

CAPSTONE PROJECT E-COMMERCE APPLICATION

BATCH-8-JAVA J2EE

Name:- Ankit Chauhan

Batch:- 8 (JAVA J2EE)

Group-4(ecommerce-application):

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Objective:

Develop a comprehensive eCommerce application using Spring Microservices with features for authentication, product management, cart management (including item entry), order processing, and customer management.

Phases & Tasks:

Planning:

- **Requirements Gathering (1 day):**
 - Identify required microservices: Auth-Service, Customer-Service, Product-Service, Cart-Service, Order-Service.
 - Define the interactions between services via API Gateway.
- **Architecture Design (1 day):**
 - Design the microservices architecture.
 - Set up the Eureka Server for Service Registry and Discovery.
 - Set up the API Gateway for routing requests.

Development:

- **Day 1:**
 - **Eureka Server & API Gateway Setup:**
 - Set up Eureka Server for service registration and discovery.
 - Implement API Gateway to route requests to microservices.
- **Day 2:**
 - **Customer-Service Development:**
 - Develop CRUD operations for customer profiles.
 - Integrate with Auth-Service to handle customer data upon registration.
- **Day 3:**
 - **Product-Service Development:**
 - Build functionalities for managing products, including categories and search.
 - Implement APIs for product CRUD operations.
- **Day 4-5:**
 - **Cart-Service Development:**
 - Develop features for managing the shopping cart, including adding, updating, and deleting items.
 - Integrate with Product-Service to fetch product details.
 - Implement the item_entry table to store individual cart items.
- **Day 6:**

- **Order-Service Development:**
 - Implement order processing functionalities, including placing orders and tracking status.
 - Integrate with Cart-Service to process the cart items during order placement.
- **Day 7-8:**
 - **Auth-Service Development:**
 - Create registration and login functionalities.
 - Implement JWT token generation and validation for secure access.

Microservices

1. E-commerce Service Registry (Eureka Server)

- **Service Discovery:** Enables dynamic discovery and registration of microservices.
- **Load Balancing:** Distributes requests across available service instances.
- **Monitoring:** Provides a UI for tracking service health and status.

2. E-commerce API Gateway

- **Centralized Routing:** Directs client requests to the appropriate microservices.
- **Security:** Implements authentication and authorization at the gateway level.
- **Traffic Management:** Handles load balancing, rate limiting, and API monitoring.

3. E-commerce Config Server

- **Centralized Configuration:** Manages and serves externalized configurations for microservices.
- **Environment Support:** Provides environment-specific configurations (e.g., dev, prod).
- **Dynamic Updates:** Allows microservices to refresh configurations without downtime.

4. Customer Service

- **Profile Management:** Manages customer profiles, including personal details and addresses.
- **Order History:** Provides access to customer order history and status updates.

- Authentication Integration: Secures customer data through integration with the Authentication Service.

5. Authentication Service

- User Management: Handles user registration, login, and role-based access.
- JWT Security: Secures API access with JWT-based authentication.
- Password and Session Management: Manages user sessions and password resets.

6. Product Service

- Product Catalogue: Manages product listings, categories, and details.
- Search & Filter: Provides search and filtering options for products.
- Inventory Check: Ensures product availability before purchase.

7. Cart Service

- Cart Management: Manages the user's shopping cart, including adding, updating, and removing items.
- Persistent Cart: Maintains the cart state across user sessions.
- Checkout Preparation: Prepares the cart for the order placement process.

8. Order Service

- Order Lifecycle Management: Oversees order placement, payment, and status updates.
- Payment Integration: Processes payments securely.
- Order Tracking: Provides real-time order tracking and history.

