DEVOPS PROJECT

Cache Bookstore

Project Report

By- Group 5(Arnav Dasgupta, Debadrita Purkayastha, Rahul Dewan, Stuti Suthar, Utkarsh Deshmukh)

Book Store Management System is the web application to automate all kinds of operations in the book shop. The purpose of this software is to manage the books in the book store. Generally, it includes the Order Processing, Stock Management and Accounts Management. We developed this software to maintains records of sales, purchase and staff records.

New Features

- Optimized the search for quick and efficient searching of books based on the jonor of a book
- Receive the invoice of the books bought.
- Maintenance and the code quality was ensured on a high level for a smooth use of the project.

Here we are trying to develop such type system which provides automation on any type of bookshop. That means a shop that has the type system which provides the facility to the customers of the shop to purchase the books from the shop without any complexity. At the start of the business, the books store owner buys the book from the dealers. All the name of the books is noted down in the software along with the rate. In the present system, the user has to do all work manually. In the present system During issuing orders of more stock, the product register is required to check to availability of stock in hand. And it takes time to check records.

ABOUT THIS PROJECT

This is an Ecommerce project still `development in progress`, where users can adds books to the cart and buy those books.

Application is being developed using Java, Spring and React.

Using Spring Cloud Microservices and Spring Boot Framework extensively

to make this application distributed.

MAVEN

Import this project into IDE and run all Spring boot projects or

build all the jars running `mvn clean install` command in root parent pom, which builds all jars.

DOCKER

Run `docker-compose up --build` to start all the containers.

Use the `Postman Api collection` in the Postman directory. To make request to various services.

All the microservices will be packed into docker containers and deployes in the AWS ECS in the private subnet.

`docker-compose` will take care of bringing all this monitoring containers up.

ARCHITECTURE

All the Microservices are developed using spring boot.

This spring boot applications will be registered with eureka discovery server.

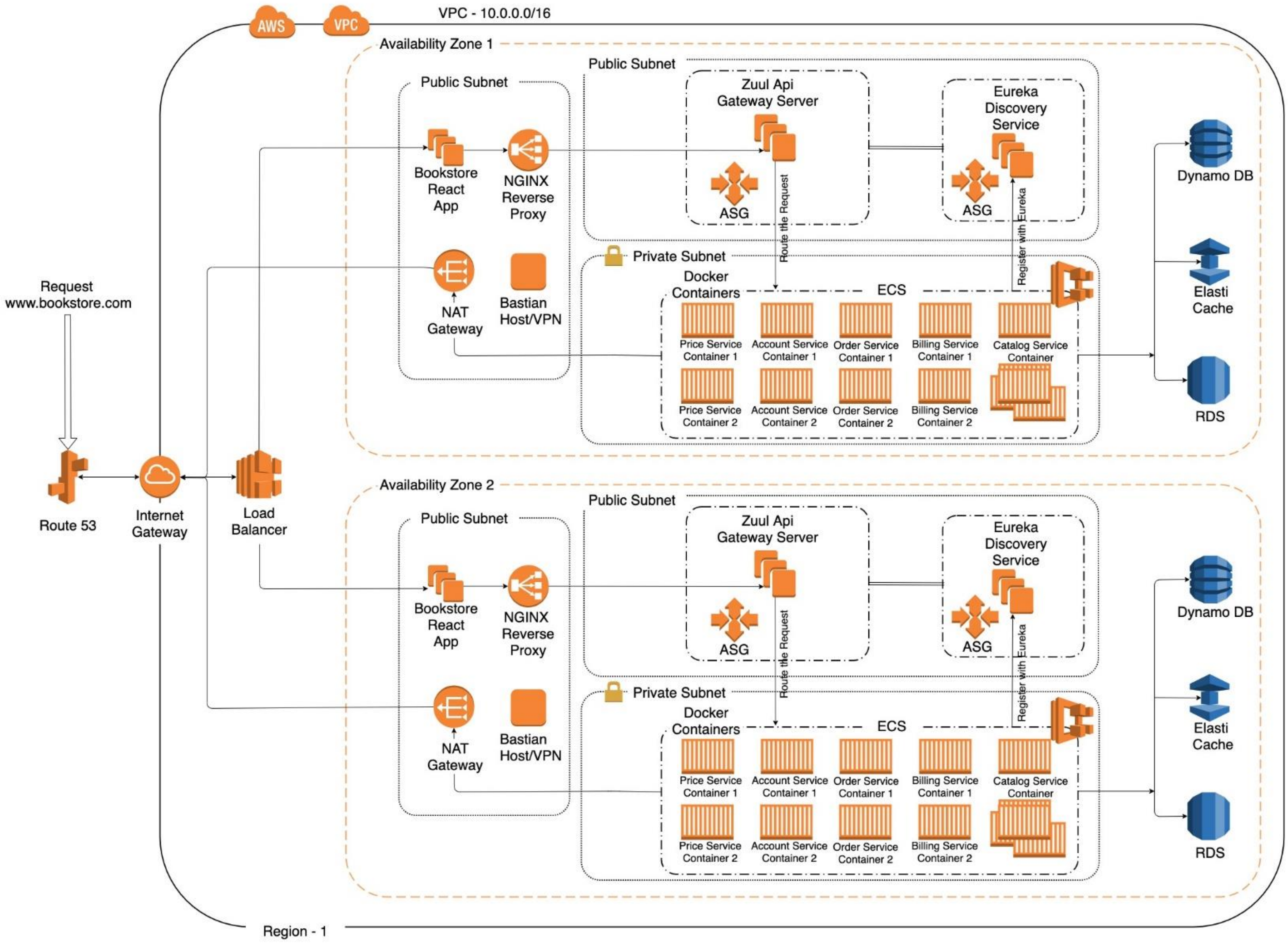
FrontEnd React App makes request's to NGINX server which acts as a reverse proxy.

