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Live Session 02: Admin Dashboard Web Pages DB Structure for Admin

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**Develop the Web Pages in Angular
for Admin Dashboard**

You Already Know

Before we begin, let's recall what we have covered till now:

- Angular



- Cucumber



Angular

It is a platform and framework by Google used to create single-page web applications using HTML and TypeScript.

Cucumber

It is a testing tool that supports the BDD framework.



Project Planning with Agile

- Developed user stories for admin dashboard epic
- Developed web app for end user epic
- Planned sprints in JIRA

Develop Angular Project Structures

- Created a Web App Project for End User using Angular CLI

Sync the Projects with Git on GitHub

- Pushed the Angular Projects on GitHub using Git



A Day in the Life of a Full Stack Developer

After syncing Angular projects on Github, Bob wants to design, develop, and create a database structure for his web page.

Let me think about this. Which technologies should I use for these requirements?



A Day in the Life of a Full Stack Developer

After brainstorming a bit, Bob found a solution for his requirements.

Let me use HTML and CSS to design and develop web pages and MySQL to design the database structure and create tables inside the database.



In this lesson, we will learn how to design, develop, and create a database structure for web pages to help Bob complete his task effectively and quickly.

Learning Objectives

By the end of this lesson, you will be able to:

- 👁️ Develop the web page templates for admin dashboard
- 👁️ Develop the CSS for styling the web pages
- 👁️ Apply Angular component templates
- 👁️ Correlate the pages in Angular with routing



Learning Objectives

By the end of this lesson, you will be able to:

- 👁️ Design a database for your project in MySQL
- 👁️ Design a Web App Project for End-user using Angular CLI
- 👁️ Work with constraints
- 👁️ Create primary and foreign key relations within tables



Angular Component Templates

Web Page for Authentication Login Component

To begin, let's develop a login page for admin to sign in and enter the Dashboard for various management flows.

E-COMMERCE STORE
Admin Dashboard

Manage Dynamic Content For Your WebSite
An Optimal, Reliable and Dynamic Web Backend
Modern Secure Interface based on Google Cloud

Login

Email
eg: abc@example.com

Password

Submit

On clicking the submit button, the admin user will be validated and navigated to the dashboard.

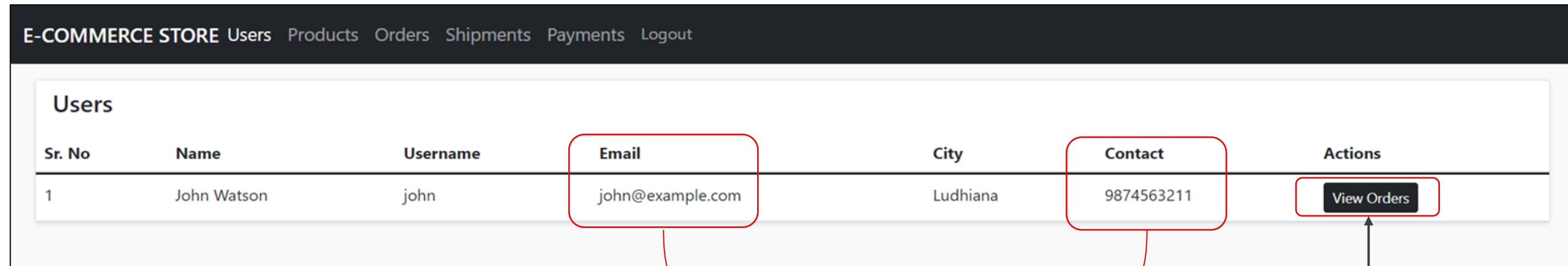
Web Page for Authentication Login Component

In the directory: src/app/pages/login/

Command	Use
login.component.css	CSS goes here to design the page and forms.
login.component.html	HTML Code is written in this template file.
login.component.ts	Logic will be written in typescript file.

Web Page for Users Component

On the Admin Dashboard, a navigation bar is designed to navigate between various modules. Users' component will have the list of all the users registered with the platform.



E-COMMERCE STORE Users Products Orders Shipments Payments Logout						
Users						
Sr. No	Name	Username	Email	City	Contact	Actions
1	John Watson	john	john@example.com	Ludhiana	9874563211	View Orders

The search can be implemented through phone number or email ID.

