PROJECT REPORT

SHOP FOR HOME
GROUP-8
JAVA AWS C3

PROJECT ASSOCIATES

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ACKNOWLEDGEMENT

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Finally, we would also like to thank our family, friends and seniors for their constant support, trust and valuable remarks that directly or indirectly made the project a whole lot better andhelped us reach where we are.

OVERALL DESCRIPTION

Home decor shop is aimed towards the vendors who want to reach out to the maximum cross- section of customer and common people who can be potential customer. This project envisages bridging the gap between the seller, the retailer and the customer. OFS should be user- friendly, 'quick to learn' and reliable software for the above purpose. OFS is intended to be a stand-alone product and should not depend on the availability of other software. It should run on both UNIX and Windows based platform

USER CLASSES AND CHARACTERISTICS

The user should be familiar with the Shopping Mall related terminology like Shopping cart/Checking out/Transaction etc.
The user should be familiar with the Internet**.**

The product will be operating in windows environment. Home décor online shop system is a website and shall operate in all famous browsers, for a model we are talking Microsoft Internet Explorer, Google Chrome and Mozilla Firefox. Also, it will be compatible with the IE 6.0. Most of the features will be compatible with the Mozilla Firefox and Opera 7.0 or higher version. The only requirement to use this online product would be the internet connection. The hardware configuration includes Hard Disk: 40GB, Monitor: 15-inch Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor etc**.**

An E-commerce website that allows people to buy and sell physical goods,services, and digital products over the internet rather than at a brick-and-mortar location. Through an e-commerce website, a business can process orders, accept payments, manage shippingand logistics, and provide customer service.

User-Friendly Design

Perhaps the most important feature customers want in an ecommercesite is a good user experience. If your customers can't find their way around your website or they struggle to find what they're looking for, they will likely move swiftly on to one of the many other online retailers. Utilize ecommerce UX best practices. Prioritize customer experience by: Creating a simple, straightforward, high-quality homepage. Including a search bar. Clearly listing category pages in the navigation bar. Focusing on creating a responsive website. 14 Modern Website Design Trendsfor 2022

Mobile-Friendly Features

In the modern marketplace, ecommerce consumers are increasingly reliant on their mobile devices. According to Sale Cycle, mobile devices were used in 56%of all online purchases in 2020. In other words, most customers want to browse online stores on their phones, so including mobile optimization in your ecommerce website design is vital. Ensure your web design is automatically modified for the screen size and shape of phones to increase your conversion rate and keep customers happy.

Multiple Payment Options

Shopping cart abandonment is often a big issue for online retailers. To improve your chance of sealing the deal in the final checkout process on your website, be sure to make the purchasing stage as easy as possible for your customers by offering multiple online payment methods in the shopping cart. In addition to offering debit and credit card options, consider adding options for payment providers like PayPal or Stripe. You could also add plugins that have a buy now, pay later functionality to encourage customers to press the "purchase" button.

24/7 Customer Service

A big part of a successful customer experience is providing helpful, accessible customer service. According to Microsoft, 90% of Americans consider customer service an important feature when deciding whether or not to purchase from a company. Include a 24/7 customer service chatbot as one of your ecommerce websites features to address customer needs at any time. Plugins like Zendesk or Live Person make it easy for you to add this feature to your website for a small fee.

like to feel that they're getting a good deal and being treated differently from other customers. Offer personalized deals, offers, and other user features to give them this type of attractive, customized experience. Offer user accounts where customers can access loyalty pricing offers, their personalized Wishlist, and account history. You can also use an ecommerce platform automated emailing system to send targeted special offers to loyal customers.

Extensive Product Information

Shopping online has become extremely common, but many consumers still feel hesitant about making online purchases — especially from smaller brands that they may be unfamiliar with. A big disadvantage of online shopping for consumers is that they are unable to see or try the product before making a purchase. In order to convince your customers that your product is high-quality and worth their money, be sure to offer as much product information as possible. On your product pages, include detailed product descriptions that offer information about size, material, color, ingredients, and place of origin. Offer high-quality product photography that show the product from every angle. For clothing, be sure to include images of a model wearing the item.

A Proportioning of Requirements

As stated by the customer, security is not a concern of this project. As such, it is beyond thescope of this system to encrypt personal user data, encrypt credit card information, prevent unauthorized login attempts, or any other concern of this nature. Additionally, the system isnot responsible for the following:

Verifying that credit card information is valid

Verifying the email address provided by a user

Storing additional information about a product beyond simply the category and price • Allowing users to edit their account details (username, password, mailing address, etc)

Allowing customers to order multiple copies of product in a single order

Providing individual product description

Allowing the Admin to update login credentials or other information about the Admin.

SPECIFIC REQUIREMENTS

FUNCTIONAL REQUIREMENTS

As a user I should be able to login, Logout and Register into the application.
As a user I should be able to see the products in different categories.
As a user I should be able to sort the products.
As a user I should be able to add the products into the shopping cart.
As a user I should be able to increase or decrease the quantity added in the cart.
As a user I should be able to add "n" number of products in the cart.
As a user I should be able to get the Wish list option where I can add those productswhich I want but don't want to order now.
As a user I should get different discount coupons.

As an Admin I should be able to login, Logout and Register into the application.
As an Admin I should be able to perform CRUD on Users.
As an Admin I should be able to Perform CRUD on the products.
As an Admin I should be able to get bulk upload option to upload a csv for productsdetails
As an Admin I should be able to get the stocks.
As an Admin I should be able to mail if any stock is less than10.
As an Admin I should be able to get the sales report of a specific duration.
As an Admin I should be able to set the discount coupons for the specific set of users

SOFTWARE REQUIREMENTS:

The functional requirements or the overall description documents include the product perspective and features, operating system and operating environment, graphics requirements, design constraints and user documentation.
The appropriation of requirements and implementation constraints gives the general overview of the project in regards to what the areas of strength and deficit are and how totackle them.

Technologies	**Angular, Spring Boot, MySQL**
Languages	**Type Script, Java, SQL Queries**
IDE	**STS, Vs code, MySQL**
Operating System	**Windows 10/11 , Linux, MacOSX or later.**

HARDWARE REQUIREMENTS:

Minimum hardware requirements are very dependent on the

particular software being developed by a given Enthought Python/ VS Code user. Applications that need to store large arrays/objects in memory will require more RAM, whereas applications that need to perform numerous calculations or tasks more quickly will require a faster processor.

Processor	**Intel or AMD dual core x86processor.**
Ram	**8 GB or above.**
Hard disk	**500 MB of free disk space ormore.**

ARCHITECTURE

Angular Architecture:
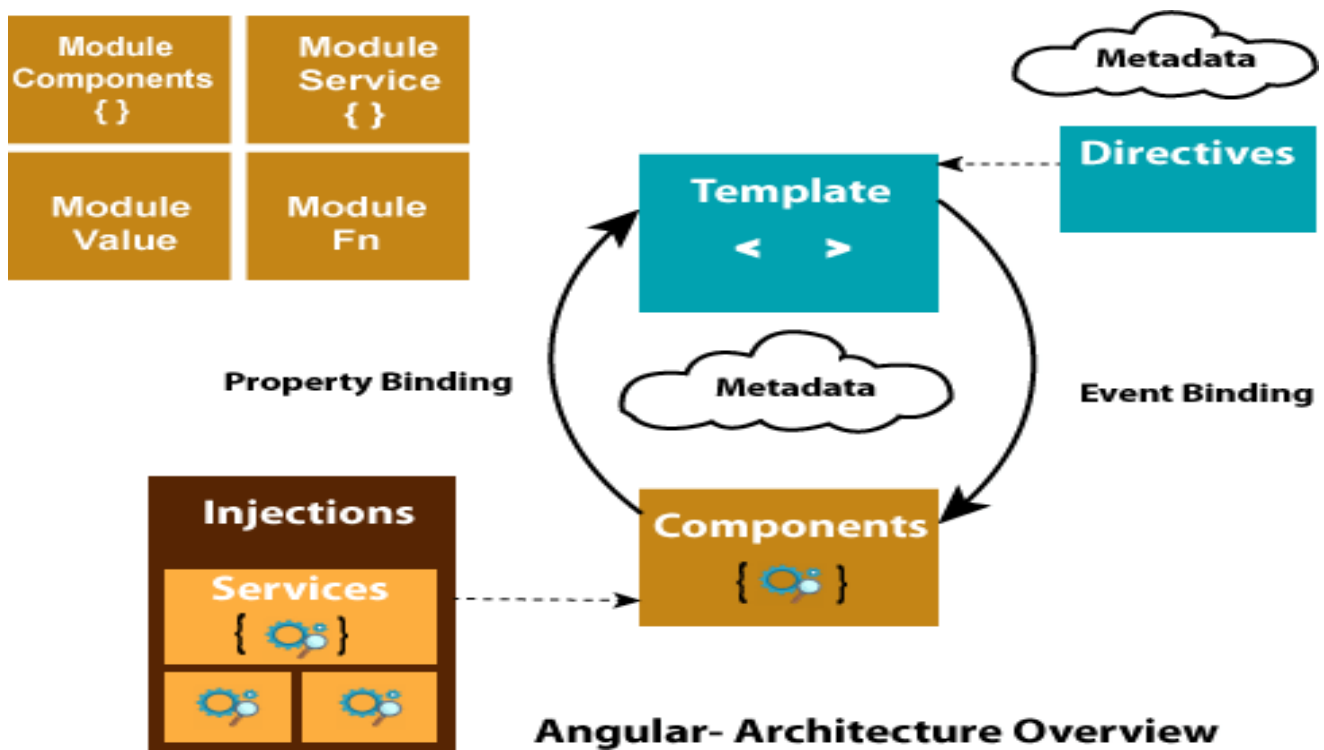
Fig. 3.1 Angular Architecture

There are main eight blocks of Angular.

