ShopForHome

CONTEXT

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GitHub-link: https://github.com/umasasank/batch10_Capstone-project

Project Description:

- Any member can register and view available products.
- ➤ Only registered member can purchase multiple products regardless of quantity.
- There are four roles available.

Visitor

User

Operator

Admin

- ➤ Visitor can view, search, compare available products.
- User can view and purchase products.
- > Operator can excess add option and can view everything of admin panel.
 - ✓ Operator can add product, edit product, update and remove product.
 - ✓ Can access users some information.
 - ✓ Operator can ship order to user based on order placed by sending conformation mail.
- An admin has some extra privileges including all privilege of visitor and user.
 - ✓ Admin can add products, edit products information and add or remove product.
 - ✓ Admin can add user, edit user information and can remove user.
 - ✓ Admin can ship order to user based on order placed by sending conformation mail.

Features of the application:

- 1. Registration
- 2. Login
- **3.** Payment gateway
- 4. Searching
- **5.** Filtering
- **6.** Sorting
- 7. Dynamic data
- **8.** Responsive and compatible with different devices.

Recommended Technologies:

- 1. Database management: POSTGRESQL
- 2. Backend Logic: Java Programming, NodeJS
- 3. Frontend Development: JSP, Angular, Bootstrap, HTML/CSS and JavaScript
- 4. DevOps and Production Technologies: Git, GitHub, Jenkins, Docker and AWS

Project Development Guidelines:

- The project will be delivered within two sprints with every sprint delivering a minimal viable product.
- It is mandatory to perform proper sprint planning with user stories to develop all the component of the project.
- The learner can use any technology from the above-mentioned technologies for different layers of the project
- The web application should be responsive and should fetch or send data dynamically without hardcoded values
- The learner must maintain the version of application over git hub every new change should be sent to the repository
- The learner must implement a CI/CD pipeline using Jenkins.
- The learner should also deploy and host the application on an AWS EC2 instance.
- The learner should also implement automation testing before the application enters the CI/CD pipeline.
- The learner should use Git branching to do basic automation testing of the application in it separately.
- The learner should make a rich frontend of the application, which is userfriendly and easy for the user to navigate through the application.
- There will be two portals in the application, namely admin and user portal.

Admin Portal:

The admin portal deals with all the backend data generation and product Information. Admin do the following activities

- Add or remove different cuisines to or from the application to build a rich product line
- Edit item details like name, price, cuisine, description, and offers to keep it aligned to the current prices
- Enable or disable the items

User Portal:

It deals with the user activities. The end-user should be able to:

- Sign-in to the application to maintain a record of activities
- Search for items based on the search keyword
- Apply filters and sort results based on different cuisines to get the best deals
- Add all the selected items to a cart and customize the purchase at the end
- Perform a seamless payment process
- Get an order summary details page once the payment is complete.

Core concepts used in the project:

a. Front End:

HTML.

CSS3 and

Bootstrap4.

TypeScript.

Angular, Angular Material for View.

- **b. VS Code:** As an IDE to design frontend of the application.
- **c. Git:** To connect and push files from the local system to GitHub.
- **d. GitHub:** To store the application code and track its version.

e. Back End:

Eclipse IDE.

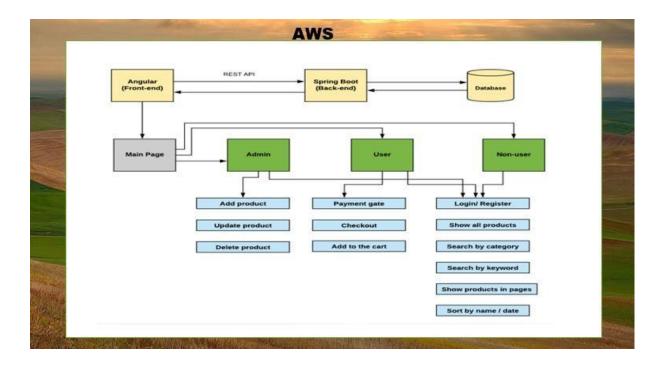
Java Programming.