Database Design

- Tables:
 - users: id, shipping_address ,user_name, password, user_email, role

1 • `SELECT * FROM auth_service_db.user;`

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

	id	password	role	shipping_address	user_email	user_name
▶	1	\$2a\$10\$8FL0PhFCzubq.3ZBhTzU3ORqF73MFM...	ROLE_USER	NULL	NULL	Ankit chauhan
	2	\$2a\$10\$j/qbv4.QCUqdmulydLnUTuqB72DCh1/K...	ROLE_USER	vikas nagar, kanpur	shibbi@gmail.com	shivangi singh
	52	\$2a\$10\$9tbrh9Enny2phmQKHT9biO1J.s4brEO...	ROLE_USER	vikas nagar, kanpur	vishal@gmail.com	vishal srivastav
	102	\$2a\$10\$S4WFUDTTWrjhJTKCa/aUa.A/eyW5cIZ...	ROLE_USER	sharda nagar, kanpur	ankitchauhan@gmail.com	ankit chauhan
	152	\$2a\$10\$CaBrc.I0N.wkRHVIP5gOMBHyxGdD4q...	ROLE_USER	sharda nagar, kanpur	vijay@gmail.com	vijay chauhan
	202	\$2a\$10\$6hAN7KZQ3xHBUo7fjLH5IOyQzzfXBTY...	ROLE_USER	sharda nagar, kanpur	jps@gmail.com	jps chauhan
	252	\$2a\$10\$Xv3Z9vGNak7b.d7WfpsMBuTIawsh3L...	ROLE_USER	dummy address	dummy@gmail.com	DUMMY USER
	NULL	NULL	NULL	NULL	NULL	NULL

user 1 x Apply Revert

- customers: customer_id, customer_name, customer_email, shipping_address

1 • `SELECT * FROM customer_db.customer;`

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

	customer_id	customer_email	customer_name	shipping_address
▶	52	vishal@gmail.com	vishal srivastav	vikas nagar, kanpur
	102	ankitchauhan@gmail.com	ankit chauhan	sharda nagar, kanpur
	152	vijay@gmail.com	vijay chauhan	sharda nagar, kanpur
	202	jps@gmail.com	jps chauhan	sharda nagar, kanpur
	252	dummy@gmail.com	DUMMY USER	dummy address
*	NULL	NULL	NULL	NULL

customer 1 x Apply Revert

- products: id, name, description, price, category, stock, available

Limit to 1000 rows

```
1 • SELECT * FROM ecommerce_db.product;
```

	id	available	category	description	name	price	stock
▶	1	1	mobile	APTURE THE NIGHT IN LOW LIGHT: Whether y...	Samsung s-23	75000	100
	2	1	mobile	DYNAMIC ISLAND COMES TO IPHONE 15 — Dy...	Apple iPhone 15	72000	10
	3	1	laptop	【6-core AMD Ryzen 5 5600H】Run your games s...	HP Victus	58000	100
	4	0	laptop	Gaming 3 Laptop AMD Ryzen 5 5500H 15.6 (39...	Lenovo IdeaPad	46000	40
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

product 1 x Apply Revert

- carts: cart_id, customer_id, cart_price

Limit to 1000 rows

```
1 • SELECT * FROM cart_db.cart;
```

	cart_id	cart_price	customer_id
▶	402	58000.00	52
	452	58000.00	102
	502	116000.00	202
*	NULL	NULL	NULL

cart 1 x Apply Revert

- item_entry: item_entry_id, cart_id, product_id, quantity, product_price, product_name

1 • `SELECT * FROM cart_db.item_entry;`

Limit to 1000 rows

Result Grid

	item_entry_id	product_id	product_name	product_price	quantity	cart_id
▶	302	3	HP Victus	58000	1	402
	352	3	HP Victus	58000	1	452
	402	3	HP Victus	58000	2	502
*	NULL	NULL	NULL	NULL	NULL	NULL

item_entry 1 x

Apply Revert

- customer_orders: order_id, customer_id, customer_name, delivered, paid, shipping_address

1 • `SELECT * FROM order_db.customer_order;`

Limit to 1000 rows

Result Grid

	order_id	customer_id	customer_name	delivered	paid	price	shipping_address
▶	102	52	vishal srivastav	0	0	58000.00	vikas nagar, kanpur
	152	102	ankit chauhan	0	0	58000.00	sharda nagar, kanpur
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

customer_order 1 x

Apply Revert

- order_items: order_item_id, order_id, product_id, product_price, quantity, product_name

1 • `SELECT * FROM order_db.order_item;`

Limit to 1000 rows

Result Grid

order_item_id	product_id	product_name	product_price	quantity	order_id
152	3	HP Victus	58000	1	102
202	3	HP Victus	58000	1	152
NULL	NULL	NULL	NULL	NULL	NULL