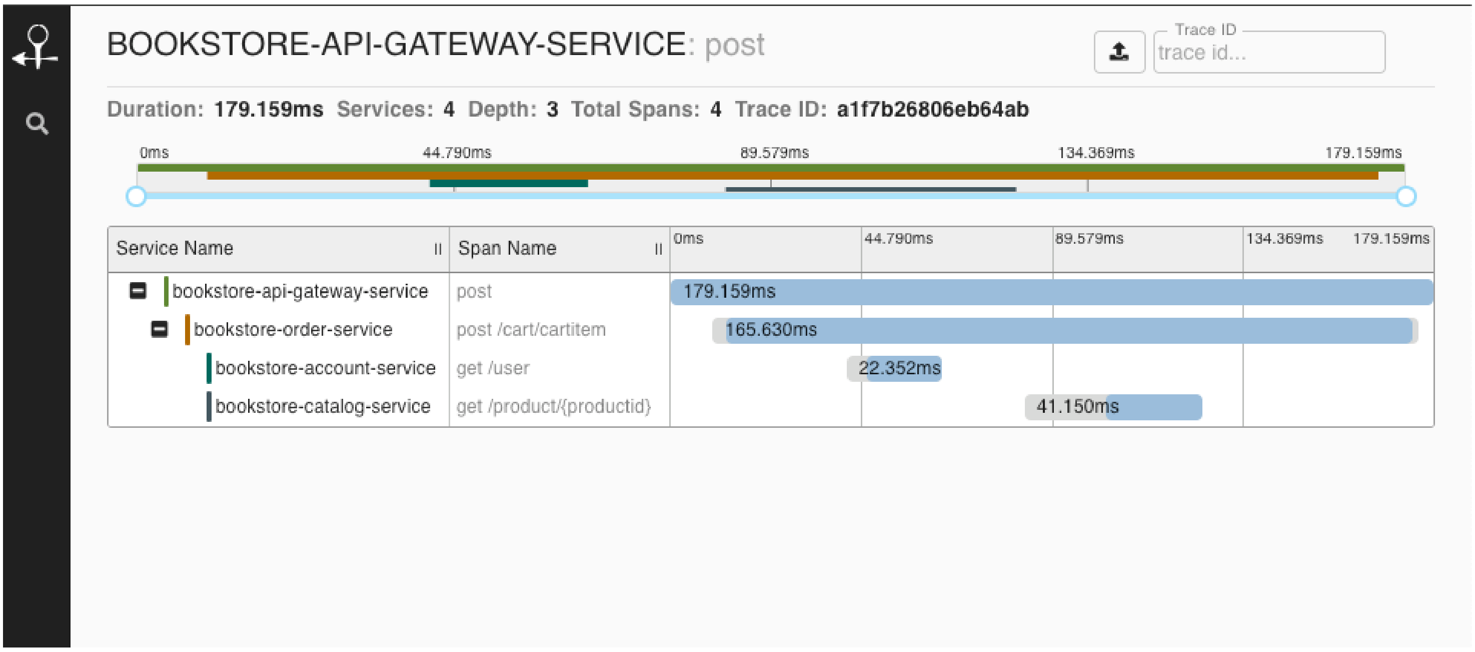
NGINX server redirects the requests to Zuul API Gateway.

Zuul will route the requests to microservice

based on the url route. Zuul also registers with eureka and gets the ip/domain from eureka for microservice while routing the request.

ARCHITECTURE





BOOKSTORE-API-GATEWAY-SERVICE: post

Duration: **179.159ms** Services: **4** Depth: **3** Total Spans: **4** Trace ID: **a1f7b26806eb64ab**

0ms 44.790ms 89.579ms 134.369ms 179.159ms

Service Name	Span Name	0ms 44.790ms 89.579ms 134.369ms 179.159ms
⊟ bookstore-api-gateway-service	post	179.159ms
⊟ bookstore-order-service	post /cart/cartitem	165.630ms
bookstore-account-service	get /user	22.352ms
bookstore-catalog-service	get /product/{productid}	41.150ms

TEAM STRUCTURE AND RESPONSIBILTIES

Arnav Dasgupta

Developer: creating software programs, integrating systems and software, training end-users, analyzing algorithms, modifying source-code, writing system instructions, debugging, and maintaining operating systems

Debadrita Purkayastha

User experience designer:-Gathering use cases for the project and Responsibility for the product design to make it intuitive and user friendly

Rahul Dewan

Developer: creating software programs, integrating systems and software, training end-users, analyzing algorithms, modifying source-code, writing system instructions, debugging, and maintaining operating systems

Stuti Suthar

DevOps: To communicate effectively, improve visibility across the CI/CD pipeline and constantly learn new things.