The view order button shows the order history of the corresponding user.

Web Page for Users Component

In the directory: src/app/pages/users/

Command	Use
users.component.css	CSS goes here to design the page and forms.
users.component.html	HTML Code is written in this template file.
users.component.ts	Logic will be written in typescript file.

Web Page for Products Component

To show the products along with categories, admin must add them from the dashboard.

This button takes the admin to a category management component.

This button opens a form to add products in the database.

E-COMMERCE STOREUsersProductsOrdersShipmentsPaymentsLogout

Products

Manage Product Categories

Add Product

Sr. No	Product Code	Product Name	Description	Price	Actions
1	PRD-ELE-1054	SanDisk SSD PLUS 1TB Internal SSD - SATA III 6 Gb/s	Easy upgrade for faster boot up, shutdown, application load and response	₹300	<div><div>View Images</div><div>View Details</div><div>Update</div><div>Delete</div></div>

Here, all the products are listed.

These buttons perform their corresponding action as their name suggests.

Web Page for Products Component

In the directory: src/app/pages/products/

Command	Use
products.component.css	CSS goes here to design the page and forms.
products.component.html	HTML Code is written in this template file.
products.component.ts	Logic will be written in typescript file.

Category Management Component

In this web page UI should be developed to manage the various categories for the products.

Add Category will open a modal to add the details in database.

E-COMMERCE STORE Users Products Orders Shipments Payments Logout				
Categories				
Sr. No	Name	Description	Status	Actions
1	Electronics	The field of electronics is a branch of physics and electrical engineering that deals with the emission, behaviour and effects of electrons using electronic devices.	Active	View Image Update Delete

This page lists all the categories, along with the action buttons to view, update, and delete the category.

Category Management Component

In the directory: src/app/pages/categories/

Command	Use
categories.component.css	CSS goes here to design the page and forms.
categories.component.html	HTML Code is written in this template file.
categories.component.ts	Logic will be written in typescript file.

Category Management Component: Add Category Modal

- Use NgbModal service to develop the modal and add the category details.
- Create the modal for Product Category Details in the directory `src/app/pages/modals/category.ts`

The screenshot displays an 'E-COMMERCE STORE' interface with a navigation bar (Users, Products, Orders, Shipments, Payments, Logout) and a 'Categories' table. A modal titled 'Product Category Details' is open, allowing for the addition of a new category. The modal includes a 'Title' field (filled with 'Electronics'), a 'Description' field (filled with a detailed text about electronics), a 'Select Image File' section with a 'Choose File' button and 'No file chosen' text, and a 'Status' section with 'Active' and 'In-Active' radio buttons. 'Cancel' and 'Save' buttons are at the bottom right of the modal. An orange callout box points to the modal with the text: 'In this form, all the details of the product category are added.'

Sr. No	Name	Description
1	Electronics	The field of electronics is a branch of physics and electrical engineering that deals with the emission, behaviour and effects of electrons using electronic devices.

Buttons: Add Category, Cancel, Save

Web Page for Product Component: Add Product Modal

On the Products Component Web Page, the Action Button is used to add the product in the database.



On clicking, it will open a modal, which typically is a UI in a dialog view.
Here, user can add the details of a product in a form.



User can also select the category from a dropdown to be linked to the product.



Here, user can associate as many image as they wish to link to the product and these images must be shown as a thumbnail that can be managed.

Web Page for Product Component: Add Product Modal

Given below is an image of the product update page:

E-COMMERCE STORE

Products

Sr. No	Product Code
1	PRD-ELE-1054

Products

Sr. No	Product Code
1	PRD-ELE-1054

Product Update

Product Name

SanDisk SSD PLUS 1TB Internal SSD - SATA III €

Product Category

Electronics

Price

300

Product status

Enable

Disable

Description

Easy upgrade for faster boot up, shutdown, application load and response

Product Images

1. https://m.media-amazon.com/images/I/71J4Q8zM72L_SX466_.jpg

Selected as Thumbnail Image

Selected

Remove

2. https://m.media-amazon.com/images/I/71J4Q8zM72L_SX679_.jpg

Select

Remove

3. https://m.media-amazon.com/images/I/71J4Q8zM72L_SX355_.jpg

Select

Remove

4. https://m.media-amazon.com/images/I/71J4Q8zM72L_SX522_.jpg

Select

Remove

5. https://m.media-amazon.com/images/I/71J4Q8zM72L_SX450_.jpg

Select

Remove

6. https://m.media-amazon.com/images/I/71J4Q8zM72L_SX425_.jpg

Select

Remove

7. https://m.media-amazon.com/images/I/71J4Q8zM72L_SX569_.jpg

Select

Remove

Add

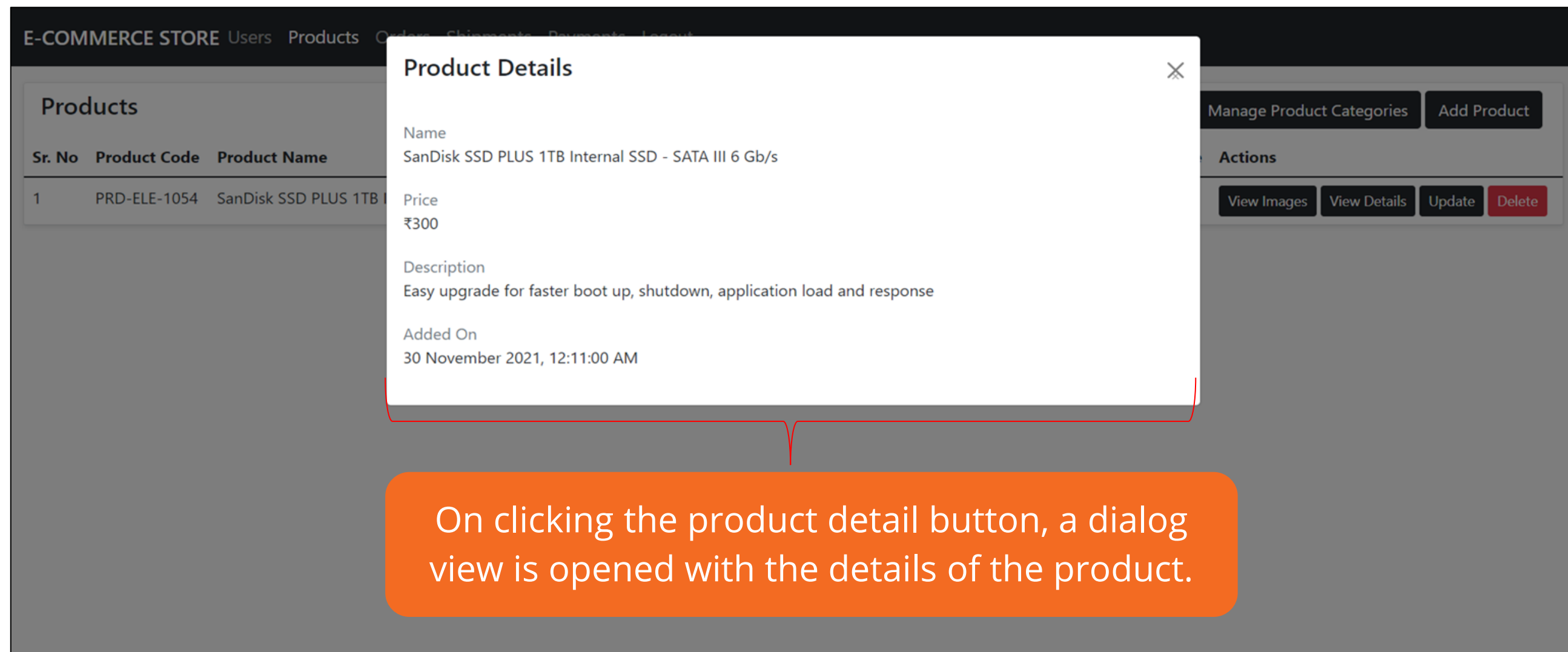
Cancel

Save

In this form all the images related to the product can be added.