Form Editor

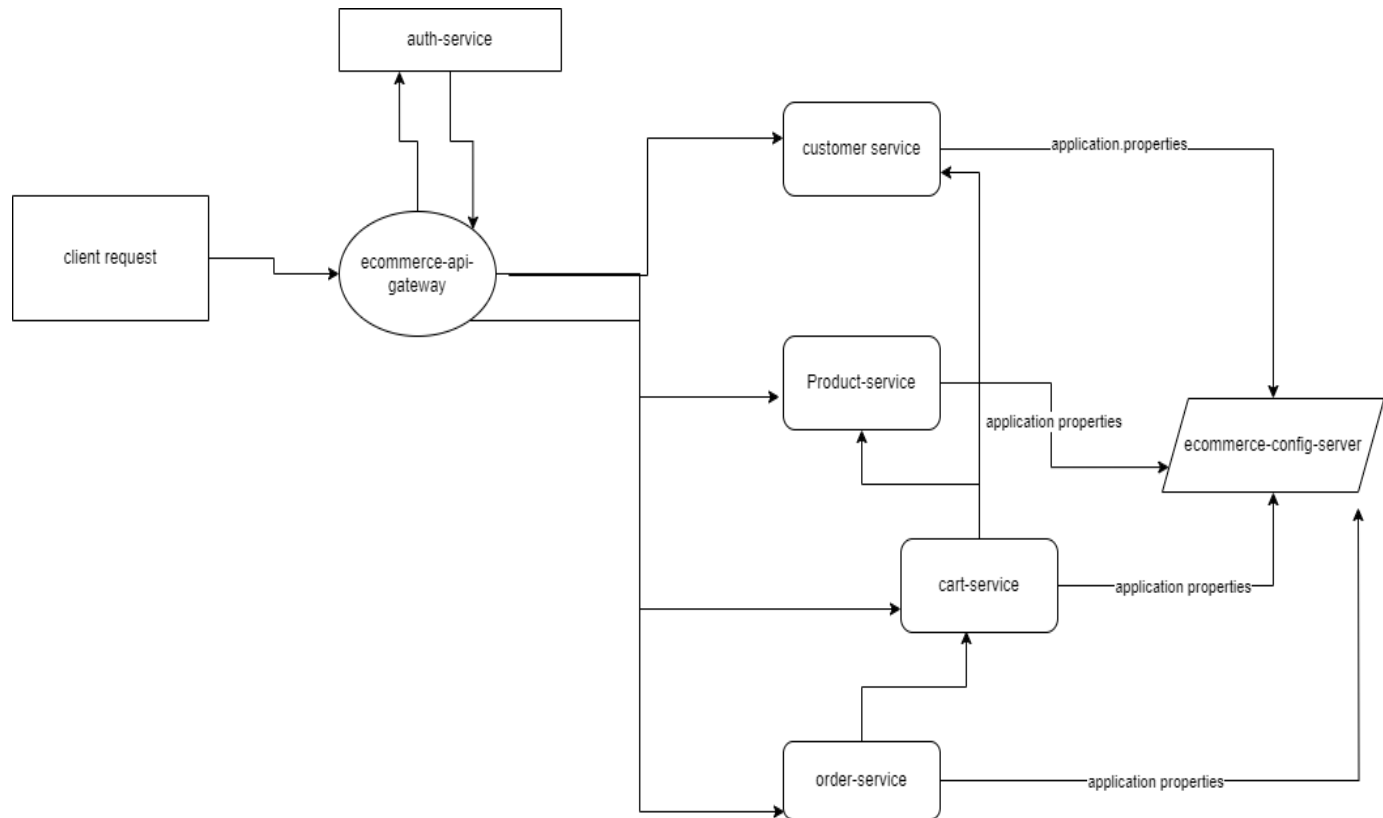
order_item 1 x Apply Revert

- **Relationships:**

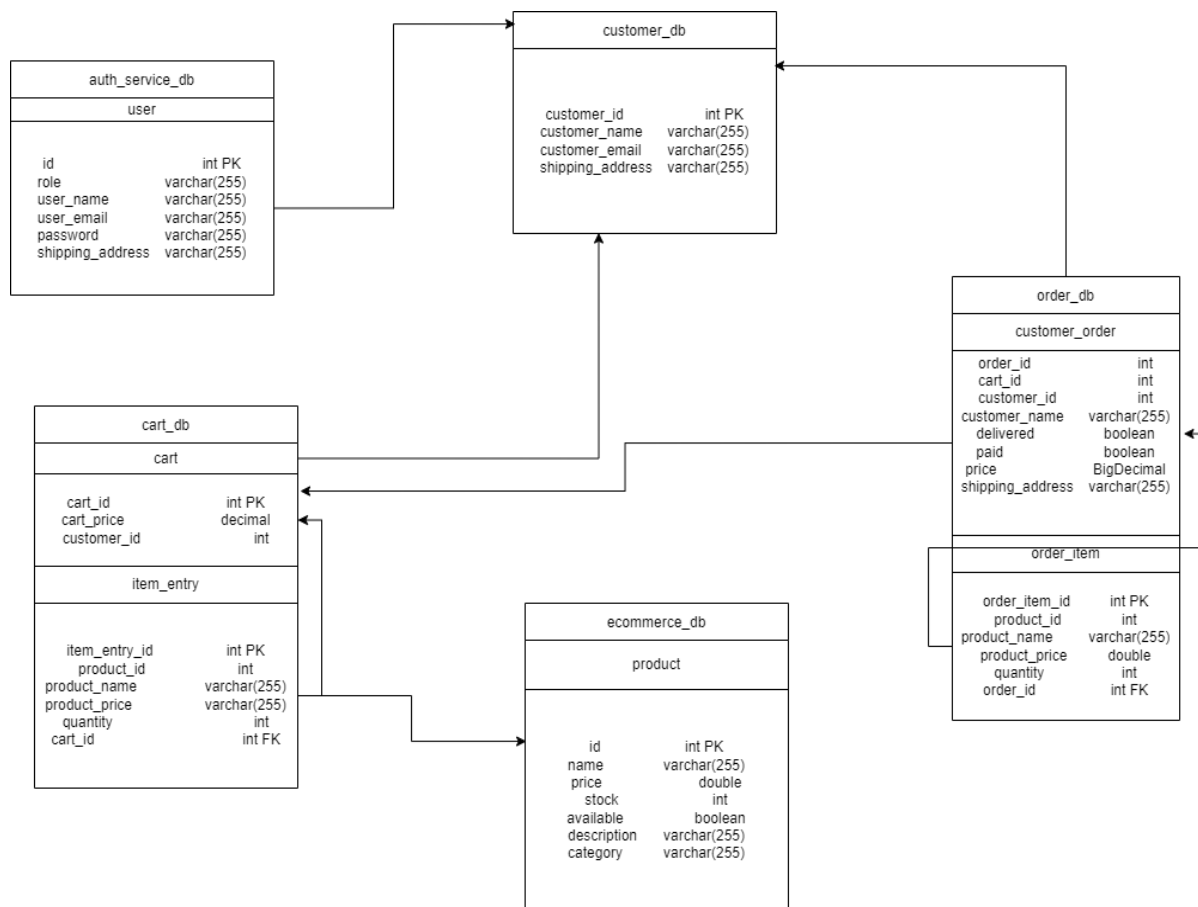
- The customers table links to users.
- The carts table links to users, and item_entry links to carts and products.
- The orders table links to customer and carts, and order_items links to orders and products.

