Java-FLP project – *CapStore* (E-commerce - application)

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APPROACH AND EXECUTION PROCESS

APPROACH

The whole CapStore project will be divided into many modules (35 – 45 modules) and each participant of Java-FLP will work on an individual module.   Everyone will share a common database. The architecture and package structure (nomenclature) must be the same for everyone. Once the individual functionality is realized, it will be integrated in one system and upon successful integration, it will be deployed for project evaluation.

PROCESS   (DAY WISE MILESTONES)

Day 1:-

- ➢ Project mentor will brief the associates about the different modules, and will assign each associate a unique module (as every associate will be working on a unique module)
- ➢ Associates will come up with data model (since everyone will be using only one database); the data model will be reviewed by mentor(s)
- ➢ So on day one - Module distribution and final DB model should be decided

Day 2:-

- ➢ The Associates will create a user-story (a low level requirement document, in which they will mention - the functionality they are going to work on and on how the end user will use it(all the constraints and exceptions will be there) This will be a one or two page document. It will send a user-story template for better understanding.
- ➢ We will provide the architecture; and the associates need to understand it, and run a dummy flow to ensure that they have understood the above said architecture and are able to use it
- ➢ So the day target will be - ensuring the understanding of the functionality and architecture

Day 3:-

- ➢ All associates will present a white board presentation to the mentor(s) and the whole batch. Here each associate will describe - what he/she is going to build and how. Which all tables (DB) are going to be affected and what dummy data will he/she be using etc. Basic idea of this exercise is to ensure that - everyone (developer, team mates and mentors) are on the same page in terms of requirement and approach. Here the mentor may prevent any future mistake that might come out of misunderstanding of requirement or out of wrong approach.
- ➢ UI (layout, color coding, look and feel etc) will be discussed on this day only
- ➢ Use Spring boot rest controller to distribute data.
- ➢ One of the possible findings of this discussion may be some changes in the DB. So final database creation will be last task of the day.
- ➢ Associate will send final draft of their individual user story to mentor(s) for review.

Day 4, 5:-

- ➢ By day 3, the DB model (database), page layout, HTML, architecture (SpringBootMVC), package structure is ready. Now the associates will create dummy data in database and will start real work on their respective modules.

Day 6, 7, 8:- Integration and testing and Deployments and UAT by mentor(s)

Day 9:- Project Evaluation

A BRIEF ON CAPSTORE

ABOUT CAPSTORE

CapStore is a web based e-commerce website that allows users to buy or sell products. Users can view products from different categories and buy them .The user will be able to see products of similar category, sort them, compare them etc

This site gives a feel of already established e-commerce websites like Flipkart, Amazon, ebay etc.; with aim to enable employees buy goods online while sitting in office or from home i.e irrespective of their locations.

CapStore also allows users to sell their products, they need to register on to the website and need to be authorized by the admin of Capstore. Capstore also has the facility to add third party merchants.

Capstore will be a website for Capgemini employees. To buy a product, customer has to select the product and add to his cart, customer can add or remove items in cart at anytime. In the end an invoice will be generated, The Customer has options of buying product either through CashOnDelivery or through online payments. Customer has a facility to return the products and can also give a review on them.

Cap Store considers the sales aspect of e-business. It also consists of the exchange of data to facilitate the financing and payment aspects of business transactions. This is an effective and efficient way of communicating within an organization and one of the most effective and useful ways of conducting business.

Macro level Operations/offerings:

1. Signup, Login or Logout

2. Buy/sell products

3. Give review on products and return them.

4. Merchant- there can be two types of merchants, direct merchant and third party merchant. New merchants can be added or removed by admin. Merchants can add or remove products on CapStore.

5. Items can be added into cart and removed from the cart, after the final submission an invoice will be generated.

6. Customer can pay by different payment options.

Enhancements for Future:-

1. Chat Facility.
2. Customized Advertisements and discount notification
3. SMS based notification

MODULE LISTS

1	**sign up & activation**	Signup or registration - here non existing user of CapStore will register or sign up for it; the email id will be user's login id. An activation mail will be sent to the user (to authenticate if user's email id is valid) and on activation only Merchant will be able to access his/her account and Customer can place order.
2	**Login/Logout/session**	User will login into the system, session will be established and can logout
3	**Admin page/Admin Profile**	this page will be first page for Administrator of CapStore.Admin can view all Customer details ,Merchant Details and the complete inventory .
5	**Merchant Page/Merchant Profile**	The First Page of Merchant where there will be a control over inventory.Merchant can check orders and give response to admin, add product , remove product , put new promos and discount rates.
6	**Customer Page/Customer Profile**	Here Customer can check its ordered items ,wishlist and status of delivery.Customer can place feedback about products or vendors. Customer can change his profile information.
7	**Password encryption**	Encrypted password will be placed in database.
8	**Change password**	User may change his/her CapStore account password. The new password should not be same as old one, and should also fulfill all the password related constraints of signup time.
9	**Forget password**	an email containing the user's password (decrypted) will be sent to the user
10	**validation of user**	Admin will validate merchant first and only then Merchant will be able to login into Merchant Page. Validation of customer will be through email. Only after validation any user can proceed further with their tasks.
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	Email Service	To verify users, send invitation to customers and merchant; send new schemes, promos to customers and merchants. It can be used by admin only .merchants will send their response to admin and admin will forward it to user via email.
12	**Managing Inventory**	Merchant can manage their own inventory space of CapStore while Admin can manage full inventory.Merchant and Admin can add or remove items from inventory, Add or Remove Categories, Update Stock etc.
13	**Managing Merchant**	Admin can add or remove a merchant.admin will send invitation to other merchant which are not the current supplier of products for CapStore.
14	**Managing Third party Merchants**	Admin can add third party merchants.Store will have an interface to the inventory of third party merchant.
15	**Feedbacks of products**	Customer can give feedback on a product and it will be present on product's home page.
16	**Feedbacks common**	A customer can send feedback to admin. It can be for direct merchants or for Third party merchants.Admin will forward the feedbacks to merchants and also redirect their responses to customers.
17	**Search**	Serarch will be available on all pages of CapStore with permissions.Admin can search any thing related with CapStore like it can see any Customer or Merchant's details ,all availabel items in inventory while the Customer can search about Products and brands .it can be Category wise, name wise or type. Merchant can search in its own inventory only.
18	**Image Upload**	Admin and Merchant can upload images of products and banners .
19	**Product's images**	Images can be zoomed and will be displayed in proper slideshow.
20	**Discount, Promos**	Admin and Merchant can put up promos and discount, it can be on individual products or for category of products or on some minimum amount & It will be for a limited time period.