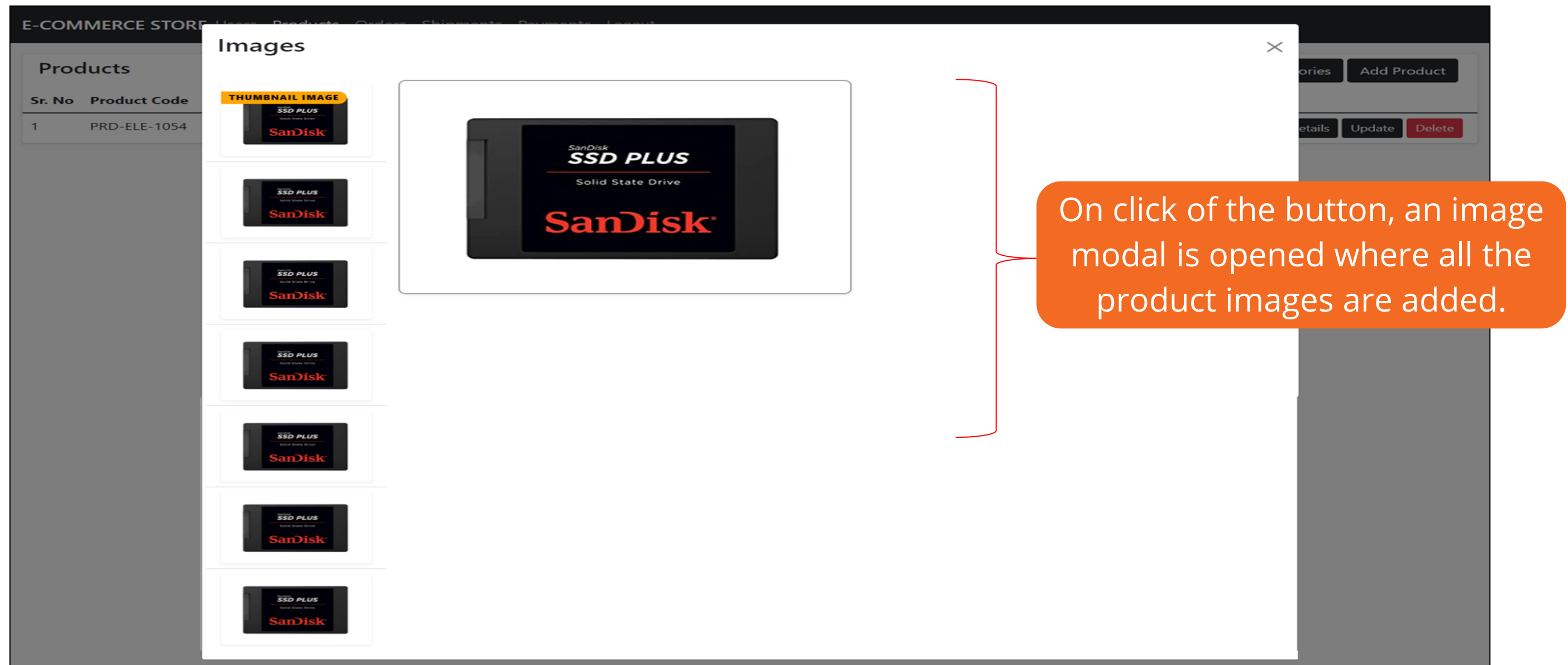
Web Page for Product Component: Product Details Modal

Create the modal for Adding Product Detail
In the directory: `src/app/pages/modals/products.ts`



Web Page for Product Component: Product Images Modal

An UI element is added as a button in the product component to see the product images.



Web Page for Orders Component: View Orders

In the End User Web App, users will place order from their account. The same list of orders will be displayed in the Admin Panel for various users.

E-COMMERCE STORE

[Users](#)[Products](#)[Orders](#)[Shipments](#)[Payments](#)[Logout](#)

Orders

Placed

Accepted

Delivered

Cancelled

Sr. No	Order Id	Order Placed	Name	Email	Contact	Total Amount	Actions
1	3456789345	03 December 2021	John Watson	john@example.com	9874563211	₹1,300	<div><div>View Order Details</div><div>Update Status</div><div>Delete</div></div>

In this form, the order status can be modified with the help of update status button.

