

A PROJECT REPORT

On

E-SHOPPING

(WEB BASE APPLICATION)

*Submitted in Partial fulfilment of the Requirement for The Award of
Post Graduate Diploma in Advanced Computing (PG-eDAC)*

Under the Guidance of

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Working of Project

1. Home

- Home contains the cards for every product displaying all the information (like product name, price, description, etc.) it gets from database by implicitly making axios request to API.
- Along with name and logo, navigation bar also contains badge which displays the quantity of product in the cart and by clicking on it user will be directed to the cart component.

2. Cart

- When the user comes to the cart here it shows all the products user has wished to purchase from home page, along with that information user also has the option to increase or decrease the quantity of every product in the cart and even remove the product completely.
- Cart page also displays the total amount to be paid on the purchase, along with that cart has two buttons i.e. empty cart and checkout.

3. SignIn/SignUp

- For registering and authentication of user using database.

4. Checkout

Checkout consists of the following:

1. **Address Form:** Here the user will fill up the shipping address details for the delivery of product.
2. **Review of Order:** After filling the address form on submitting, user will be directed to review of order where all the details of order will come for final assurance before payment.
3. **Payment Gateway:** After filling the card details payment process will proceed, after which all the order details will be saved to database and orderid will be generated.
4. **Confirmation page:** This page will display the confirmation message of the user order along with ordered items which can be used for further references. This page will also contain 'continue shopping' button which will redirect user to the home page and refresh the cart to give a fresh start to the user.

Working of Cart

STARTING FROM PRESENTATION

1. Cart component shows all the products user has wished to purchase from home.
2. User also has the option to increase or decrease the quantity of every product in the cart .
3. Remove single or all the products completely and make the cart empty.

HOW IT REACHES SERVICE LAYER

1. For every modification above, axios requests are made to the service layer through api for which it modifies the changes and responses with updated details of cart.
2. For all this to happen service layer functions are provided with *product id and its quantity* which has to be provided with the request.
3. Spring boot application which is running on port 7777 will listen to this request through the Rest controller which will call the specific service layer function with the particular request key.
4. Service function will make the required changes to database and then return updated data to the controller, which will send a response message object to the axios request as JSON string which will contain all the required updated data .

HOW IT REACHES DAO LAYER

1. Service class uses the interface for queries provided by JPA repositoryclasses.
2. We have Entity classes for these queries named accordingly where we have mapped the class according to database.
3. A query is made to update the cart table in database which takes product id and quantity as input.
4. On the success of first query second query is made to return the selected data from product and cart table from the database corresponding to the product ids present in the cart table.

STRUGGLING POINT

1. One of the biggest challenges faced during the development of this software project was implementing Spring Security and JWT for the application.
2. A lot of time were invested in learning and implementing Spring Security and JWT as it contains many sub-contents like
 - filters chain
 - password-encoding schema
 - configuration
 - JWT token filter.
3. This actually affected the flow of the application and to adapt these changes some new components were also created and added to the project for convenience.

Although all the requirements set out for the e-shopping web application have been met, there are still areas to improve on.

Also, other online payment methods like online bank transfers, mobile payment can be implemented for the application.

LEARNINGS FROM PROJECT :

1. Spring , Spring Boot , Hibernate, Spring Security JWT
2. How dependency injection works in spring
3. Usage of Annotations in SpringBoot
4. React architecture, Hooks, Data Binding , Event Binding.
5. Service Injection in Components in React Project.
6. Using HTML 5 , CSS, Material UI for designing the Application
7. Using Postman App for Integration Testing with http Api.
8. Creating and Using Database MySQL.