21	**Managing Cart**	Admin can set some minimum cost of purchase .Customer can add or remove items to the cart
22	**Generate Coupons**	Admin will generate coupons and email it to the Customers. These Coupons will be valid for a minimum time period and will have unique code
23	**Chat**	Customers can interact with CustomerCare representatives and can give live feedbacks.Merchant can also Chat with representatives. Admin can chat to both Customer and Merchant.
24	**Business Analysis**	Admin can generate buiseness anlyasis at the end of some time period. It can check dispatch report of particular product ,Category of products or products from a particular merchant
25	**Sorting Products**	A customer should be able to view products in a given range of price,most viewed ,best seller and ascending and descending order of price.
26	**CapStore Homepage**	This page will have menu to select items based on category .and will contain latest promos, discount and items. After Selecting category it will show list of items . This page will have option for sorting and selecting items .
27	**Product Page**	This page will have details about a particular product. It will show catalog for that product. This page will also show the feedback of customers on that product. It will show list of similar type of product on this page.
28	**WishList**	Customer can add items to its wishlist and later on can see it and buy items from it.
29	**Similar Products**	Customer can see similar type of products on product page. This wiil be based on category and type of product.
30	**Rating**	Customer can rate a product out of 5 stars, based on that an average rating will be given to the products. Based on products average rating merchant will be rated.
31	**Return Goods**	Customer can return sold products.it will be updated in the inventory. In case of third party merchant it will returned directly through third party interface.

32	**Refund money**	A user can anytime return sold products and after verification of products by admin, money will be refunded to the customer
33	**Generate Invoice**	after final submission of Cart , invoice wil be generated which will contain details about selected items and their price
34	**Apply discount**	if discount is on products the discounted price will be calculated and reflected on invoice .
35	**Apply Coupons**	A Cutomer can apply coupons and get discount on the final bill.
36	**Getting Shipping details**	Placing on order will take all the shiping details of customer and will verify the customer through email.
37	**Placing Order**	placing the order will check availability of product at the time of purchse. After successfully placing the order the inventory will be updated .
38	**delivering Products**	After successfully placing an order product will be deliverd to the customer and inventory will be updated.
39	**Invite Friend& Get discount(Optional)**	A customer can send invitation to its friends and can get discount.
40	**Sending New Promos & list of new items**	Admin will send new attaractions of Capstore to the customer.
41	**Checking, Updating Status of delivery**	Admin will update the status of delivery of products.Customer can check status of delivery
42	**Getting transaction details.**	Customer can buy any item via any mode of purchase i.e via online banking or through credit/debit card or through cash on delivery.
43	**Transaction Processing**	Getting money from user's account and updating the revenue of CapStore.

44	**Crach Recovery**	The items in the cart of user will be available unless the user remove those items or purchase them. At any time user can see all the products in the cart
45	**Integration**	Integretion of admin page ,Customer Page, Merchant Page

TECHNOLOGY AND ARCHITECTURE

TECHNICAL SPECIFICATIONS

1. Software Requirement:

- JDK 10
- Spring Boot 2.x
- My SQL 5.x
- SQL Yog 8.5
- Spring Tool Suite 3.9.x
- Spring Boot Data
- Spring Boot RestController
- JSP – FrontEnd
- Junit - Unit testing
- User Stories by using Gherkin
- Cucumber StepDef
- Selenium – Integration testing
- Jenking – Build Server
- SonarQube – Code Quality
- Git - Source Code Repository
- Postman

2. BDD Approach:

- Use BDD approach throughout your application.
- From day one Agile approach has to be implemented. Daily scrum call and spring planning, sprint meeting should be encouraged by mentor.

3. System Architeture:

Two API need to be design, one will get data from server (b) and another API will project the data using MVC(a).

    a. **Spring Boot MVC – Frontend using JSP**

    b. **Spring Boot – RestController**

a.   SpringBoot MVC with Frontend JSP

b. SpringBoot Rest API