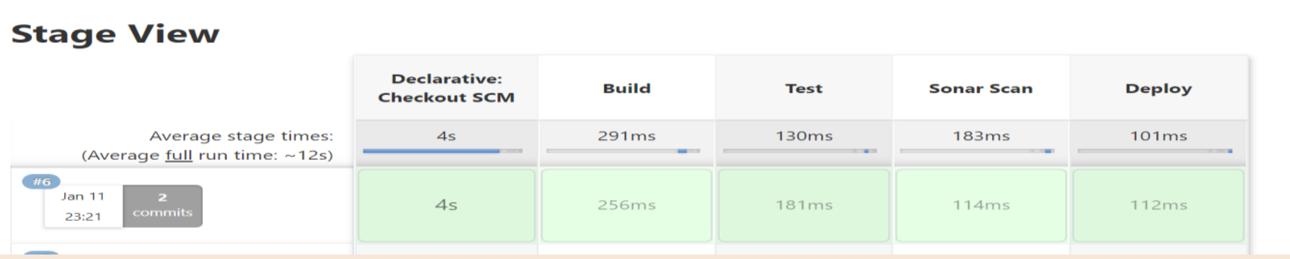
Utkarsh Deshmukh

Quality Analyst:- responsible for developing and supporting the planning, design, and execution of test plans, test scripts, and process plans for projects

HOW FREQUENTLY DEPLOY ON PRODUCTION?

It is advised to adopt continuous deployment, if you're doing continuous delivery, you have the option of releasing as frequently as you like—every day, every month, or even every hour. But in our case, we deployed on a weekly basis. Keeping in mind the code quality.

CYCLE TIME TO BUILD/ TEST/ DEPLOY.



Stage View

	Declarative: Checkout SCM	Build	Test	Sonar Scan	Deploy
Average stage times: (Average full run time: ~12s)	4s	291ms	130ms	183ms	101ms
#6 Jan 11 23:21 2 commits	4s	256ms	181ms	114ms	112ms

AGILE PRACTICES PRACTICES FOLLOWED

Using an iterative framework, the Agile methodology relies upon the interaction of self-organizing teams of people who have the cross-functional skillsets required to develop tested, working software. The most commonly used programming practices – test-driven development, code refactoring, continuous integration, simple code design, pair programming, a common codebase and a single coding standard – contribute to the quality, flexibility and sustainability of the software.

- Working software is the primary measure of progress.
- Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
- Continuous attention to technical excellence and good design enhances agility.
- Simplicity – the art of maximizing the amount of work not done – is essential.
- The best architectures, requirements, and designs emerge from self-organizing teams.
- At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

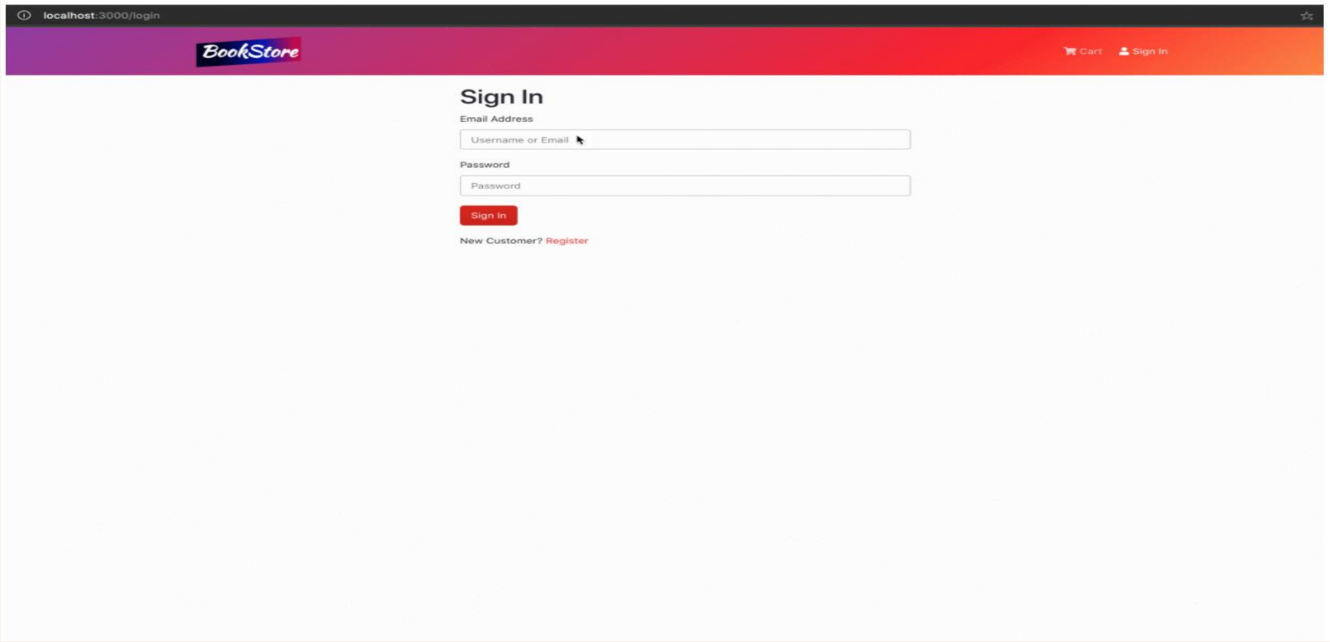
DEVOPS PRACTICES FOLLOWED

DevOps practices reflect the idea of continuous improvement and automation. Many practices focus on one or more development cycle phases. These practices include:

- Continuous development. This practice spans the planning and coding phases of the DevOps lifecycle. Version-control mechanisms might be involved.
- Continuous testing. This practice incorporates automated, prescheduled, continued code tests as application code is being written or updated. Such tests can speed the delivery of code to production.
- Continuous integration (CI). This practice brings configuration management (CM) tools together with other test and development tools to track how much of the code being developed is ready for production. It involves rapid feedback between testing and development to quickly identify and resolve code issues.
- Continuous delivery. This practice automates the delivery of code changes, after testing, to a preproduction or staging environment. A staff member might then decide to promote such code changes into production.
- Continuous deployment (CD). Similar to continuous delivery, this practice automates the release of new or changed code into production. A company doing continuous deployment might release code or feature changes several times per day. The use of container technologies, such as Docker and Kubernetes, can enable continuous deployment by helping to maintain consistency of the code across different deployment platforms and environments.
- Continuous monitoring. This practice involves ongoing monitoring of both the code in operation and the underlying infrastructure that supports it. A feedback loop that reports on bugs or issues then makes its way back to development.
- Infrastructure as code. This practice can be used during various DevOps phases to automate the provisioning of infrastructure required for a software release. Developers add infrastructure “code” from within their existing development tools.

SCREENSHOTS

Micro service



Sign In

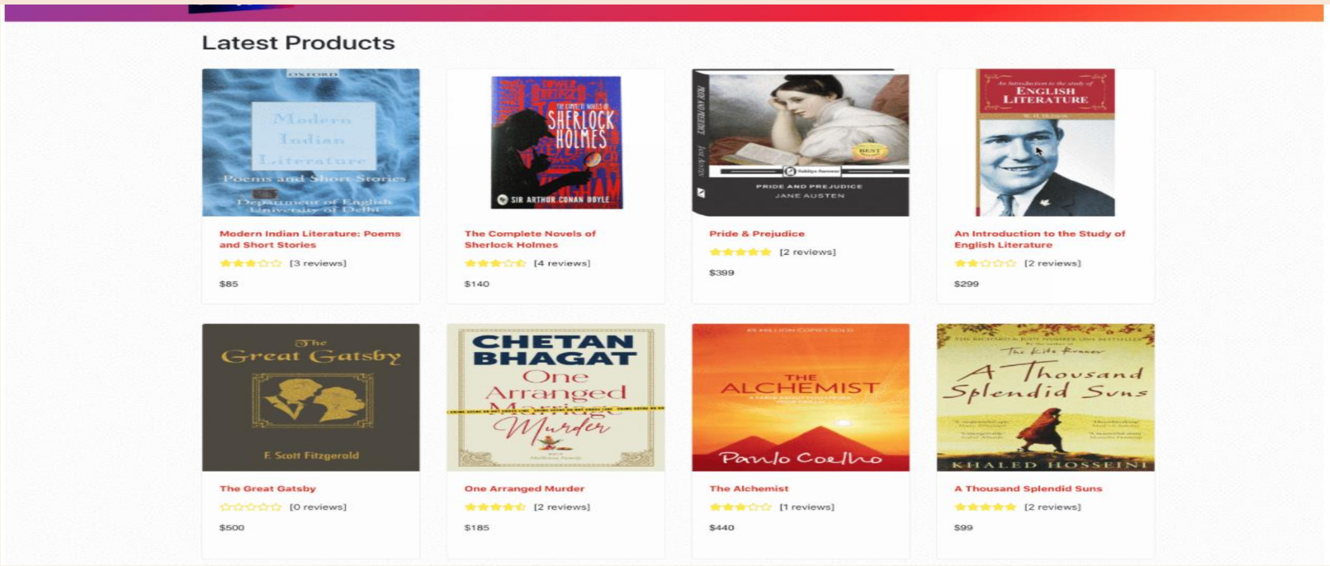
Email Address

Username or Email

Password

Password

New Customer? Register



Latest Products

Modern Indian Literature: Poems and Short Stories
[3 reviews]
$85

The Complete Novels of Sherlock Holmes
[4 reviews]
$140

Pride & Prejudice
[2 reviews]
$399

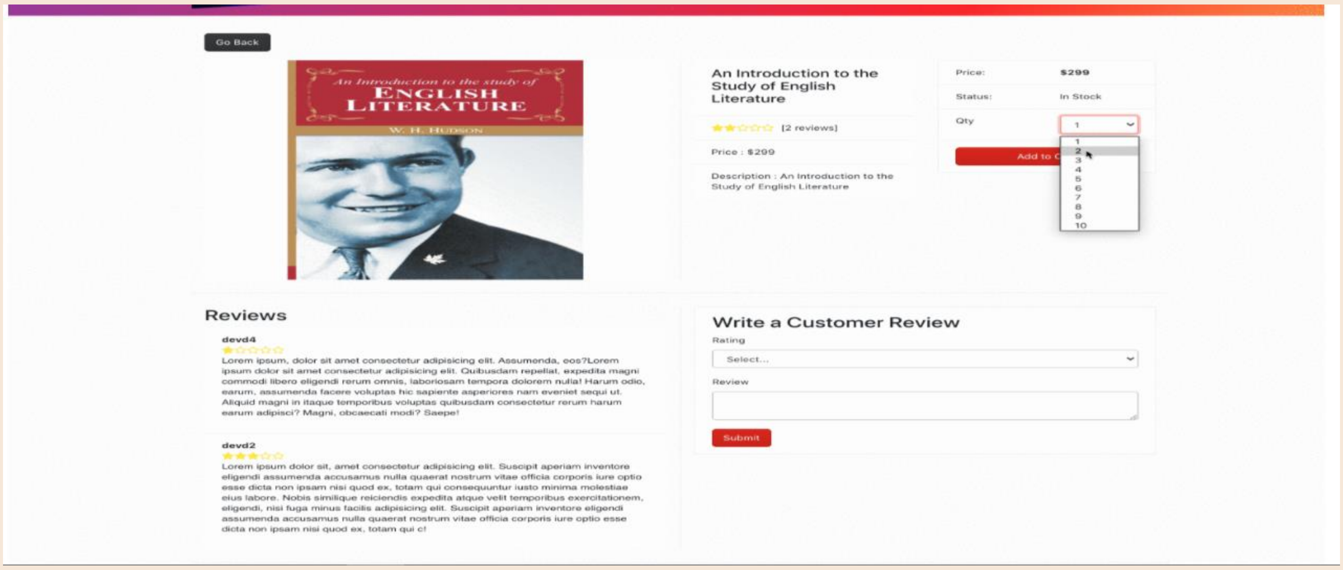
An Introduction to the Study of English Literature
[2 reviews]
$299

The Great Gatsby
[0 reviews]
$500

One Arranged Murder
[2 reviews]
$185

The Alchemist
[1 reviews]
$440

A Thousand Splendid Suns
[2 reviews]
$99



An Introduction to the Study of English Literature

[2 reviews]

Price : $299

Description : An Introduction to the Study of English Literature

Price:	$299
Status:	In Stock
Qty	1

Reviews

devd4

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Write a Customer Review

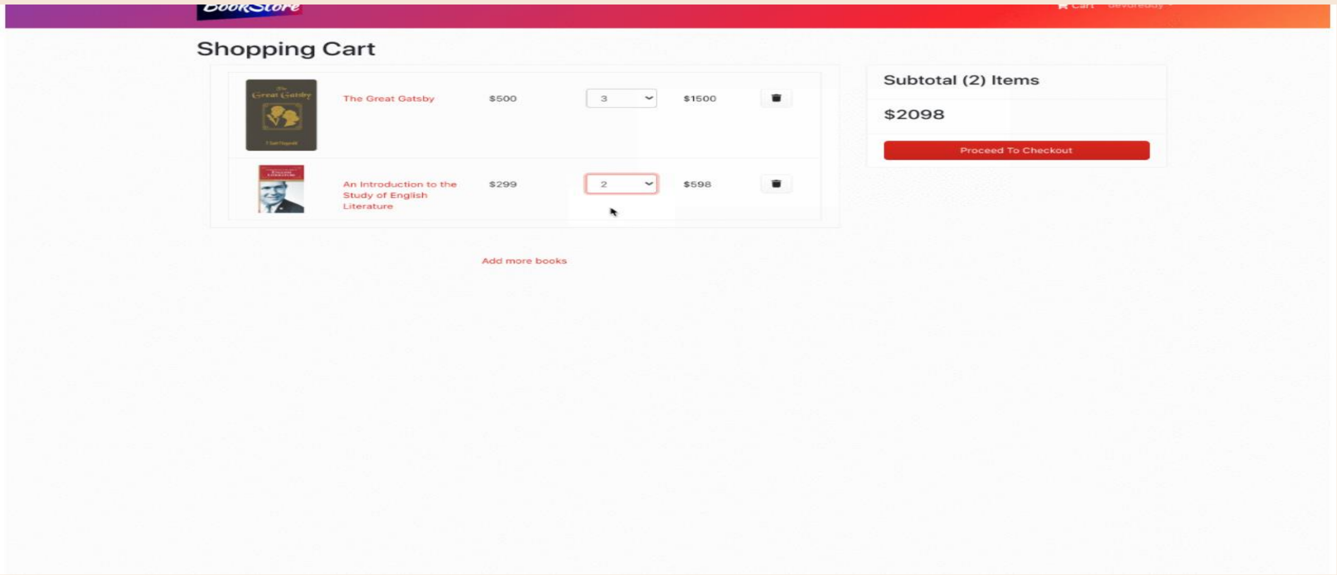
Rating

Select...