- Module
- Component
- Metadata
- Template
- Data Binding
- Service
- Directive
- Dependency Injection

Spring Boot Architecture:

Spring Boot flow architecture
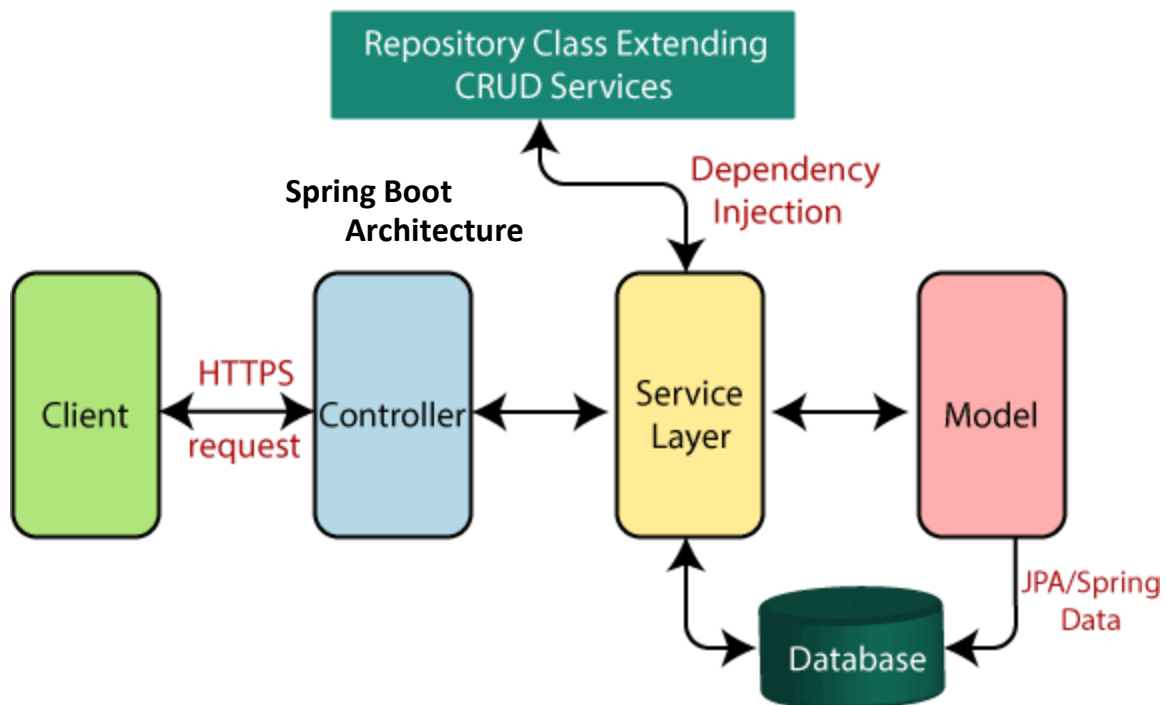
The spring boot consists of the following four layers:

- Presentation Layer – Authentication & Json Translation
- Business Layer – Business Logic, Validation & Authorization
- Persistence Layer – Storage Logic
- Database Layer – Actual Database

Micro Services Architecture
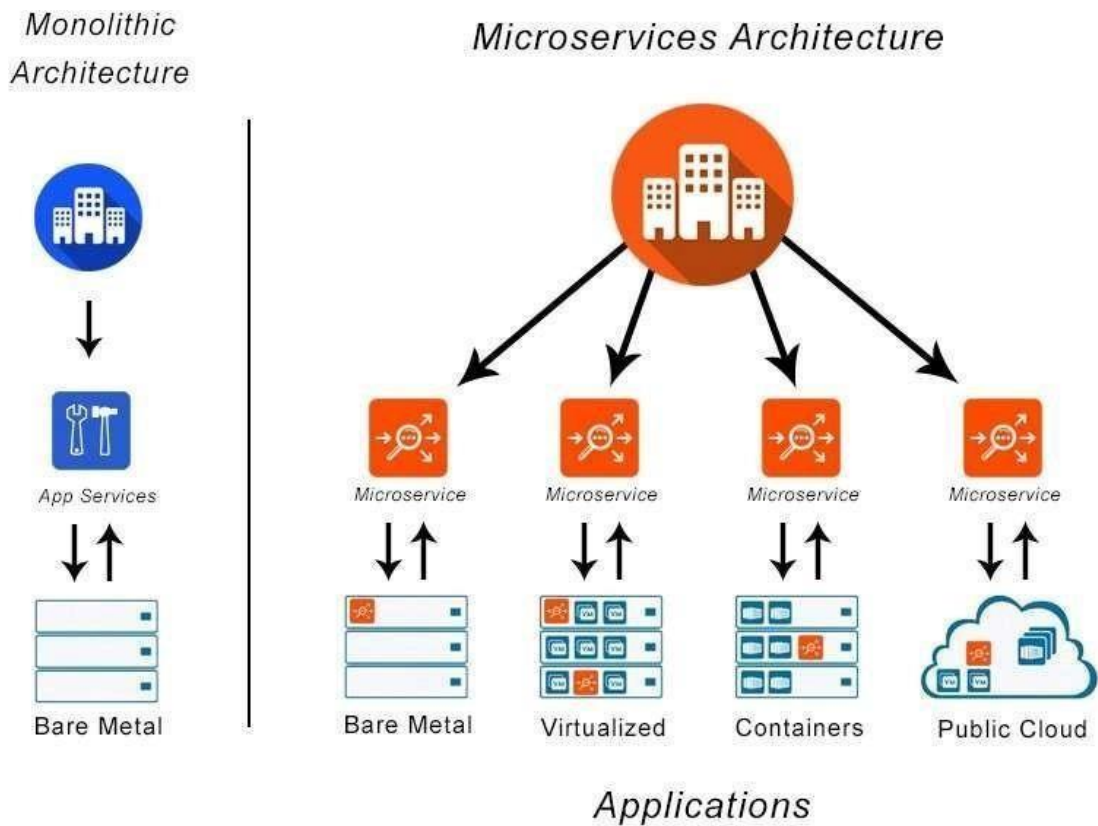
Fig 3.3 Microservices Architecture

Typically, microservices are used to speed up application development. Microservices architectures built using Java are common, especially Spring Boot ones. It's also common to compare microservices versus service-oriented architecture. Both have the same objective, which is to break up monolithic applications into smaller components, but they have different approaches

Project Architecture
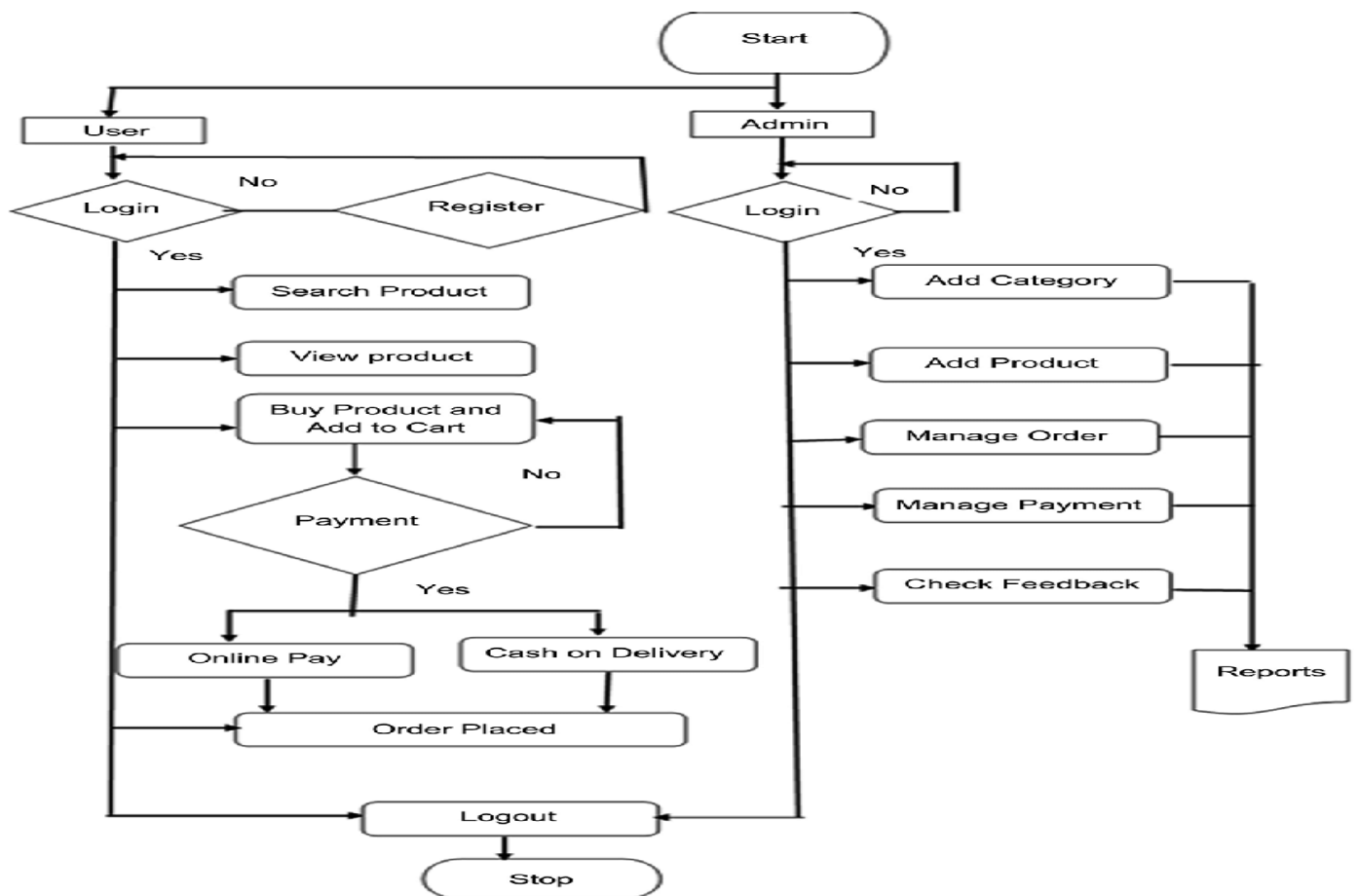
Fig 3.4 Project Architecture

API Gateway.