Web Page for Orders Component: View Orders

In the directory: src/app/pages/orders/

Command	Use
orders.component.css	CSS goes here to design the page and forms.
orders.component.html	HTML Code is written in this template file.
orders.component.ts	Logic will be written in typescript file.

Web Page for Orders Component: View Products in an Order

An action button on the orders page is View Order Details.

The screenshot displays an 'E-COMMERCE STORE' interface with a navigation bar containing 'Users', 'Products', 'Orders', 'Shipments', 'Payments', and 'Logout'. The 'Orders' section is active, showing a table of orders. The first order is highlighted, and a 'View Order Details' button is circled in red. An arrow points from this button to a modal window titled 'Products' which lists the items in the order.

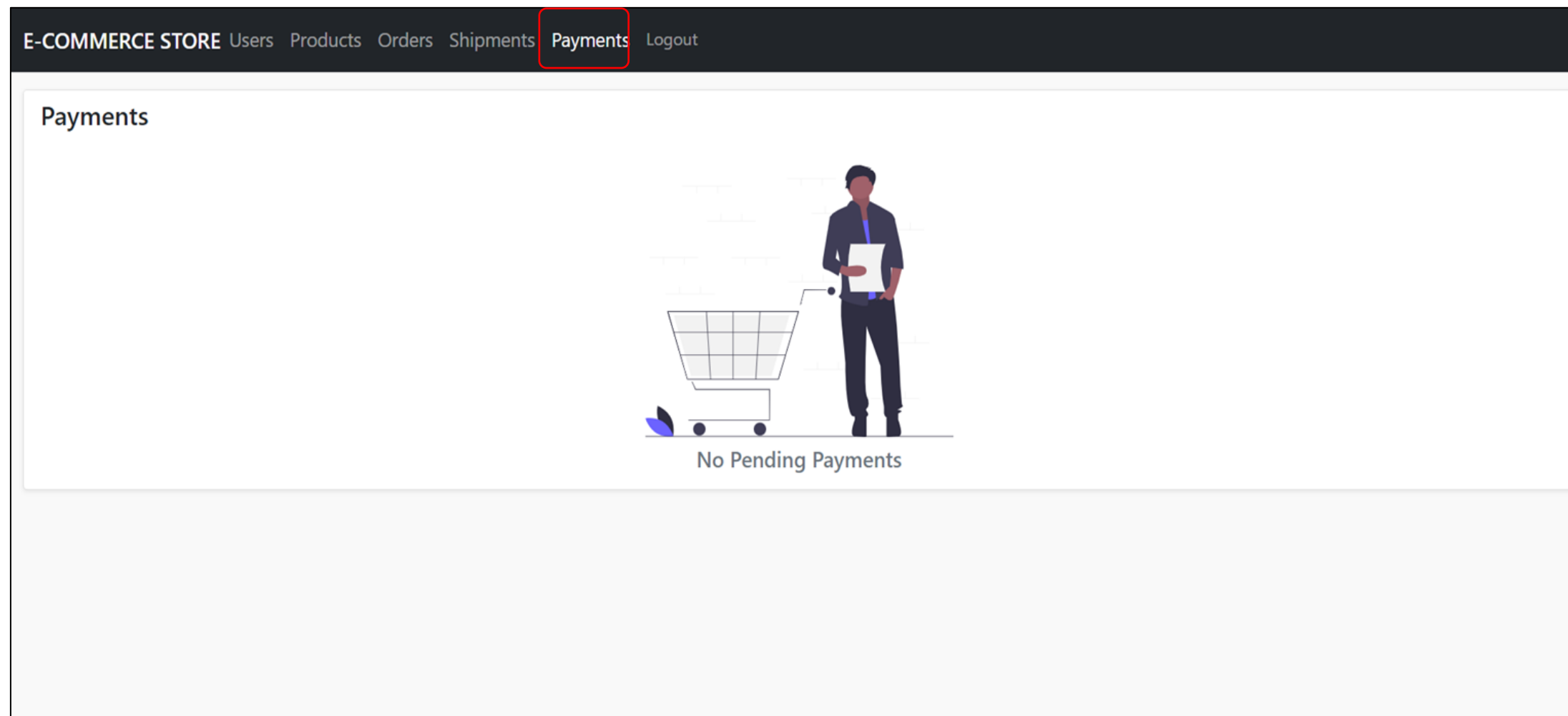
Sr. No	Order Id	Order Placed	Name	Email	Contact	Total Amount	Actions
1	3456789345	03 December 2021	John Watson	john@example.com	9874563211	₹1,300	View Order Details Update Status Delete