Review

SCREENSHOTS

Micro service

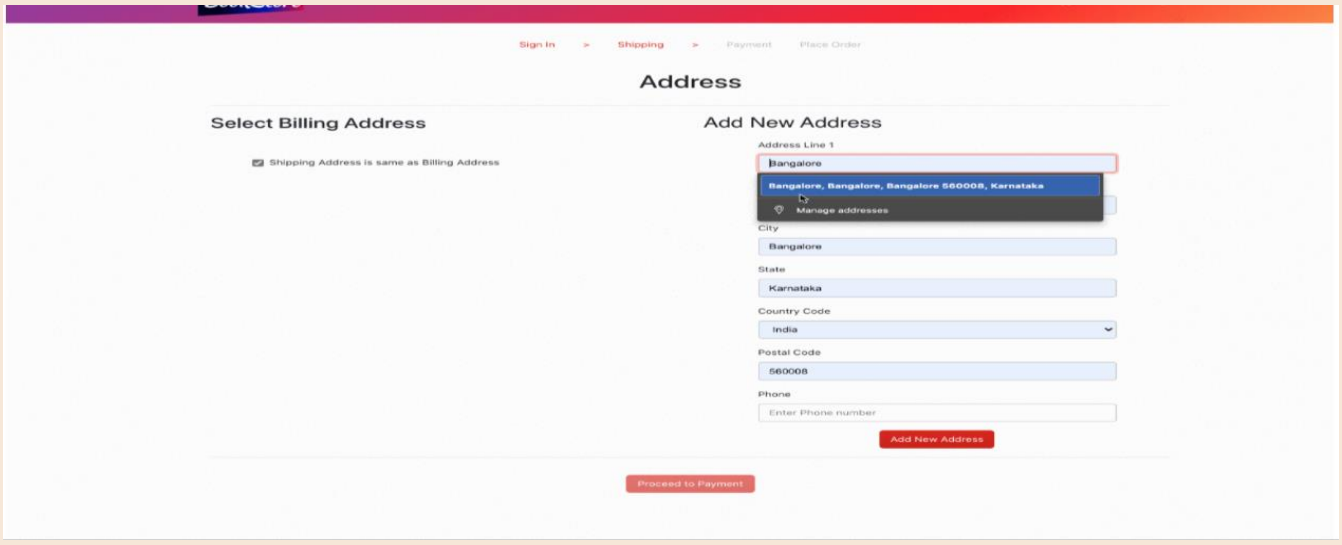


Shopping Cart

The Great Gatsby	$500	3	$1500	
An Introduction to the Study of English Literature	$299	2	$598	