The API gateway is the entry point for clients. Instead of calling services directly, clients call the API gateway, which forwards the call to the appropriate services on the back end.

Advantages of using an API gateway include:

- It decouples clients from services. Services can be versioned or refactored

without needing to update all of the clients.
- Services can use messaging protocols that are not web friendly, such as AMQP.
- The API Gateway can perform other cross-cutting functions such as authentication, logging, SSL termination, and load balancing.
- Out-of-the-box policies, like for throttling, caching, transformation, or validation.

Shop Microservice

Shop Microservice contains business logic and functionalities related to product view page, Cart, Checkout and User login Features. It connects to ecommerce DB (MySQL).
This service runs with port number 8080 in this application.

Discount Microservice

Discount Microservice contains business logic and functionalities for discount and coupon list Features. Admin can add and delete coupons from Discount UI from Admin module. It connects to ecommerce DB (MySQL). This service configured with application properties which runs the service in port number 8081 in this application.

Database Tables
- cart,
- category,
- customer,
- orderdetails,
- orders,
- payments
- ,product,
- Saleslog
Wishlist

NON-FUNCTIONAL REQUIREMENTS

Usability:

Regardless of the size of your business, the website of your business should be easy to use for even a non-technical user. Do you know that a general user takes just 0.05 seconds to figure out whether the website is worth its time or not? Thus you have to give special attention to the design of your homepage, CTAs, and easy checkout to get past those milliseconds of doom. The usability of a website is also defined by:

- How easily a user can achieve their target in a single page visit
- How quickly they can perform tasks in the store
- The memorable & intuitiveness of the design
- Number and types of errors users make

Security:

Security comes with utmost importance if your site is dealing with monetary transactions, users' financial and sensitive data. Using an SSL certificate and data

privacy policy will create trust among the users for your website and convert the customers into brand advocates. It is also considered for the different admin roles by which you can control who can create, see, copy, change or delete information. Depending upon the location of your business, security also refers tocompliance with customer data protection rules such as GDPR in Europe.

Performance:

For increasing the traffic on your website, you have to give special attention tothe performance in the non-functional requirements documentation. The focus should be on loading the e-commerce store as fast as possible regardless of the number of integrations and traffic on your website. You can set up the speed benchmark, maximum SKUs which you want to add, or any other performance indicator best for your business.

Maintainability:

The operational costs for maintenance are the tricky part of planning a business budget. Thriving the website maintenance from the initial development means cutting the time & cost to determine and resolve the faults of the system in the future. Well, it sounds sad but there is no way to avoid issues in the future and you have to look for a website development company that can maintain your website.

Scalability:

Last but not the least, you have to look for a future-proof solution considering the scalability. It will define how the website can grow and increase its features and functionality without impacting the performance of your website. You must be able to add more memory, servers, or disc space for making more transactions onyour website. On the server side, while entering new markets you may need to add localization features. Overall, this NFR accounts for painless business expansion and has both hardware and software implications.

4. MODELING REQUIREMENTS

4.1 UML DIAGRAMS:

UML stands for Unified Modeling Language. UML is a standardized general-purpose modeling language in the field of object-oriented software engineering. The standard is managed, and was created by, the Object Management Group.

The goal is for UML to become a common language for creating models of object oriented computer software. In its current form UML comprises two major components: a Meta- model and a notation. In the future, some form of methodor process may also be added to; or associated with, UML.

The Unified Modeling Language is a standard language for specifying, Visualization, Constructing and documenting the artifacts of software systems, as well as for business modeling and other non-software systems.

The UML represents a collection of best engineering practices that have proven successful in the modeling of large and complex systems.

The UML is a very important part of developing objects oriented software and the software development process. The UML uses mostly graphical notations to express the design of software projects.

GOALS:

The Primary goals in the design of the UML are as follows:

1. Provide users a ready-to-use, expressive visual modeling Language so that they candevelop and exchange meaningful models.
2. Provide extendibility and specialization mechanisms to extend the core concepts.
3. Be independent of particular programming languages and development processes.
4. Provide a formal basis for understanding the modeling language.
5. Encourage the growth of the tools market.
6. Support higher level development concepts such as collaborations, frameworks, patternsand components.
7. Integrate best practices

4.1.1 USE CASE DIAGRAM

A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases.
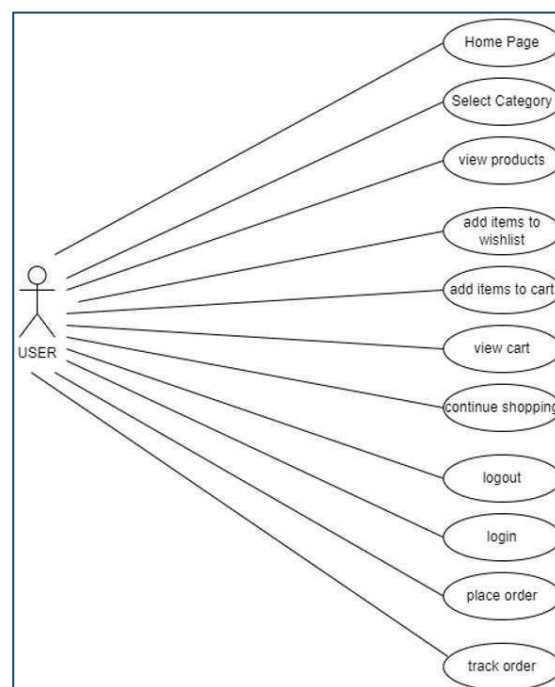
Fig. 4.1 Use Case Diagram
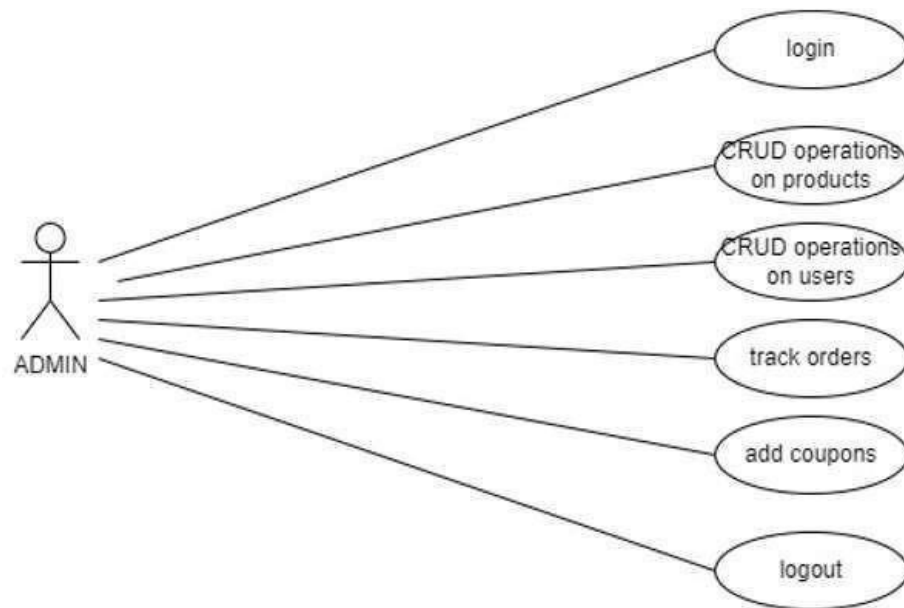
Admin Functionality