Searching and Sorting Spring Boot DevTools.

Spring Web and Spring Data JPA.

Deploying in AWS Cloud

Architecture diagram / flow chart



Project Users Stories: (Agile and Scrum)

The project is planned to be completed in 3 sprints. Tasks assumed to be completed in the sprint are:

- Creating the flow of the application
- Initializing git repository to track changes as development progresses.
- Writing the Java program to fulfill the requirements of the project.
- Testing the Java program with different kinds of User input
- Pushing code to GitHub.
- 1. As a user I should be able to login, Logout and Register into the application.
- 2. As a user I should be able to see the products in different categories.
- 3. As a user I should be able to sort the products.
- 4. As a user I should be able to add the products into the shopping cart.
- 5. As a user I should be able to increase or decrease the quantity added in the cart.
- 6. As a user I should be able to add "n" number of products in the cart.

- 7. As a user I should be able to get the Wishlist option where I can add those products
 They wanted
- 8. As a user I should get different discount coupons.

Sprint 1

- 1. Create git repository
- 2. Create database schema (all tables along with their relationships)
- 3. Create entities in Spring
- 4. Create Microservice based structure.
- 5. CRUD on User and Products
- 6. Create an eCommerce Template in Angular (Static only) to hold images and product list
- 7. Develop Search Functionality in Angular
- 8. Bulk upload implementation.

Sprint 2

- 1. Cart option.
- 2. Stock and Sales reports
- 3. Create Data Transfer objects
- 4. Create repository
- 5. Create Service layer logic
- 6. Create Controller to direct rest api
- 7. Create Discount Microservice

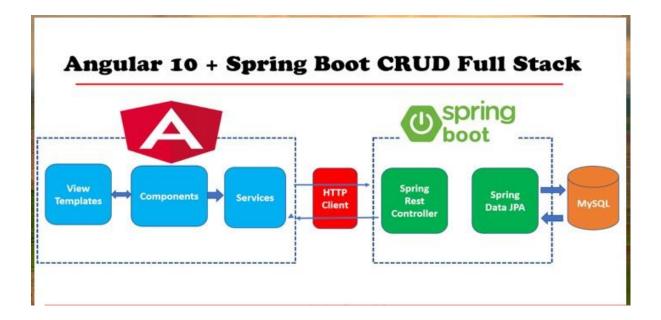
Angular Introduction

Angular is a platform and framework for building single-page client applications using HTML and TypeScript. Angular is written in TypeScript. It implements core and optional functionality as a set of TypeScript libraries that you import into your applications.

Spring Boot Introduction

Spring Boot is an open-source Java-based framework used to create a microservice. It is developed by Pivotal Team and is used to build stand-alone and production ready spring applications. This chapter will give you an introduction to Spring Boot and familiarizes you with its basic concepts.

Connection between Angular and Spring boot



AWS Introduction

Amazon Web Services (AWS) is a cloud service from Amazon, which provides services in the form of building blocks, these building blocks can be used to create and deploy any type of application in the cloud.

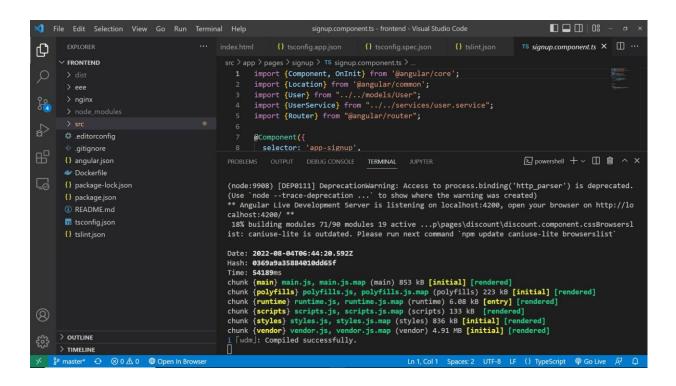
Each type of service in this "What is AWS" blog, is categorized under a domain, the few domains which are widely used are:

- Compute
- Storage
- Database

- Migration
- Network and Content Delivery
- Management Tools
- Security & Identity Compliance
- Messaging

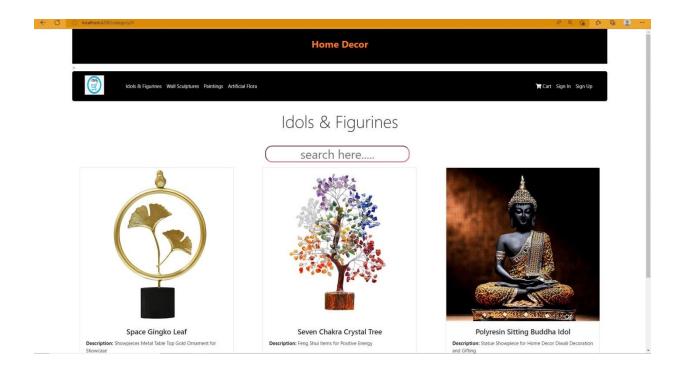
How To run Application and outputs:

- 1.Go to Eclipse and run the main program
- 2. Go to Visual studio Code and run the angular project



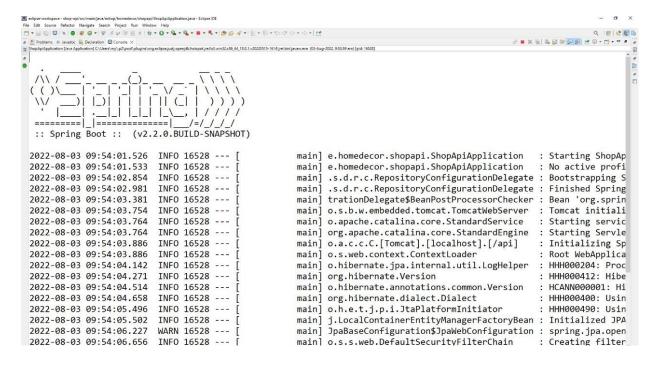
3. Paste this URL in Chrome browser http://localhost:4200/ and run the application and

You will get the following web page



4. We need to configure the backend part using spring boot and rest api's for the CRUD operations.

```
3*import org.springframework.boot.SpringApplication;
             13 @SpringBootApplication
14 public class ShopApiApplication {
             15
                    @Bean
                    public PasswordEncoder passwordEncoder() {
             16
             17
                        return new BCryptPasswordEncoder();
             18
             19
             20∘
             21
                    public WebMvcConfigurer corsConfigurer() {
             2220
                        return new WebMvcConfigurerAdapter() {
             230
                            @Override
                            public void addCorsMappings(CorsRegistry registry) {
   registry.addMapping("/**");
             -24
             25
             26
             27
                        };
             28
             29
             30
                    public static void main(String[] args) {
             31
                        SpringApplication.run(ShopApiApplication.class, args);
             32
             23
                                                                                     gins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86,64_18.0.1.x20220515-1614\jre\bin\javaw.exe (03-Aug-2022, 9:53:59 am) (pid: 16528)
                                                               main] .s.d.r.c.RepositoryConfigurationDele
             2022-08-03 09:54:02.981 INFO 16528 --- [
```

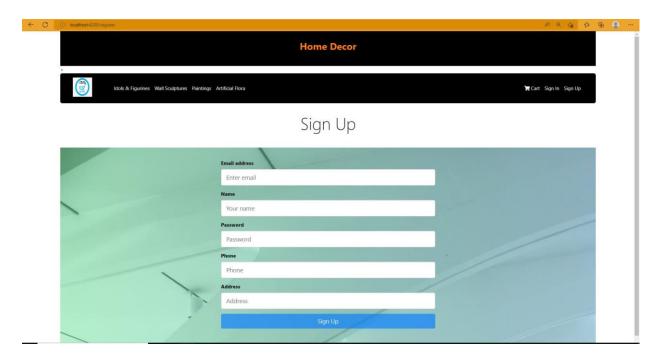


5. We need to write and insert queries so that the actions which are performed by the user on the products and as well as the admin CRUD operations on user and products can be displayed in the form of tables neatly.

