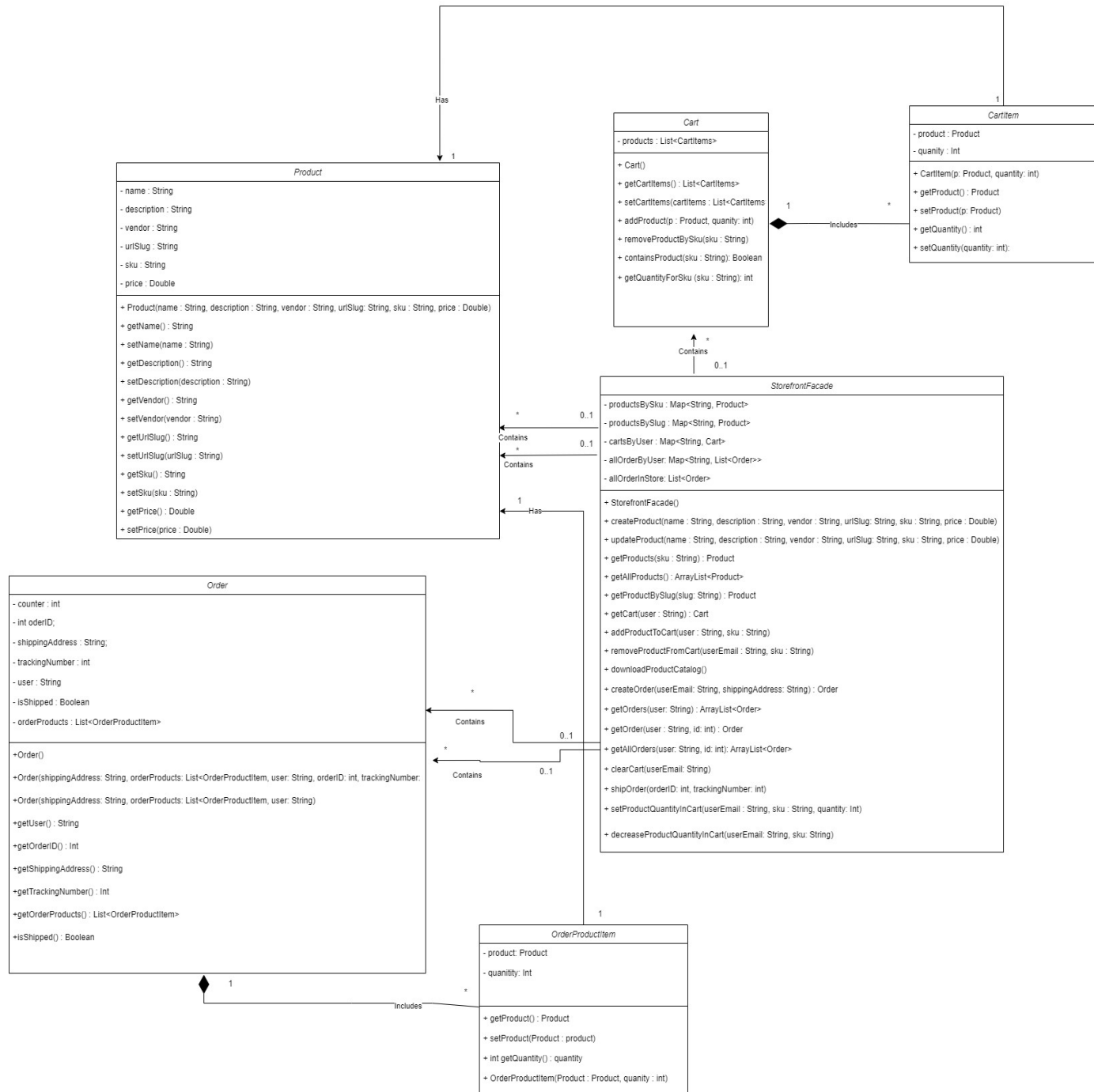
1. **Java:** Given that the backend implementation relies on Java servlets and JSP, a JDK (Java Development Kit) is necessary. We used JDK version 17.0.2.
2. **IDE:** IntelliJ IDEA was used as the Integrated Development Environment for coding, debugging, and testing the application.
3. **Server:** Apache Tomcat v9.0.82 was used as the server to host the servlets and JSP pages.
4. **Version Control:** Git was used for version control, with the repository hosted on GitHub.
5. **Build Tool:** Maven was utilised as the build tool for managing dependencies and automating the build process.
6. **Web Technologies:** HTML5, CSS, and JavaScript were used for the front-end development. Additionally, Bootstrap was utilised for styling the pages.
7. **Browser:** The application was primarily tested on Google Chrome, though it's designed to be cross-browser compatible.
8. **MySQL 8.0 :** The database used for the application.