4.1.2 CLASS DIAGRAM

The class diagram is used to refine the use case diagram and define a detailed design of the system. The class diagram classifies the actors defined in the use case diagram into a set of interrelated classes. The relationship or association between the classes can be either an "is-a" or "has-a" relationship. Each class in the class diagram may be capable of providing certain functionalities. These functionalitiesprovided by the class are termed "methods" of the class. Apart from this, each class may have certain "attributes" that uniquely identify the class.
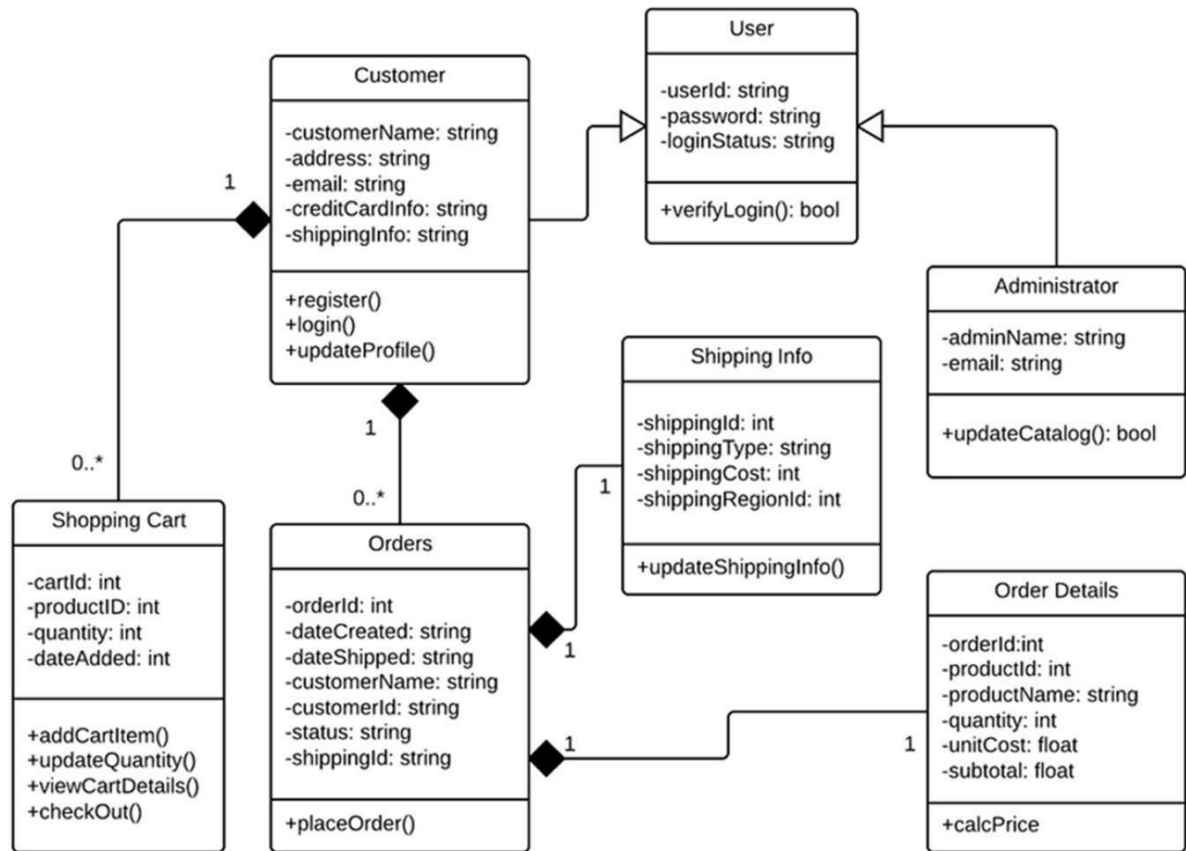
Fig. 4.2 Class Diagram

4.1.3 STATE CHART DIAGRAM

A state diagram, as the name suggests, represents the different states that

objects in the system undergo during their life cycle. Objects in the system change states in response to events. In addition to this, a state diagram also captures the transition of the object's statefrom an initial state to a final state in response to events affecting the system.

State Diagram - Online Shopping System
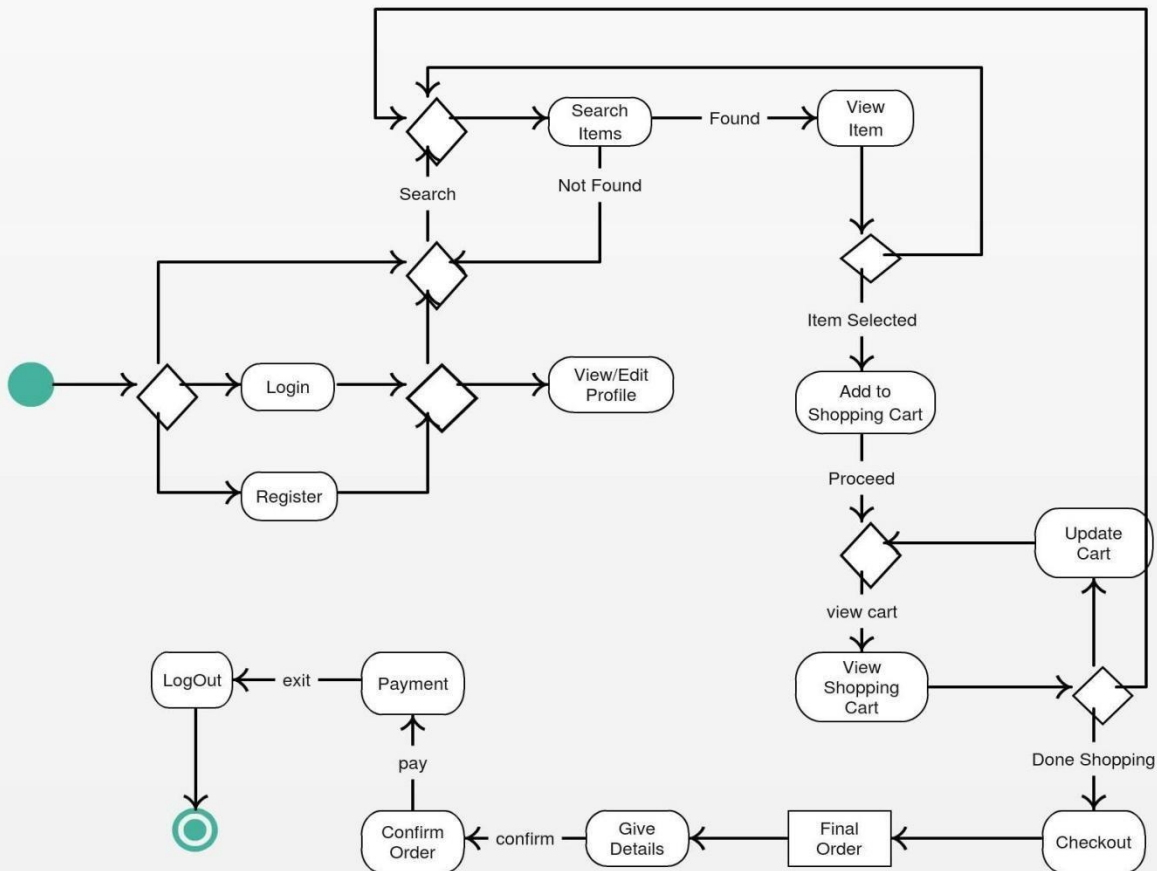
Fig. 4.3 State Chart Diagram

ACTIVITY DIAGRAM:

The process flows in the system are captured in the activity diagram. Similar to a state diagram, an activity diagram also consists of activities, actions, transitions, initial and final states, and guard conditions.
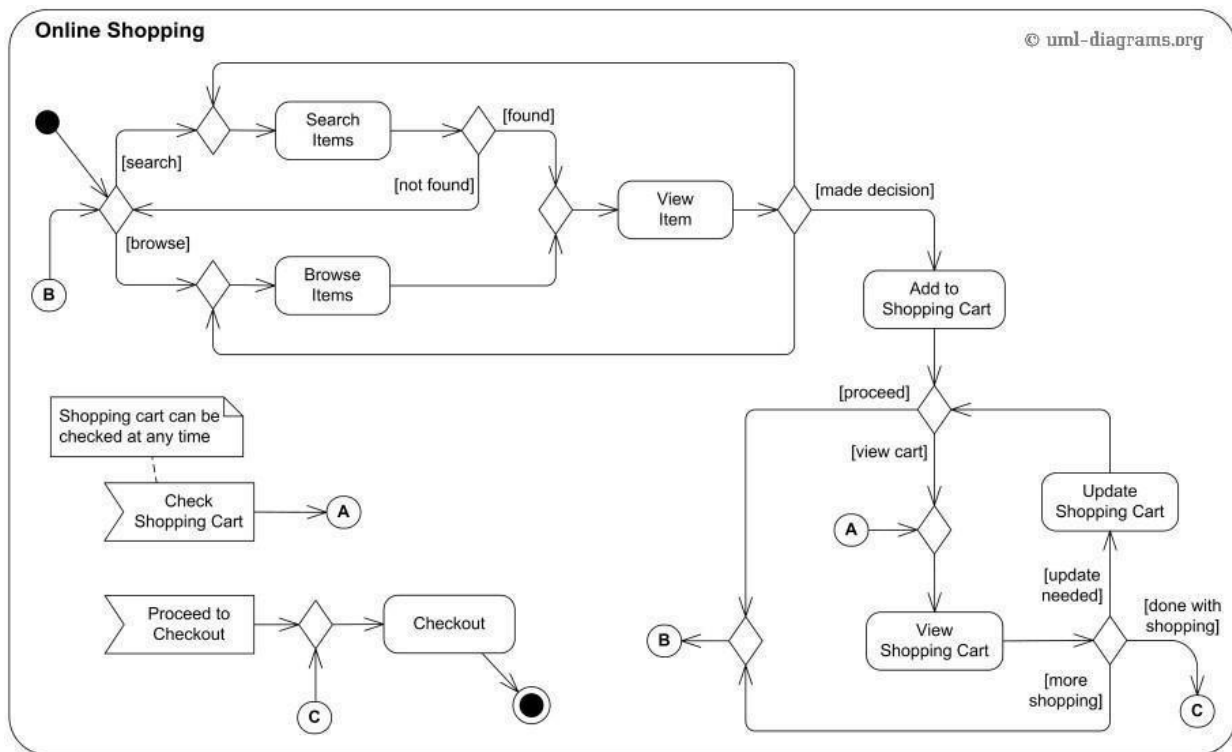
Fig. 4.4 Activity Diagr