Name / Price	Qty.	Total Price
SanDisk SSD PLUS 1TB Internal SSD - SATA III 6 Gb/s	4	₹1,200
₹300		

By clicking on it, the details of an order, including the product list and total amount get displayed.

Web Page for Payments Component

Develop Payments Page to check the payment methods and status of the payments or transactions made by the End Users for the Orders.



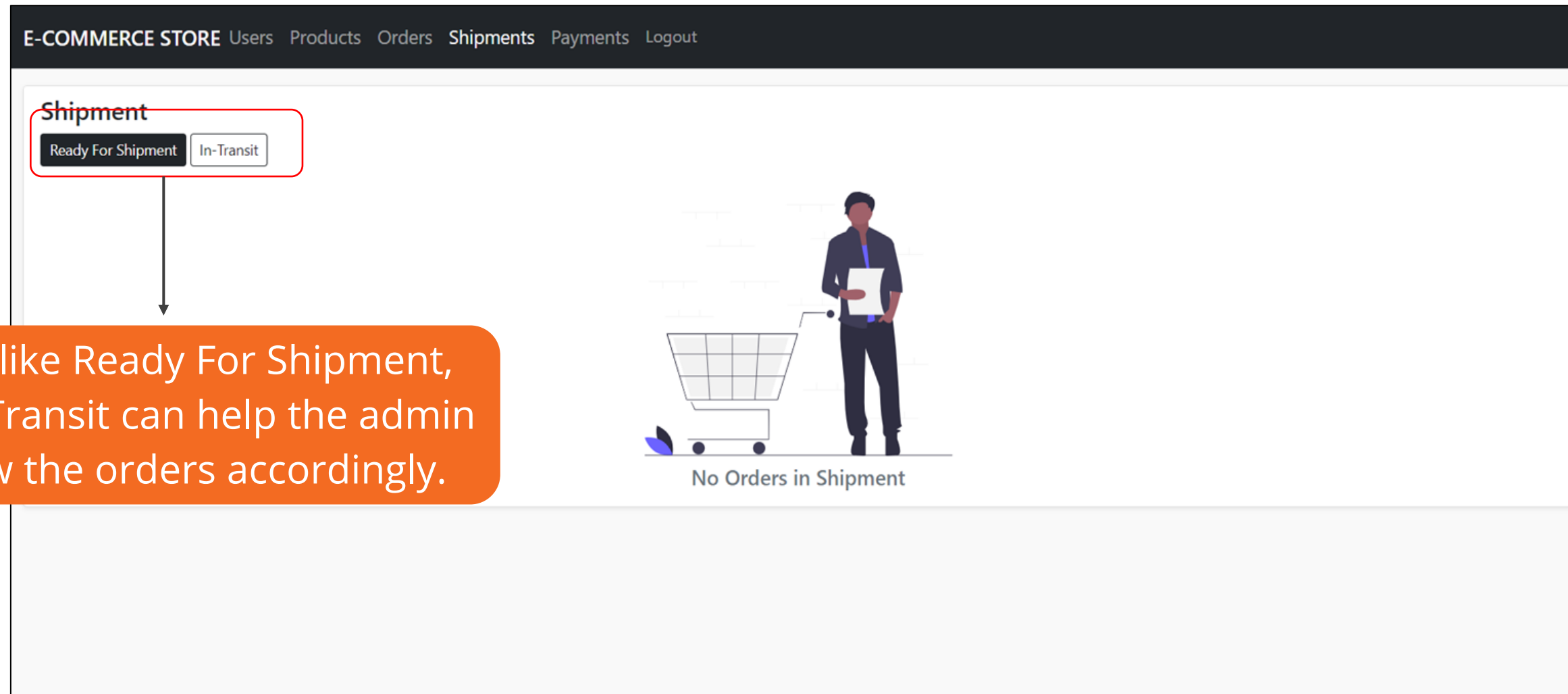
Web Page for Payments Component

In the directory: src/app/pages/payments/

Command	Use
payments.component.css	CSS goes here to design the page and forms.
payments.component.html	HTML Code is written in this template file.
payments.component.ts	Logic will be written in typescript file.