use case diagrams:-

Flow Diagram:-



Database Flow Diagram:-



Postman Folder Structure :-

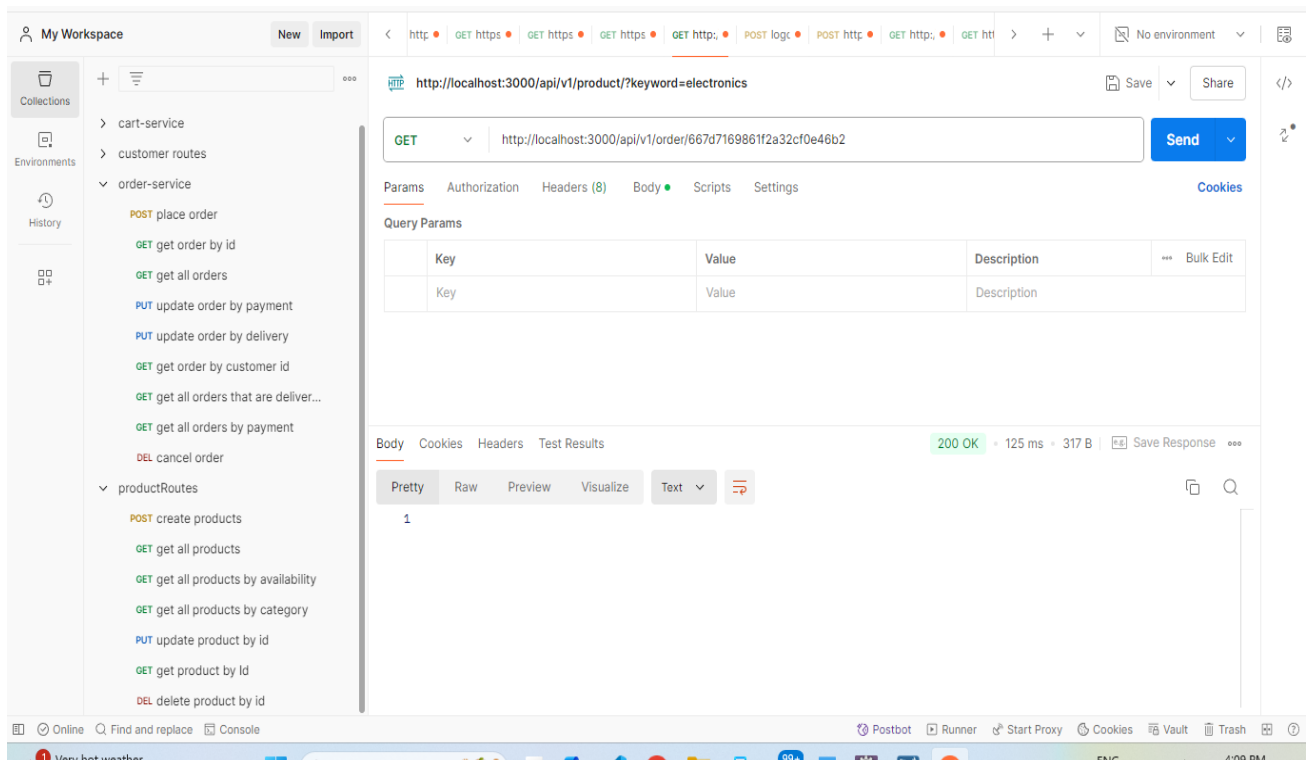
1.

The screenshot displays the Postman interface with a workspace named "My Workspace". The left sidebar shows a folder structure:

- auth-service**
 - POST register user
 - POST login
 - GET validate
- cart-service**
 - POST add to cart
 - GET get cart by customer id
 - PUT remove from cart
 - DEL delete entire cart
 - GET get cart by cart id
- customer routes**
 - GET find customer by id
 - GET get all customers
 - PUT update the customer
- order-service**
- productRoutes**

The main panel shows a GET request to `http://localhost:3000/api/v1/product?keyword=electronics`. The response status is 200 OK, with a response time of 125 ms and a body size of 317 B. The response body is displayed in the "Body" tab, showing a single item in a list.

2.



This is the Eureka Service where we show all Microservices:

DS Replicas			
localhost			
Instances currently registered with Eureka			
Application	AMIs	Availability Zones	Status
AUTH-SERVICE	n/a (1)	(1)	UP (1) - anabolic:auth-service:9092
CART-SERVICE	n/a (1)	(1)	UP (1) - anabolic:cart-service:9097
CUSTOMER-SERVICE	n/a (1)	(1)	UP (1) - anabolic:customer-service:9096
E-COMMERCE-API-GATEWAY	n/a (1)	(1)	UP (1) - anabolic:E-commerce-API-gateway:9098
ECOMMERCE-CONFIG-SERVER	n/a (1)	(1)	UP (1) - anabolic:ecommerce-config-server:8888
ORDER-SERVICE	n/a (1)	(1)	UP (1) - anabolic:order-service:9094
PRODUCT-SERVICE	n/a (1)	(1)	UP (1) - anabolic:Product-service:9093
General Info			
Name	Value		
total-avail-memory	74mb		