DATA FLOW DIAGRAM

The flow chart diagram is a special kind of class diagram. The flow chart diagram depicts the flow of the process or algorithm using a set of symbols. The flow chart diagram is a pictorial
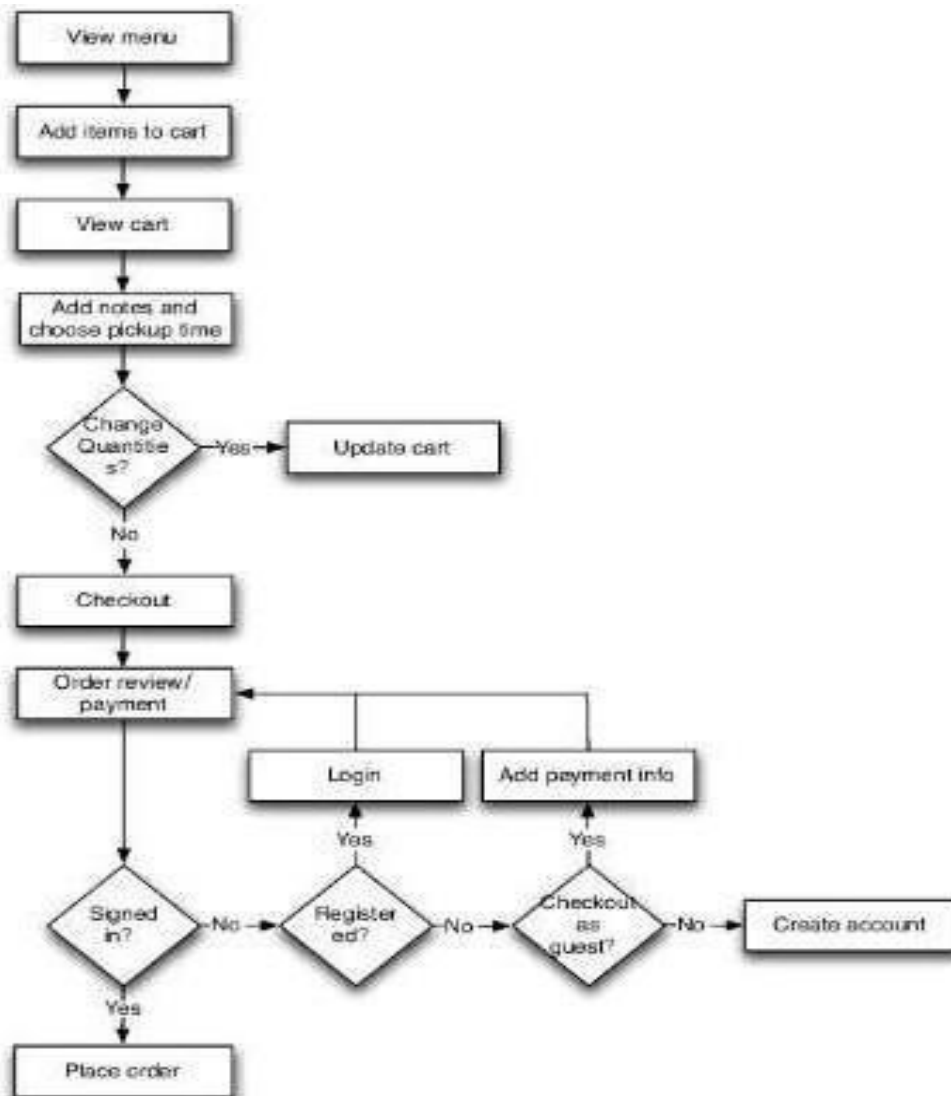
5. IMPLIMENTATION

We will implement a simple e-commerce application. We'll develop
an API using Spring Boot and a client application thatwill
consume the API using Angular. Basically, the user will be able to
add/remove products from a product list to/from a shopping cart
and to place an order.

5.1 TECHNOLOGY USED

In below I would like to explain which technologies are used in this project. It's
helpful for understand the project layouts & overview of documentation.

Back-end
1. Java
2. Spring Boot
3. Spring Security

4. Hibernate
5. MySQL
6. Maven
   Front-end

1. Angular
2. Bootstrap

5.2 IMPLEMENTATION STEPS

First you need to start back-end server, after that execute client side. Follow below steps to run this application on your system.

- First Install Java 8 jdk, Vs code, Spring Tool Suit, MySQL

- From your local FrontEnd code path -> open cmd Eg -> {local path}\ frontend\Home e-commerce
- Run this command -- code .
- Run Npm install from vs code terminal
- Run npm start
- After the successful compiling you got this link in terminal localhost/4200.

- Open this link in google
- DataBase
- Install Mysql workbench
- Open that Mysql
- Open this query editor and You can run the query from sql file.
- Run the query.