Web Page for Shipment Component

The shipments page helps the Admin to track the orders that are ready for shipment and in transit.



Web Page for Shipment Component

In the directory: src/app/pages/shipments/

Command	Use
shipments.component.css	CSS goes here to design the page and forms.
shipments.component.html	HTML Code is written in this template file.
shipments.component.ts	Logic will be written in typescript file.

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DB Structure for Admin

Creating Database

Creating Database in MySQL

In MySQL, CLI uses these commands to create and work with the database:

Create database e-commerce

This command creates the database e-commerce.

Use database e-commerce

This command changes the current working selection of the database to e-commerce.

Show tables

This command will list all the tables in the database. It will return an empty set if no table is available.

Creating Tables

Prerequisites

- Make sure the database is selected as e-commerce.
- User can execute the command to select db for e-commerce as:

```
use database ecommerce;
```


Generating Admin's Table for Login

In order to create a table for admin, use columns like admin Id, email, and password.

```
CREATE TABLE ADMINS
  adminId          INTEGER NOT NULL PRIMARY KEY
  AUTO_INCREMENT,
  email            VARCHAR(50) NOT NULL,
  password         VARCHAR(50) NOT NULL,
  fullName         VARCHAR(255) NOT NULL,
  loginType        INTEGER DEFAULT 1,
  addedOn          DATETIME DEFAULT CURRENT_TIMESTAMP
```

Generating User's Table

In order to create the table for users, use columns like user id, email, password, etc.

```
CREATE TABLE USERS (  
  userId          INTEGER NOT NULL PRIMARY KEY  
  AUTO_INCREMENT,  
  email           VARCHAR(50) NOT NULL,  
  password        VARCHAR(50) NOT NULL,  
  fullName        VARCHAR(255) NOT NULL,  
  street          VARCHAR(50) DEFAULT NULL,  
  city            VARCHAR(50) DEFAULT NULL,  
  state           VARCHAR(50) DEFAULT NULL,  
  country         VARCHAR(50) DEFAULT NULL,  
  pincode         INTEGER,  
  image           VARCHAR(1000),  
  contact         BIGINT,  
  addedOn         DATETIME DEFAULT CURRENT_TIMESTAMP
```

Generating Product Categories Table

In order to create a table for categories, use columns like category id, category Name, etc.

```
CREATE TABLE CATEGORIES (  
  categoryId          INTEGER NOT NULL PRIMARY KEY  
  AUTO_INCREMENT,  
  categoryName        VARCHAR(255) NOT NULL,  
  categoryDescription VARCHAR(255),  
  categoryImageUrl    VARCHAR(500),  
  active              INTEGER DEFAULT 0,  
  addedOn             DATETIME DEFAULT CURRENT_TIMESTAMP  
);
```

Generating Product's Table

In order to create table for the product, use columns like product id, product title, etc.

```
CREATE TABLE PRODUCTS(  
  productId          INTEGER NOT NULL PRIMARY KEY AUTO_INCREMENT,  
  productTitle       VARCHAR(500) NOT NULL,  
  productDescription VARCHAR(500) NOT NULL,  
  productCode        VARCHAR(500) NOT NULL,  
  categoryId         INTEGER,  
  images             VARCHAR(1000),  
  thumbnailImage     INTEGER DEFAULT 0,  
  price              INTEGER DEFAULT 0,  
  addedOn            DATETIME DEFAULT CURRENT_TIMESTAMP,  
  rating             INTEGER NOT NULL,  
  FOREIGN KEY (categoryId) REFERENCES CATEGORIES(categoryId)  
);
```