Subtotal (2) Items

$2098



Address

Select Billing Address

☑ Shipping Address is same as Billing Address

Add New Address

Address Line 1: Bangalore

Bangalore, Bangalore, Bangalore 560008, Karnataka

Manage addresses

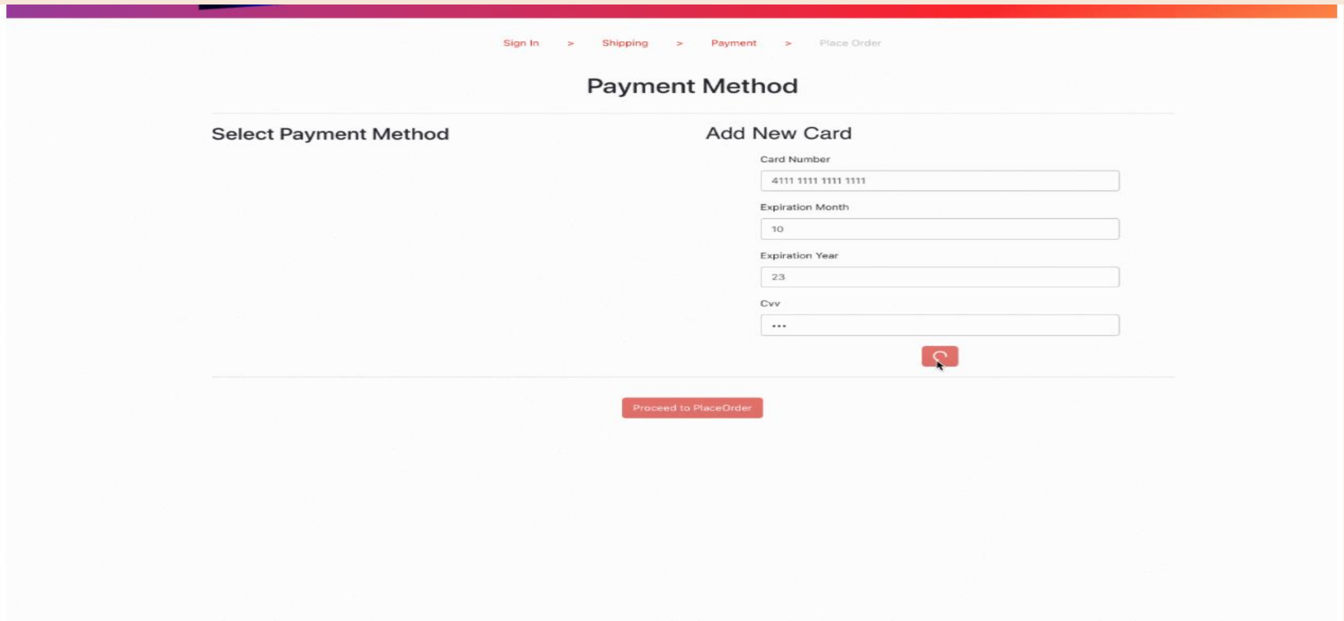
City: Bangalore

State: Karnataka

Country Code: India

Postal Code: 560008

Phone: Enter Phone number



Payment Method

Select Payment Method

Add New Card

Card Number: 4111 1111 1111 1111

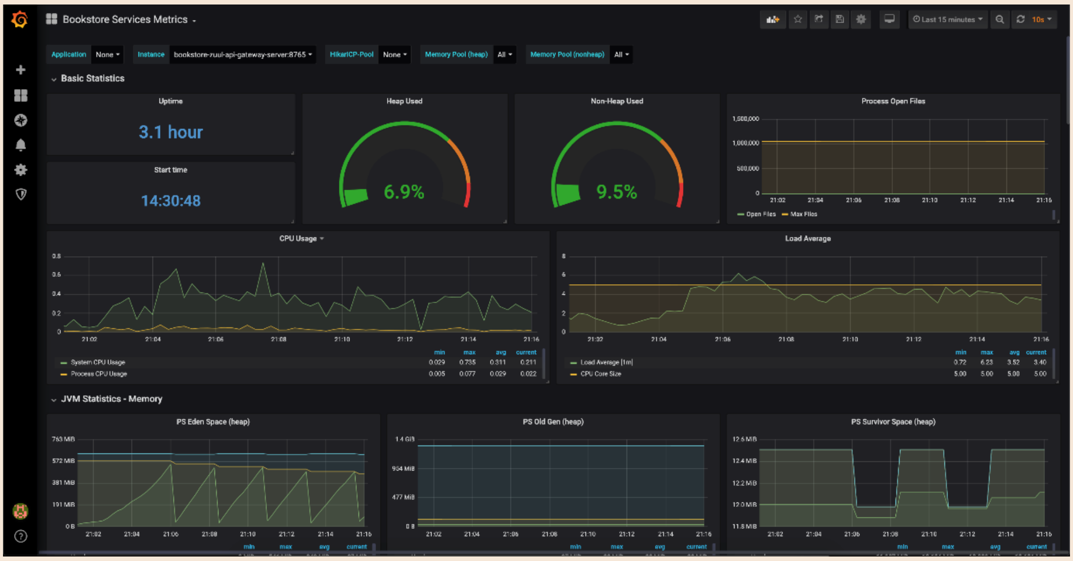
Expiration Month: 10

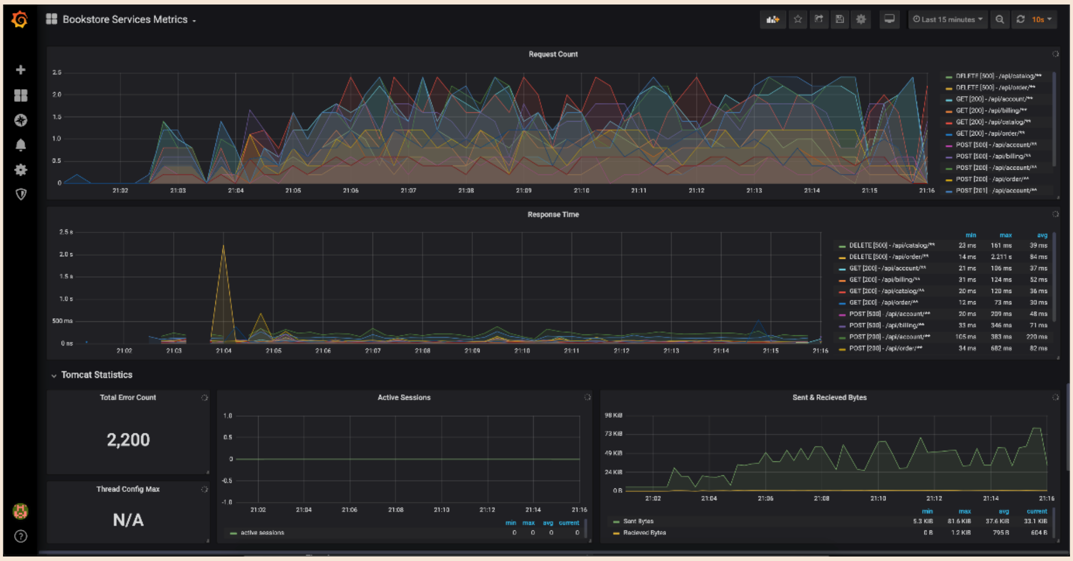
Expiration Year: 23

Cvv: •••

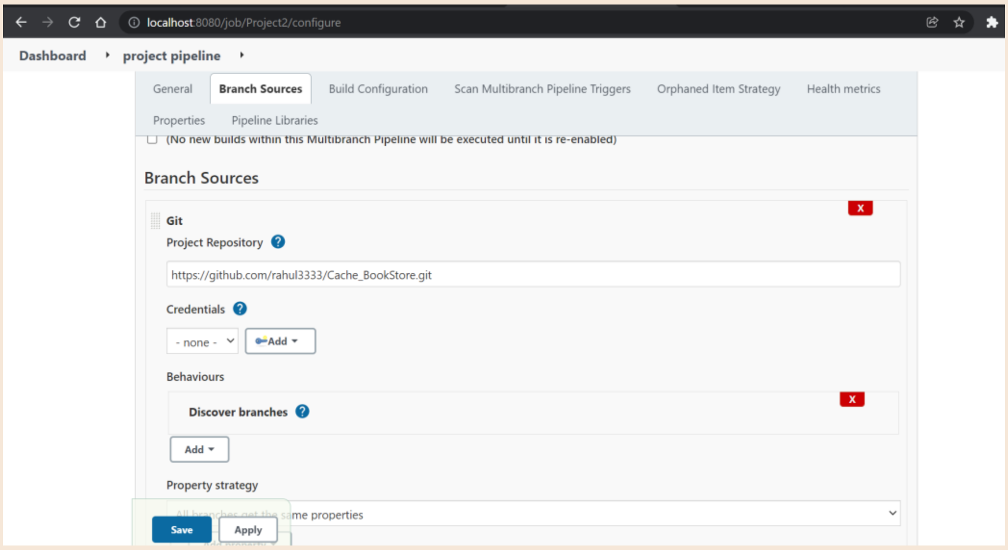
SCREENSHOTS

Graphana




Bookstore Services Metrics
Last 15 minutes
10s
Request Count
DELETE [500] - /api/catalog/**
DELETE [500] - /api/order/**
GET [200] - /api/account/**
GET [200] - /api/billing/**
GET [200] - /api/catalog/**
GET [200] - /api/order/**
POST [500] - /api/account/**
POST [500] - /api/billing/**
POST [200] - /api/account/**
POST [200] - /api/order/**
POST [201] - /api/account/**
Response Time
min
max
avg
DELETE [500] - /api/catalog/** 23 ms 161 ms 39 ms
DELETE [500] - /api/order/** 14 ms 2.211 s 84 ms
GET [200] - /api/account/** 21 ms 106 ms 37 ms
GET [200] - /api/billing/** 31 ms 124 ms 52 ms
GET [200] - /api/catalog/** 20 ms 120 ms 36 ms
GET [200] - /api/order/** 12 ms 73 ms 30 ms
POST [500] - /api/account/** 20 ms 209 ms 48 ms
POST [500] - /api/billing/** 33 ms 346 ms 71 ms
POST [200] - /api/account/** 105 ms 383 ms 220 ms
POST [200] - /api/order/** 34 ms 682 ms 82 ms