6. Design and Implementation of the Site:
HOME PAGE
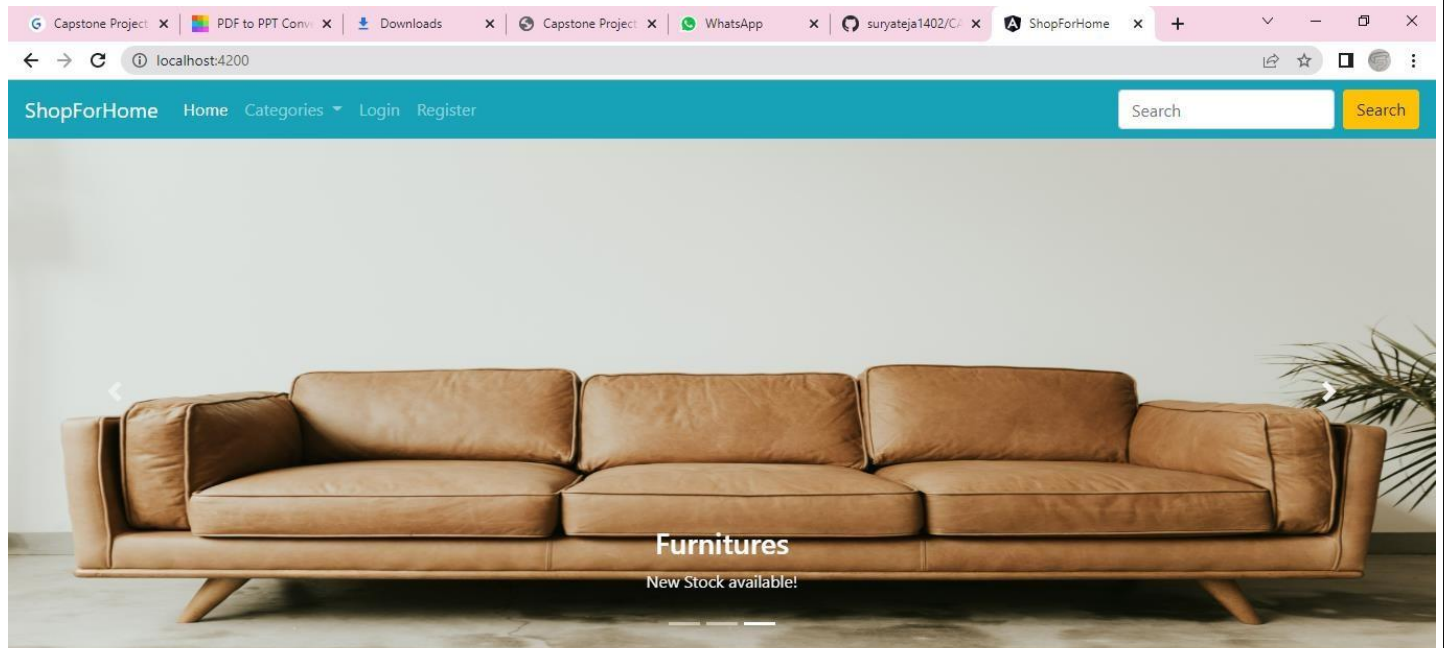
LOGIN PAGE

REGISTER PAGE

MY WISHLIST

ADMIN LOGIN

ADMIN LOGIN

ADMIN CATEGORY

ADMIN PRODUCTS

EMAIL FOR STOCKS

Email For Stocks

Orders Form

Name

Email

Mobile Number

Subject

Message

Submit Form

SEARCH OPTION
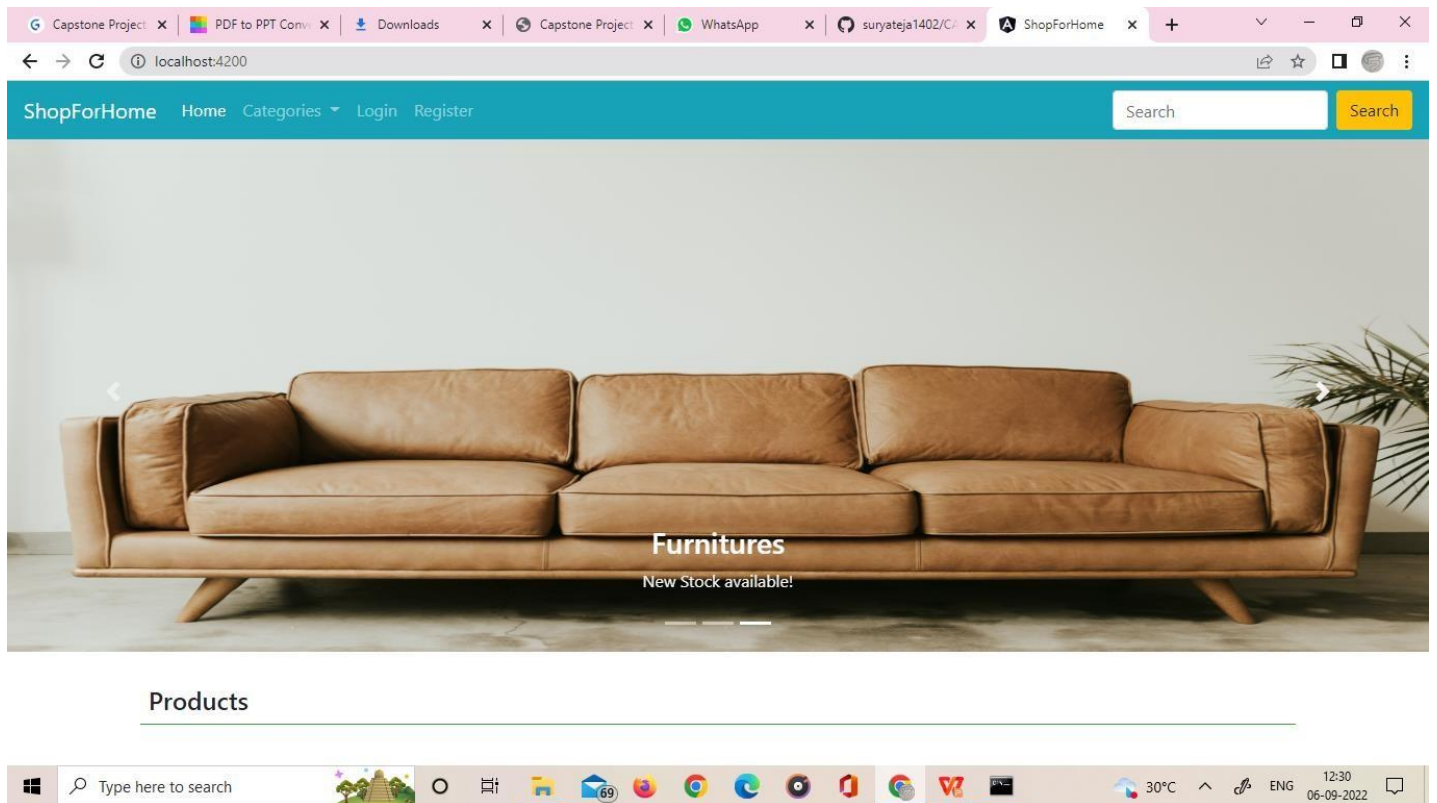
BULK UPLOAD OPTION
(upload products and
download reports)

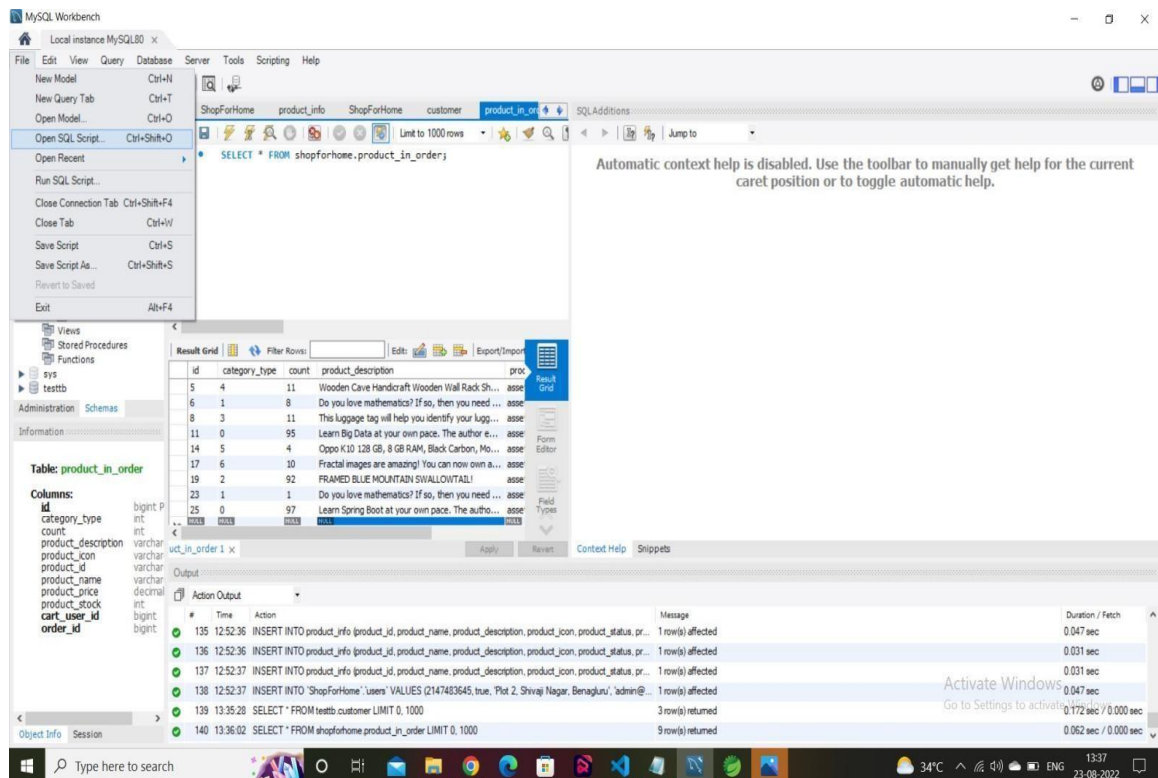# INSTALLATION STEPS:

Required Software:
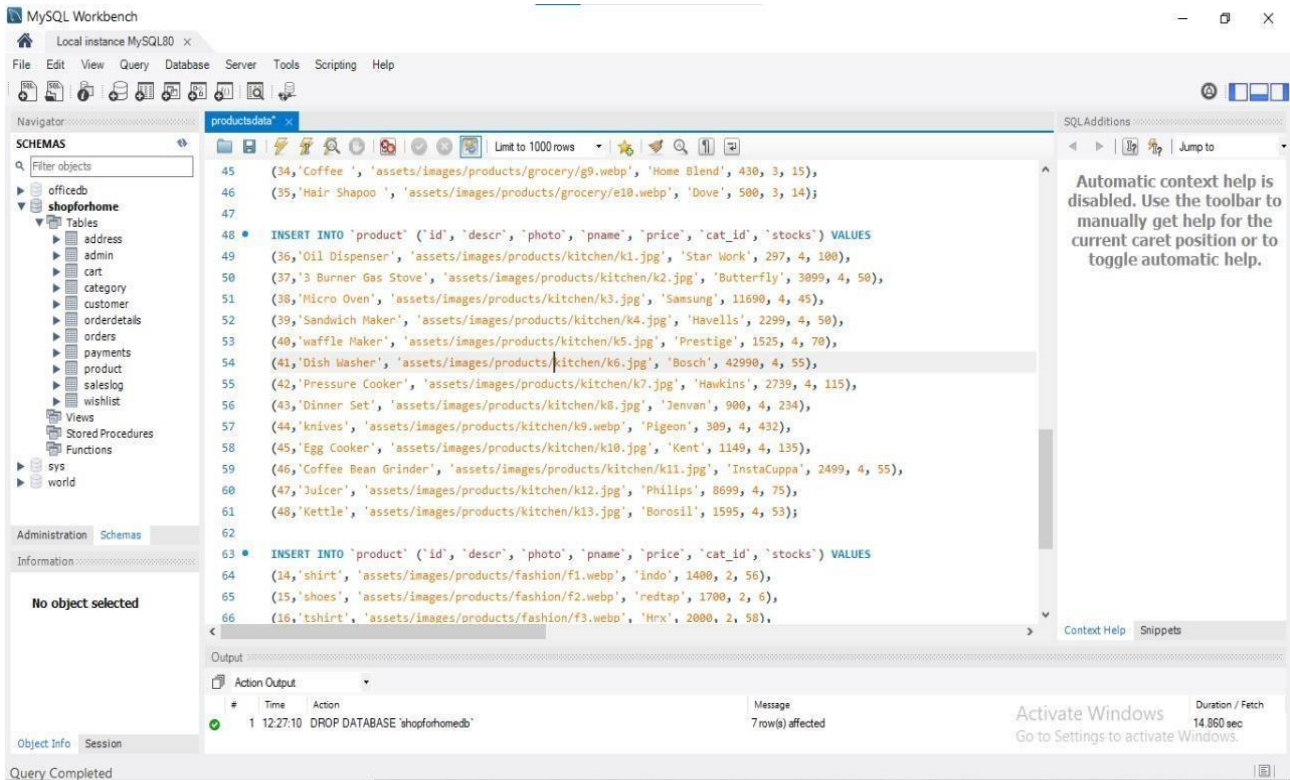1. Spring Tool Suite

2. Visual Studio Code 3.

MySQL Create database

in MySQL Workbench:

1. Open MySQL Workbench.

2. Click on Open SQL Script.

3. Select ShopForHome SQL File in project folder.

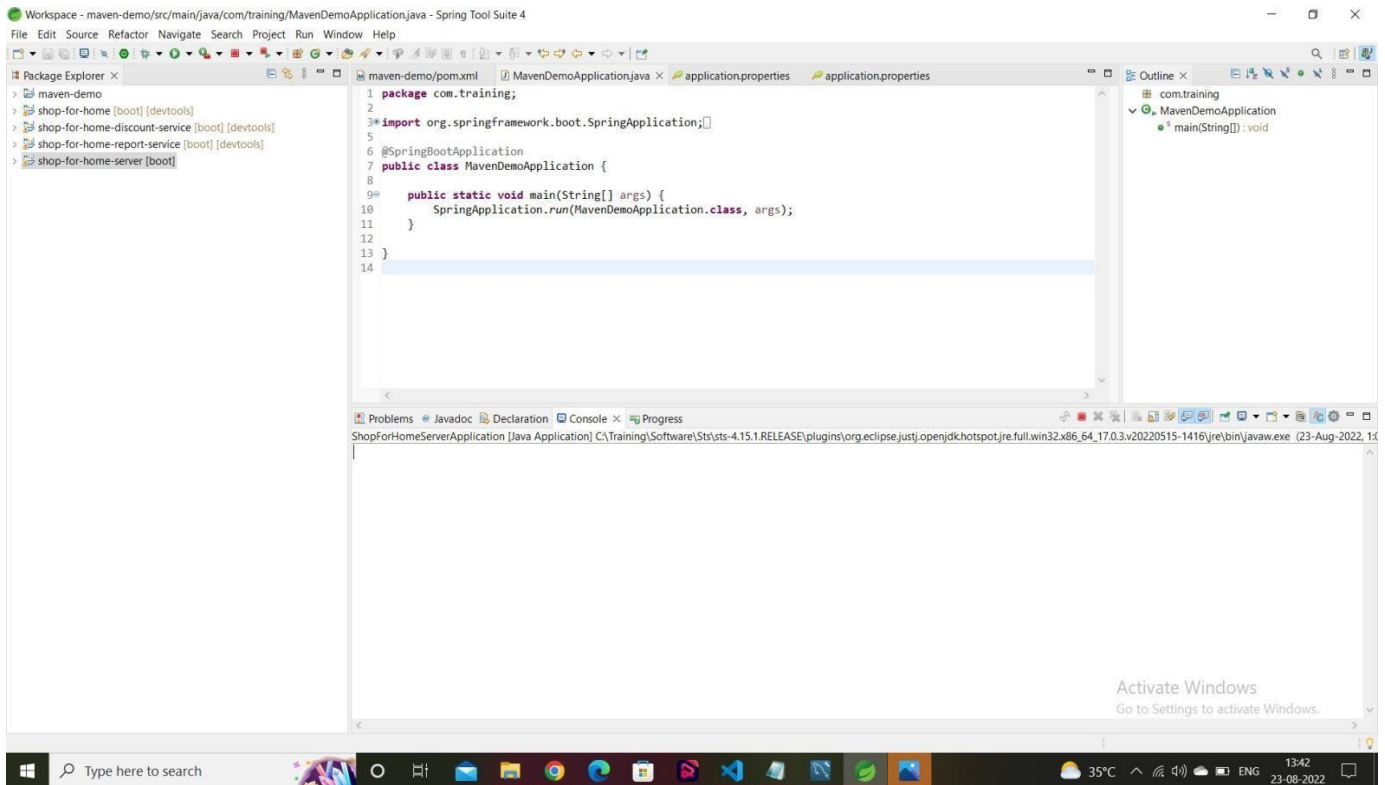4. Click on Execute to run SQL File.

5. Now Database is successfully created.
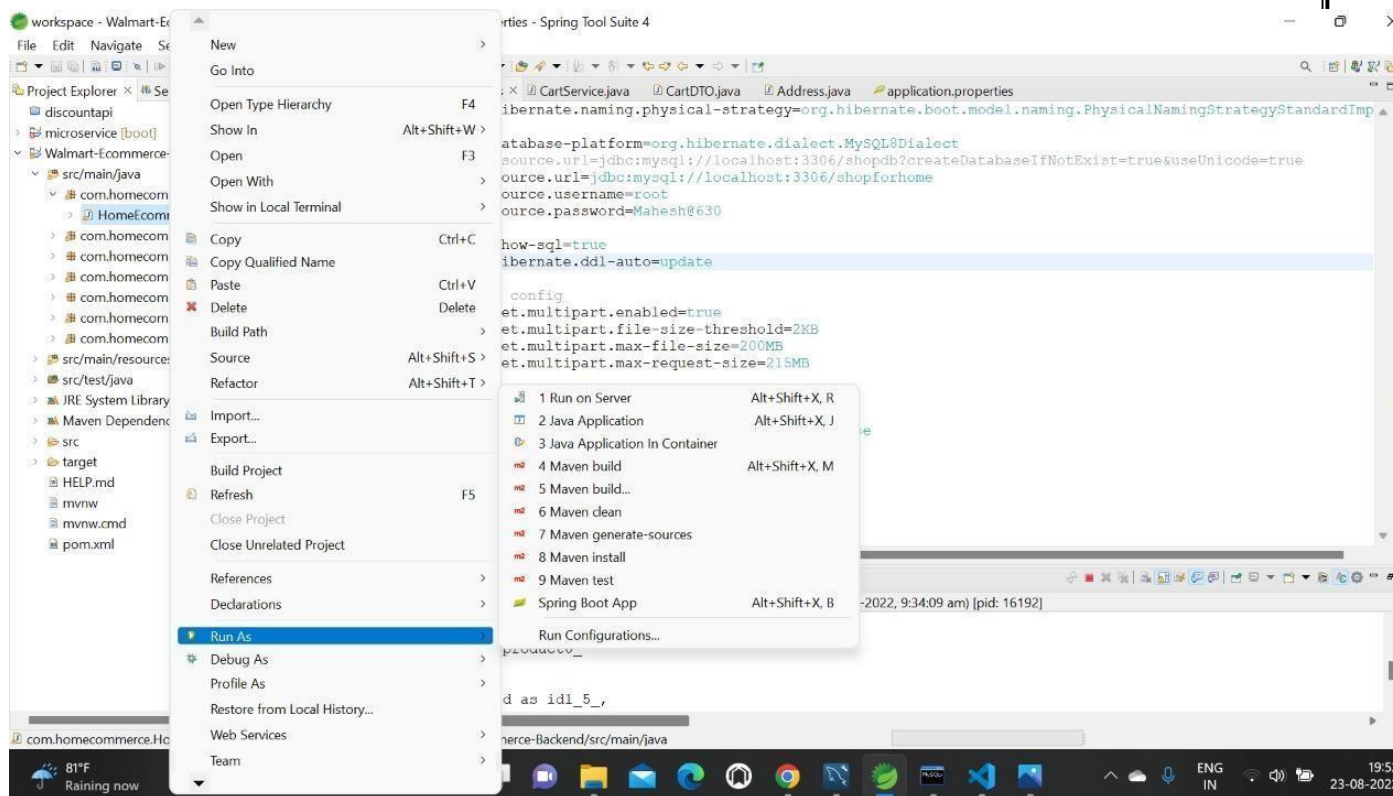
Import Backend project in Spring Tool Suite:

1. Open Spring Tool Suite.

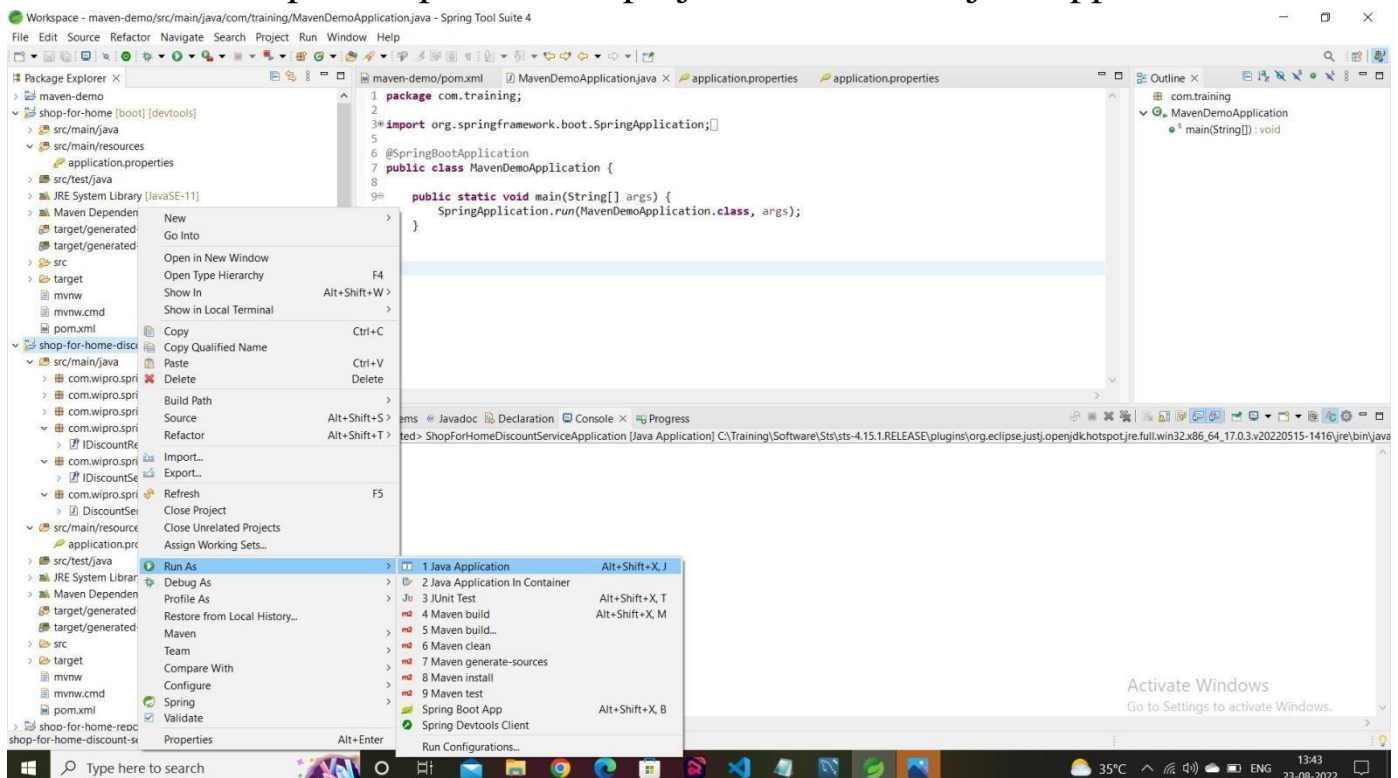2. Import all four project in workspace from backend folder.