### **Compilation Instructions:**

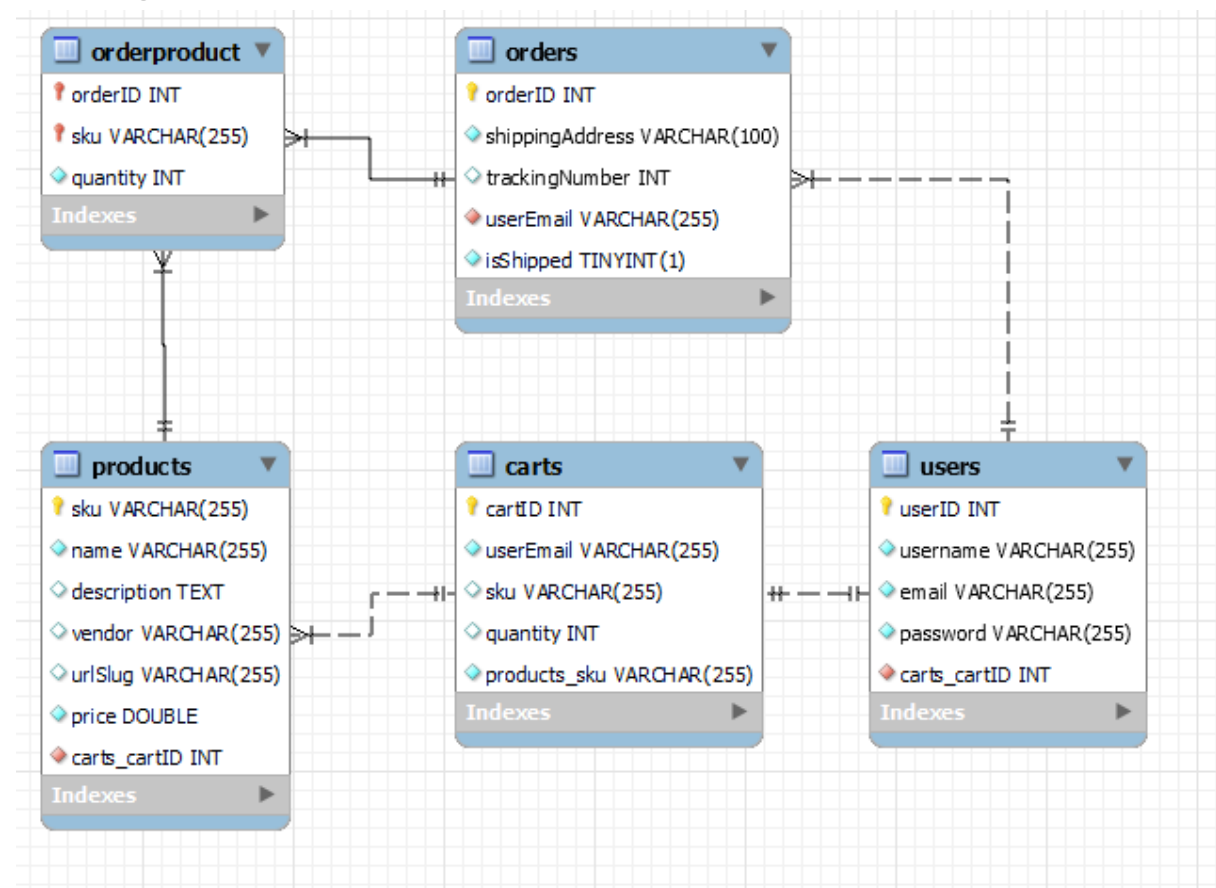
To run the application using the provided .war file, follow the steps below:

1. **Download and Install Apache Tomcat:**  
If not already installed, download and install Apache Tomcat v9.0.82 from the official website.
2. **Deploy the WAR file:**  
Copy the provided .war file to the webapps directory of your Tomcat installation (e.g., C:\Program Files\Apache Software Foundation\Tomcat 9.0\webapps).
3. **Start Tomcat:**  
Navigate to the bin directory of your Tomcat installation (e.g., C:\Program Files\Apache Software Foundation\Tomcat 9.0\bin).  
Execute startup.bat (on Windows) or startup.sh (on Linux/macOS) to start the Tomcat server.
4. **Import mysql dump file:**  
Import the mysql dump file to load the database tables and contents
5. **Access the Application:**  
Open a web browser and navigate to <http://localhost:8080/storefront> to access the application.
6. **Note :** The database credentials are hardcoded and there were no config files provided due to time constraint. The URL of the database is set to :  
jdbc:mysql://localhost:3306/storefront, the user is set to : dbuser and the password is set to : dbpass

## UML diagram of business layer



## ER Diagram



## Tables

- **Orders:** Stores the orders of each users
- **OrderProduct:** Store the list of products for each order
- **Users:** stores user information
- **Products:** stores product information
- **Carts:** stores cart information of users

## Relationships:

- **Users to Carts:**
  - One-to-Many (1:1). A user has 1 cart and a cart is linked to 1 user
- **Users to Orders:**
  - One-to-Many (1:M). A user can place multiple orders, but each order is linked to only one user.
- **Products to Carts:**
  - Many-to-One (M:1), Many products belong to 1 cart
- **Products to OrderProduct:**
  - One-to-Many (1:M). A product can be part of multiple order-product entries, representing different orders containing that product.
- **Orders to OrderProduct:**

- One-to-Many (1:M). An order can contain multiple products, but an order-product entry is linked to only one order.