Running E-commerce-service-registry:-

```
ECommerceServiceRegistryApplication [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe (Sep 1, 2024, 12:00:01 PM) [pid: 3824]
Standard Commons Logging discovery in action with spring-jcl: please remove commons-logging.jar from classpath in order to avoid potential conflict

:: Spring Boot ::                (v3.3.2)

2024-09-01T12:00:05.057+05:30 INFO 3824 --- [E-commerce-service-registry] [main] c.w.ECommerceServiceRegistryApplication : Starting EC
2024-09-01T12:00:05.062+05:30 INFO 3824 --- [E-commerce-service-registry] [main] c.w.ECommerceServiceRegistryApplication : No active p
2024-09-01T12:00:07.154+05:30 INFO 3824 --- [E-commerce-service-registry] [main] o.s.cloud.context.scope.GenericScope : BeanFactory
2024-09-01T12:00:07.276+05:30 WARN 3824 --- [E-commerce-service-registry] [main] trationDelegate$BeanPostProcessorChecker : Bean 'org.s
2024-09-01T12:00:07.282+05:30 WARN 3824 --- [E-commerce-service-registry] [main] trationDelegate$BeanPostProcessorChecker : Bean 'defer
2024-09-01T12:00:07.827+05:30 INFO 3824 --- [E-commerce-service-registry] [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat init
2024-09-01T12:00:07.846+05:30 INFO 3824 --- [E-commerce-service-registry] [main] o.apache.catalina.core.StandardService : Starting se
2024-09-01T12:00:07.847+05:30 INFO 3824 --- [E-commerce-service-registry] [main] o.apache.catalina.core.StandardEngine : Starting Se
2024-09-01T12:00:07.971+05:30 INFO 3824 --- [E-commerce-service-registry] [main] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializin
2024-09-01T12:00:07.973+05:30 INFO 3824 --- [E-commerce-service-registry] [main] w.s.c.ServletWebServerApplicationContext : Root WebApp

Standard Commons Logging discovery in action with spring-jcl: please remove commons-logging.jar from classpath in order to avoid potential conflict
2024-09-01T12:00:09.483+05:30 INFO 3824 --- [E-commerce-service-registry] [main] c.n.n.d.provider.DiscoveryJerseyProvider : Using JSON
2024-09-01T12:00:09.484+05:30 INFO 3824 --- [E-commerce-service-registry] [main] c.n.n.d.provider.DiscoveryJerseyProvider : Using JSON
2024-09-01T12:00:09.759+05:30 INFO 3824 --- [E-commerce-service-registry] [main] c.n.n.d.provider.DiscoveryJerseyProvider : Using XML e
2024-09-01T12:00:09.759+05:30 INFO 3824 --- [E-commerce-service-registry] [main] c.n.n.d.provider.DiscoveryJerseyProvider : Using XML d
2024-09-01T12:00:11.133+05:30 WARN 3824 --- [E-commerce-service-registry] [main] igation$LoadBalancerCaffeineWarnLogger : Spring Clou
2024-09-01T12:00:11.174+05:30 INFO 3824 --- [E-commerce-service-registry] [main] o.s.c.n.eureka.InstanceInfoFactory : Setting ini
2024-09-01T12:00:11.214+05:30 INFO 3824 --- [E-commerce-service-registry] [main] com.netflix.discovery.DiscoveryClient : Initializin
2024-09-01T12:00:11.214+05:30 INFO 3824 --- [E-commerce-service-registry] [main] com.netflix.discovery.DiscoveryClient : Client conf
2024-09-01T12:00:11.218+05:30 INFO 3824 --- [E-commerce-service-registry] [main] com.netflix.discovery.DiscoveryClient : Discovery C
2024-09-01T12:00:11.290+05:30 INFO 3824 --- [E-commerce-service-registry] [main] c.n.eureka.DefaultEurekaServerContext : Initializin
2024-09-01T12:00:11.293+05:30 INFO 3824 --- [E-commerce-service-registry] [main] c.n.eureka.cluster.PeerEurekaNodes : Adding new
```