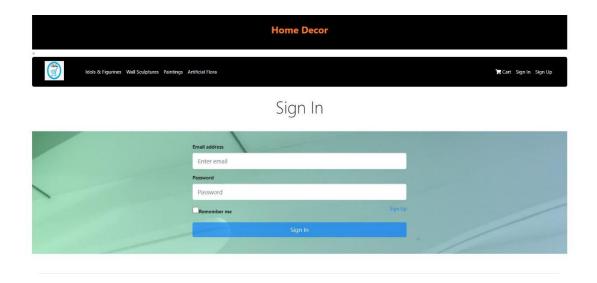
```
| Table | Public of Properties | SOL | Statistics | Dependences | Depend
```

So the respective outputs are displayed as shown in the below figures in the form of users actions and admins actions

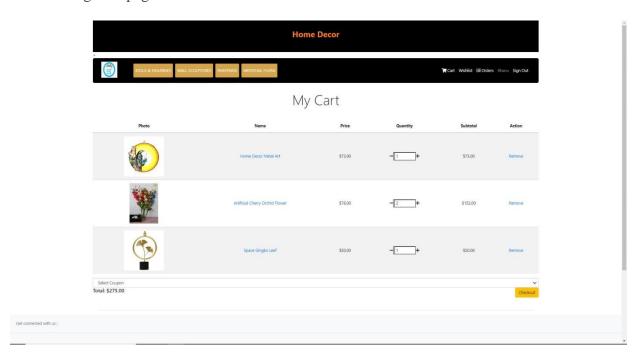
6. If User wants to sign in he/she first need to click on Sign Up and then he/she need to enter their respective details as shown in below



7. If the user is a old customer in which he is already registered then he can just click on sign in button and enter the details of his mail id and password



8. If User wants to add their items to the cart they can click on "add to cart" then automatically Added to the cart. If user open their cart they will see all the products what they added the Following web page looks like this

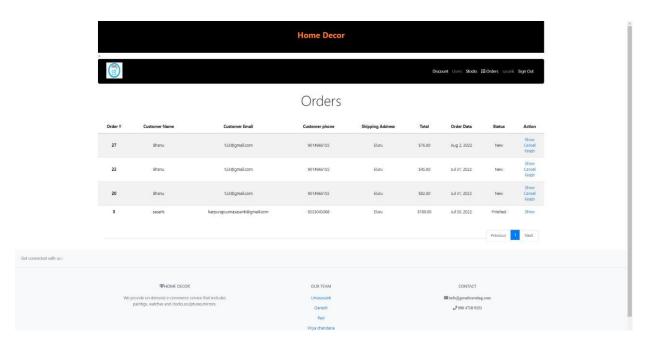


- 9. User order their product through "checkout" or he/she can shop more or they can empty

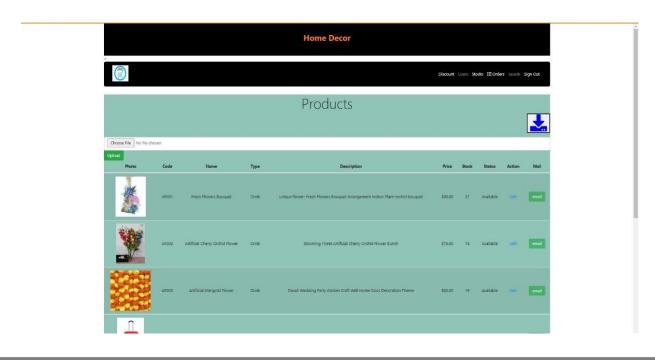
 Their cart list
- 10. User can logout when our they want if they want to login, login with their own credentials