## **Database dump**

- Dump file included with submission

## **User Passcode**

- Credentials file included with submission.
- File is also generated at  
../apache-tomcat-9.0.82\bin\data\credentials.json (Check console.log for exact directory)

```
Credentials file path is: C:\apache-tomcat-9.0.82\bin\data\credentials.json
```

## **User Manual**

Navigating the Application:

### **Signup:**

Users can create an account by inputting a passcode.

### **Login:**

User can authenticate by providing a passcode

### **Landing Page:**

Upon launching the application, you will arrive at the homepage. The homepage features a navigation bar (navbar) at the top of the page for easy navigation to different sections of the application.

### **Viewing Products:**

To browse the products available on the online storefront, click on the Products link in the navbar.

This will lead you to the products page where you can see a list of products available, along with images representing each product.

### **Viewing Product Details:**

If you are interested in a particular product and want to learn more about it, click on the View Details button associated with that product.

This will lead you to a page displaying detailed information about the selected product.

### **Adding Products to Cart:**

On the product details page, you have the option to add the product to your cart by clicking on the Add to Cart button.

### **Viewing Cart:**

To view the items in your cart, click on the Cart link in the navbar.

The cart page will display a list of all the products you have added to your cart, along with the price of each item and the total price of all the items in the cart. User can set quantity of the products or they can remove a product completely.

### **Creating Orders:**

Once the user has added the products to their cart, they can enter their shipping address and click on the Create Order button. Once an order is placed, the cart is automatically cleared out.

### **Viewing Orders:**

Users can view the orders they placed in the view orders button in the navbar. They can also view individual orders and see the list of products that were part of the order.

### **Shopping Flow:**

1. Start by browsing the products available on the online storefront by clicking on the Products link in the navbar.
2. Explore the products and click on View Details for any product you are interested in.
3. On the product details page, add the product to your cart by clicking on the Add to Cart button.
4. To review the items in your cart, click on the Cart link in the navbar.  
The cart page will show you all the products you have added, allowing you to review your selections before proceeding.
5. Enter a shipping address and click on the Create Order button to finalise the purchase, which clears the cart.
6. Check past purchases by clicking the View Orders button, where detailed histories and statuses of orders are accessible.

## **Staff User Manual**

Accessing Staff Functions:

### **Sign In:**

Start from the landing page which serves as the homepage of the application, featuring a navigation bar (navbar) at the top.

Click on the Authenticate as Staff link located in the navbar, which will redirect you to a login page.

Enter the password - "secret" in the provided fields and click on the Authenticate button to sign in.

### **Creating a New Product:**

Once signed in, navigate to the Products page by clicking on the Products link in the navbar. Click on the Create a New Product button, which will lead you to an empty user input form. Fill in the form fields with the product's name, description, price, vendor, SKU, and URL slug.

**Editing an Existing Product:**

From the Products page, find the product you wish to edit.

Click on the Edit button on the product tile, which will redirect you to a form.

This form is pre-filled with the existing data of the product. Make the necessary edits and submit the form to update the product information.

**Viewing All Orders:**

Staff can view all the orders placed in the system by clicking the view orders button. They can also view individual orders and see the list of products that were part of the order.

**Ship Order:**

Once an user places an order, staff has the option to input a tracking number to ship an order. Once inputted, a tracking number is assigned to the order and the order is shipped

**Download Product Catalogue:**

Staff can download the product catalogue which is a .json file that includes all products in the app

**Logging Out:**

To log out of your staff account, click on the Log Out link located in the navbar, at the same location where the Authenticate as Staff link was.

**Staff Workflow:**

1. Sign in to access staff functions by clicking on the Authenticate as Staff link in the navbar and entering your credentials.
2. Create new products or edit existing ones from the Products page, accessed via the navbar.
3. Fill in or edit the product information in the provided forms and submit to save the changes.
4. Process shipping for orders using Ship Order.
5. Download and manage the product catalogue as necessary.
6. Once done with your session, ensure to log out by clicking on the Log Out link in the navbar.

**Additional Work Outside Assignment's Scope (BONUS)**

None