Generating Orders' Table

In order to create table for orders, use columns like order id, order date, etc.

```
CREATE TABLE ORDERS (  
  orderId          INTEGER NOT NULL PRIMARY KEY,  
  orderDate        DATETIME DEFAULT CURRENT_TIMESTAMP,  
  orderStatus      VARCHAR(50) NOT NULL,  
  totalItems       INTEGER NOT NULL,  
  itemsSubTotal    INTEGER NOT NULL,  
  shipmentCharges  INTEGER NOT NULL,  
  totalAmount      INTEGER NOT NULL,  
  paymentStatus    INTEGER DEFAULT 0,  
  paymentStatusTitle VARCHAR(255),  
  paymentMethod    INTEGER,  
  paymentMethodTitle VARCHAR(255) NOT NULL,  
  userId           INTEGER NOT NULL,  
  name             VARCHAR(255) NOT NULL,  
  email            VARCHAR(255) NOT NULL,  
  contact          BIGINT NOT NULL,  
  address          VARCHAR(500) NOT NULL,  
  FOREIGN KEY (userId) REFERENCES USERS(userId)  
);
```

Generating Shipments' Table

In order to create table for shipments, use columns like shipment id, order id, etc.

```
CREATE TABLE SHIPMENTS (  
  shipmentId      INTEGER NOT NULL PRIMARY KEY AUTO_INCREMENT,  
  orderId         INTEGER,  
  shipmentStatus  INTEGER,  
  shipmentTitle   VARCHAR(255),  
  shipmentDate    DATETIME DEFAULT CURRENT_TIMESTAMP,  
  expectedDeliveryDate DATETIME,  
  shipmentMethod  VARCHAR(255),  
  shipmentCompany VARCHAR(255),  
  FOREIGN KEY (orderId) REFERENCES ORDERS (orderId)  
);
```

Generating Order Items' Table

In order to create table for order items, use columns like order item id, order id, etc.

```
CREATE TABLE ORDERITEMS (  
  orderItemId      INTEGER NOT NULL PRIMARY KEY AUTO_INCREMENT,  
  orderId          INTEGER,  
  productId        INTEGER,  
  productCode      VARCHAR(255) NOT NULL,  
  productImg       VARCHAR(255) NOT NULL,  
  productTitle     VARCHAR(255) NOT NULL,  
  productDescription VARCHAR(255) NOT NULL,  
  productCategory  VARCHAR(255) NOT NULL,  
  price            INTEGER NOT NULL,  
  quantity         INTEGER NOT NULL,  
  totalPrice       INTEGER NOT NULL,  
  FOREIGN KEY (orderId) REFERENCES ORDERS (orderId),  
  FOREIGN KEY (productId) REFERENCES PRODUCTS (productId)  
);
```


Key Takeaways

- HTML and CSS are used for the development of Admin Dashboard.
- Angular templates are used for the web page development.
- Various Angular CLI commands such as ng serve are used to view the web app.
- UI is developed on the web page for admin users to manage the various categories for the products.



Key Takeaways

- The Action Button in the products component web page adds the product to the database.
- In the end-user web app, users can place an order from their account, and the same list of orders is displayed in the admin panel for updating order status by an admin user.
- The shipments page helps the Admin track the orders that are ready for shipment and in transit.
- Database is selected as e-commerce to create tables.



Key Takeaways

- In MySQL, CLI uses commands to create and work with the database.
- The **create database e-commerce** command is used to create e-commerce database.
- The **use database e-commerce** command is used to select the e-commerce database as working database.
- The **show tables** command is used to view the list of all the tables in the database.



Before the Next Class

Since you have completed this session successfully, for our next discussion you should:

- Review the OOPS with Java
- Review the JDBC Fundamentals
- Revise Servlet API
- Review how to use HTTP Client API in Angular
- Explore and work with JSON
- Check working conditions of Eclipse EE edition



What's Next?

Now, we have finished our DB structure for the Admin dashboard. In our next discussion we will:

- Design and develop web pages for the end users web app project
- Work on Authentication Page, Users Profile Page, Orders Page, and others to create the UI for the project
- Work on deciding the various attributes for the tables in MySQL
- Create the structure of tables in MySQL which will store data from the web pages
- Create dynamic web project using Enterprise Edition of Java in Eclipse
- Create Servlets and JDBC connections