Running E-commerce-ApiGateway:-

The screenshot shows an IDE window titled "CommerceApiGatewayApplication [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe (Sep 1, 2024, 12:02:02 PM) [pid: 2204]". The console displays the following log messages:

```
:: Spring Boot :: (v3.3.2)  
2024-09-01T12:02:05.393+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] c.wipro.ECommerceApiGatewayApplication : Starting ECommer  
2024-09-01T12:02:05.398+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] c.wipro.ECommerceApiGatewayApplication : No active profil  
2024-09-01T12:02:07.670+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.cloud.context.scope.GenericScope : BeanFactory id=5  
2024-09-01T12:02:07.807+05:30 WARN 2204 --- [E-commerce-API-gateway] [ main] trationDelegate$BeanPostProcessorChecker : Bean 'org.spring  
2024-09-01T12:02:07.812+05:30 WARN 2204 --- [E-commerce-API-gateway] [ main] trationDelegate$BeanPostProcessorChecker : Bean 'deferringL  
2024-09-01T12:02:07.818+05:30 WARN 2204 --- [E-commerce-API-gateway] [ main] trationDelegate$BeanPostProcessorChecker : Bean 'org.spring  
2024-09-01T12:02:07.820+05:30 WARN 2204 --- [E-commerce-API-gateway] [ main] trationDelegate$BeanPostProcessorChecker : Bean 'org.spring  
2024-09-01T12:02:07.825+05:30 WARN 2204 --- [E-commerce-API-gateway] [ main] trationDelegate$BeanPostProcessorChecker : Bean 'reactorDef  
2024-09-01T12:02:09.320+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.c.g.r.RouteDefinitionRouteLocator : Loaded RoutePred  
2024-09-01T12:02:09.321+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.c.g.r.RouteDefinitionRouteLocator : Loaded RoutePred  
2024-09-01T12:02:09.321+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.c.g.r.RouteDefinitionRouteLocator : Loaded RoutePred  
2024-09-01T12:02:09.321+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.c.g.r.RouteDefinitionRouteLocator : Loaded RoutePred  
2024-09-01T12:02:09.321+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.c.g.r.RouteDefinitionRouteLocator : Loaded RoutePred  
2024-09-01T12:02:09.321+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.c.g.r.RouteDefinitionRouteLocator : Loaded RoutePred  
2024-09-01T12:02:09.321+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.c.g.r.RouteDefinitionRouteLocator : Loaded RoutePred  
2024-09-01T12:02:09.321+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.c.g.r.RouteDefinitionRouteLocator : Loaded RoutePred  
2024-09-01T12:02:09.322+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.c.g.r.RouteDefinitionRouteLocator : Loaded RoutePred  
2024-09-01T12:02:09.322+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.c.g.r.RouteDefinitionRouteLocator : Loaded RoutePred  
2024-09-01T12:02:09.322+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.c.g.r.RouteDefinitionRouteLocator : Loaded RoutePred  
2024-09-01T12:02:09.323+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.c.g.r.RouteDefinitionRouteLocator : Loaded RoutePred  
2024-09-01T12:02:09.323+05:30 INFO 2204 --- [E-commerce-API-gateway] [ main] o.s.b.a.e.web.EndpointLinksResolver : Exposing 1 endpo
```