Admin CRUD operations:

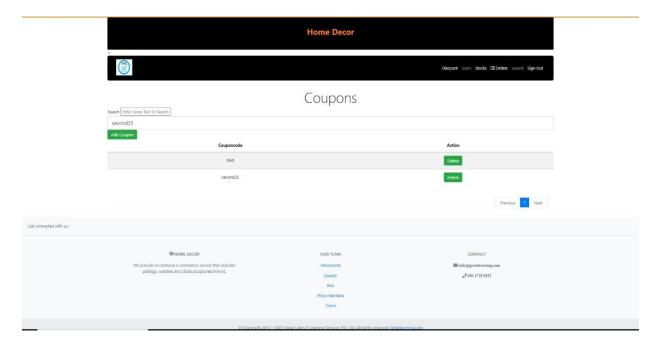
In the below figure we can see that the orders placed by the user via admin profile



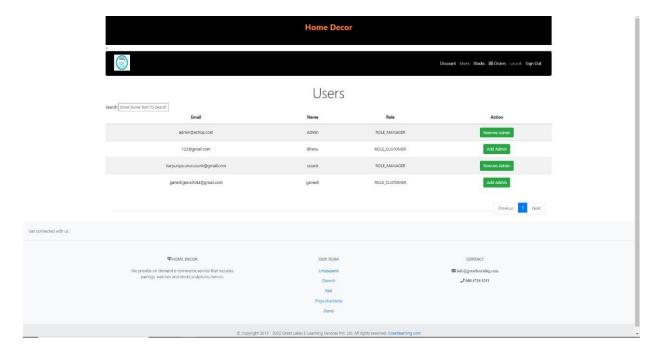
Admin performing the CRUD operations on products



Admin can also add coupons for the products



Admin Perform CRUD operations on user



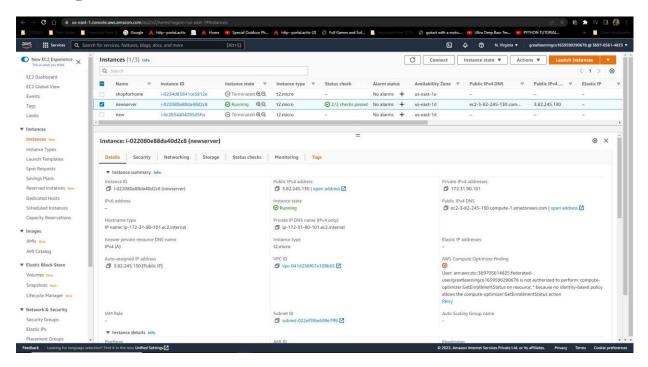
Deploy Spring Boot in AWS and results

There are many ways to Deploy the spring boot application into AWS one of the way we

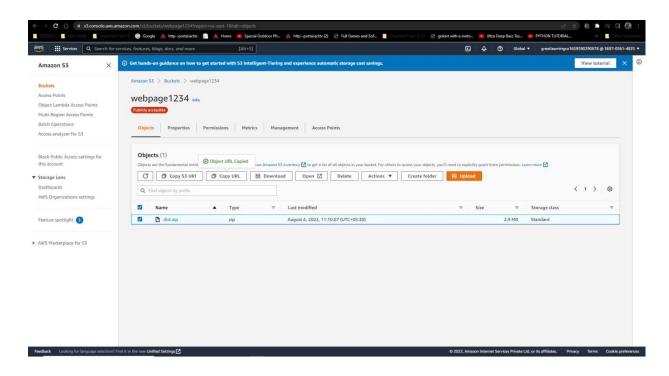
Were choose is the following:

- 1. Creating Instance (EC2 instance)
- 2. Creating S3 Bucket
- 3. Upload spring boot .jar file
- Connecting EC2 instance with the Putts

Creating EC2 Instances:

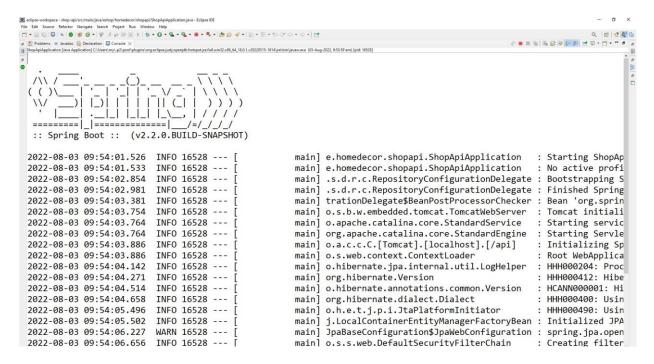


Creating S3 Bucket

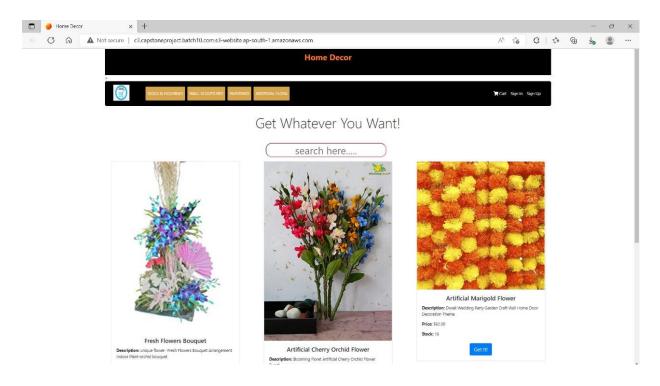


After open putty check if java is installed or not if java version not installed install javausing the following command "yum install java-1.8.0-openjdk" and check java version

Then connect to the bucket through the copy URL of the file which was uploaded in the Bucket then open the .jar file it could be like this



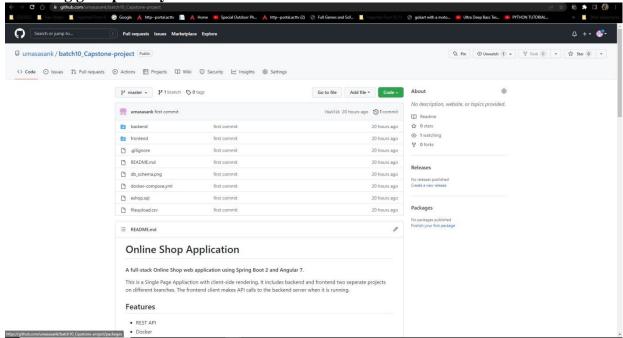
It connected to the Spring Now we need to connect to spring with web browser with the IP address



Then the output will become like the following

Push this application inti GitHub:

Creating git repository:



The Following Commands used to push the files into repository

git init

git add.

git commit -m "add existing project files to git"

git remote add origin "link"

git push -u -f origin master

Conclusion

After extensive research and analysis we have drawn to the following conclusions.

Yes online shopping is pretty popular among the young Indian blood. Many teenagers and bachelors are now using the E-Commerce for fulfilling their shopping desires. Most of them are completely aware of all the pros and cons of online shopping. Graduates are the majority users of E-retail. Cash on delivery remains the best choice for payment followed by Debit and credit cards. Females are marginally more interested in shopping through the internet due too its convenience. Most users are shopping once or twice a week though the web with spending ranging from rupees 100 to 2500 monthly. With most of the E- retailers selling branded goods and having flexible return policies they are being well trusted by the users. Apparel, footwear and Accessories lead as the most demanded goods online followed by Software and Music. The most visited and trusted sites are Amazon and Flip-kart according to the survey. After this analysis we conclude that India has a huge potential for growth of a multibillion dollar industry of E-Commerce as the top players of the market are having more than 100% growth year on year and their valuations are crossing billions of dollars.

Documentation Done by: 1. Umasasank Karpurapu 2. Ganesh Grandhi 3. Priya Chandana 4. Puli Jhansi 5. Kalathuru Rasi