Tomcat Statistics
Total Error Count
2,200
Thread Config Max
N/A
Active Sessions
active sessions
Sent & Recieved Bytes
Sent Bytes
Recieved Bytes

Jenkins



□ (No new builds within this Multibranch Pipeline will be executed until it is re-enabled)

Branch Sources

Git

Project Repository: https://github.com/rahul3333/Cache_BookStore.git

Credentials: - none -

Behaviours

Discover branches

Property strategy: All branches get the same properties

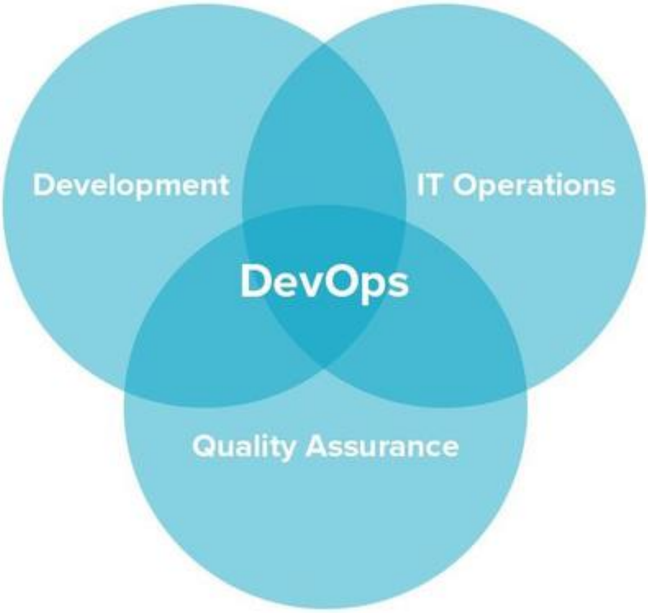
CURRENT ISSUES FACED

- Faced difficulty during the installation of the tools in the local system.
- Several codes were merged in the local branch and then pushed to the master which led to several inconsistencies in the existing project.
- The versions of the software required for a smooth running of the project were not of the local system supported and lower versions of the same were installed in the project.

RECOMMENDATION

- Today, DevOps is one of the most discussed software development approaches. It is applied in Facebook, Netflix, Amazon, Etsy, and many other industry-leading companies. So, if you are considering embracing DevOps for the sake of better performance, business success, and competitiveness, you take the first step and learn how DevOps work.

- It’s a practice that aims at merging development, quality assurance, and operations (deployment and integration) into a single, continuous set of processes. This methodology is a natural extension of Agile and continuous delivery approaches.



THANK YOU