Note: - In Project MySQL username and password is root. Please change itaccording to your system in application.properties file.

4.First Open Walmert-Ecommers project and run it as java application

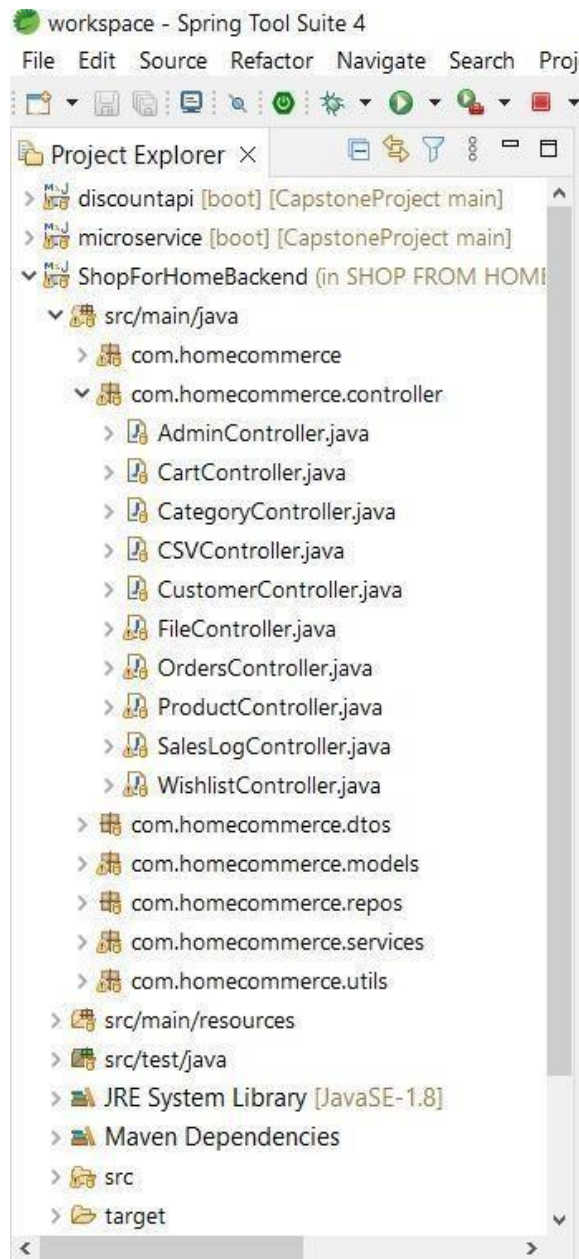4. Then Open shop-for-home project and run it as java application.

Open Frontend Project in Visual Studio Code:
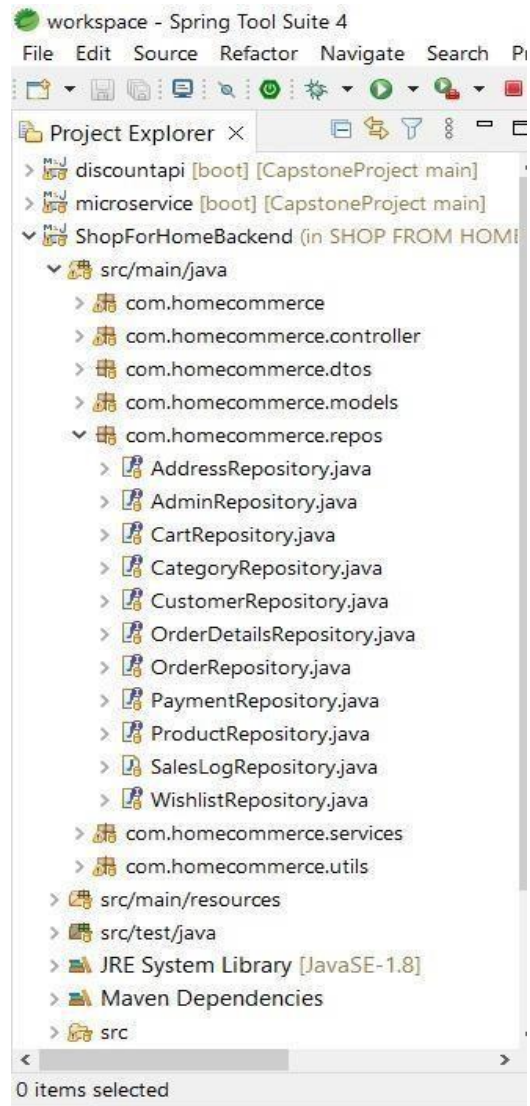1. Open Visual Studio Code.
2. Click On Open Folder.

3. Select shop-for-home in frontend folder.
4. Open new terminal and type ng serve to run the project.
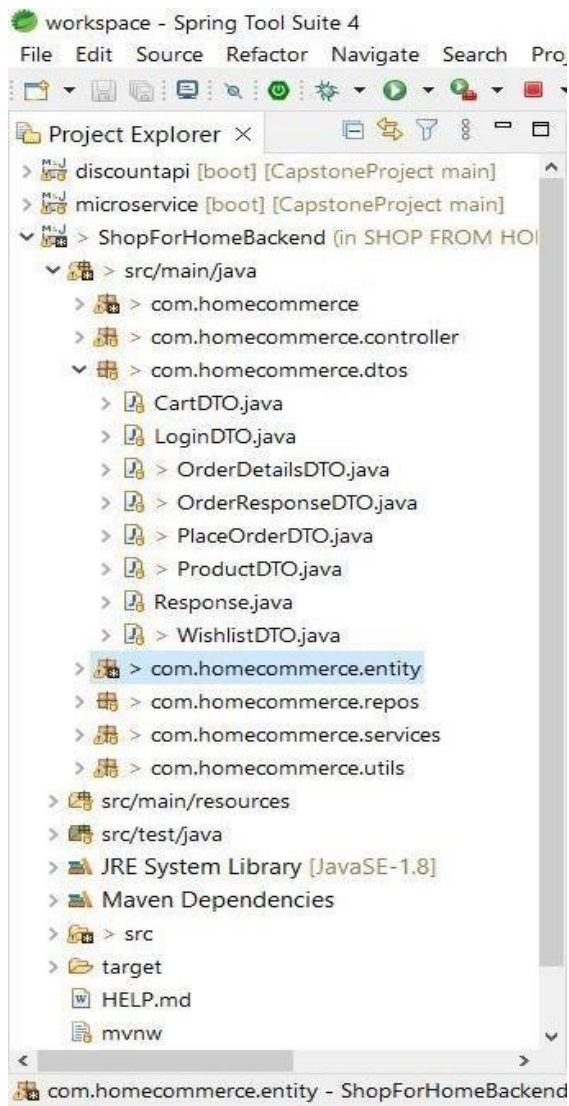
BACKEND STRUCTURE

CONTROLLER PAGE

REPOSITORY PAGE

ENTITY PAGE

DTOS PAGE

7.CONCLUSION AND FUTURE ENHANCEMENTS

7.1 CONCLUSION:

E-Commerce has undeniably become an important part of our society. The successful companies of the future will be those that take E-Commerce seriously, dedicating sufficient resources to its development. E-Commerceis not an IT issue but a whole business undertaking. Companies that use it as a reason for completely re-designing their business processes are likelyto reap the greatest benefits. Moreover, E-Commerce is a helpfultechnology that gives the consumer access to business and companies all over the world

.

7.2 FUTURE ENHANCEMENTS:

The e-commerce industry saw major traction in 2020. Technology innovation, easy scalability, increased internet penetration and changed userhabits due to COVID-19 let the industry improve experiences and compete against brick-and-mortar shops.
Engaging customers directly is top priority for brands, and in this era of widespread awareness and cutthroat competition, the only way to survive is to stay ahead of the curve, identify lagging areas and capture evolving trends at the onset.