Running Ecommerce-config-server:-

```
ECommerceServiceR... ECommerceApiGate... EcommerceConfigSe... X AuthServiceApplic... CustomerServiceA... ProductServiceAp...
1 package com.wipro;

Problems Servers Terminal Data Source Explorer Properties Console X
EcommerceConfigServerApplication [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe (Sep 1, 2024, 12:03:11 PM) [pid: 7040]

:: Spring Boot :: (v3.3.3)

2024-09-01T12:03:14.964+05:30 INFO 7040 --- [ecommerce-config-server] [main] c.w.EcommerceConfigServerApplication : Starting EcommerceConfigServerApplication
2024-09-01T12:03:14.970+05:30 INFO 7040 --- [ecommerce-config-server] [main] c.w.EcommerceConfigServerApplication : No active profile
2024-09-01T12:03:17.448+05:30 INFO 7040 --- [ecommerce-config-server] [main] o.s.cloud.context.scope.GenericScope : BeanFactory id=
2024-09-01T12:03:17.582+05:30 WARN 7040 --- [ecommerce-config-server] [main] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework
2024-09-01T12:03:17.588+05:30 WARN 7040 --- [ecommerce-config-server] [main] trationDelegate$BeanPostProcessorChecker : Bean 'deferringLoadBalance
2024-09-01T12:03:18.169+05:30 INFO 7040 --- [ecommerce-config-server] [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initiali
2024-09-01T12:03:18.191+05:30 INFO 7040 --- [ecommerce-config-server] [main] o.apache.catalina.core.StandardService : Starting service
2024-09-01T12:03:18.191+05:30 INFO 7040 --- [ecommerce-config-server] [main] o.apache.catalina.core.StandardEngine : Starting Servlet
2024-09-01T12:03:18.335+05:30 INFO 7040 --- [ecommerce-config-server] [main] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Sp
2024-09-01T12:03:18.336+05:30 INFO 7040 --- [ecommerce-config-server] [main] w.s.c.ServletWebServerApplicationContext : Root WebApplica
2024-09-01T12:03:23.123+05:30 INFO 7040 --- [ecommerce-config-server] [main] DiscoveryClientOptionalArgsConfiguration : Eureka HTTP Cli
2024-09-01T12:03:23.294+05:30 WARN 7040 --- [ecommerce-config-server] [main] igation$LoadBalancerCaffeineWarnLogger : Spring Cloud Lo
2024-09-01T12:03:23.314+05:30 INFO 7040 --- [ecommerce-config-server] [main] o.s.b.a.e.web.EndpointLinksResolver : Exposing 1 endp
2024-09-01T12:03:23.413+05:30 INFO 7040 --- [ecommerce-config-server] [main] o.s.c.n.eureka.InstanceInfoFactory : Setting initial
2024-09-01T12:03:23.453+05:30 INFO 7040 --- [ecommerce-config-server] [main] com.netflix.discovery.DiscoveryClient : Initializing Eu
2024-09-01T12:03:23.461+05:30 INFO 7040 --- [ecommerce-config-server] [main] c.n.d.s.r.aws.ConfigClusterResolver : Resolving eureka
2024-09-01T12:03:23.478+05:30 INFO 7040 --- [ecommerce-config-server] [main] com.netflix.discovery.DiscoveryClient : Disable delta p
2024-09-01T12:03:23.478+05:30 INFO 7040 --- [ecommerce-config-server] [main] com.netflix.discovery.DiscoveryClient : Single vip regi
2024-09-01T12:03:23.478+05:30 INFO 7040 --- [ecommerce-config-server] [main] com.netflix.discovery.DiscoveryClient : Force full regi
2024-09-01T12:03:23.478+05:30 INFO 7040 --- [ecommerce-config-server] [main] com.netflix.discovery.DiscoveryClient : Application is
2024-09-01T12:03:23.478+05:30 INFO 7040 --- [ecommerce-config-server] [main] com.netflix.discovery.DiscoveryClient : Registered Appl
2024-09-01T12:03:23.478+05:30 INFO 7040 --- [ecommerce-config-server] [main] com.netflix.discovery.DiscoveryClient : Application ver
2024-09-01T12:03:23.478+05:30 INFO 7040 --- [ecommerce-config-server] [main] com.netflix.discovery.DiscoveryClient : Getting all ins
```

Running Auth-service:-

```
ECommerceServiceR... ECommerceApiGate... EcommerceConfigSe... X AuthServiceApplic... CustomerServiceA... ProductServiceAp...
1 package com.wipro;

Problems Servers Terminal Data Source Explorer Properties Console X
AuthServiceApplication [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe (Sep 1, 2024, 12:07:00 PM) [pid: 4308]

:: Spring Boot :: (v3.3.2)

2024-09-01T12:07:04.301+05:30 INFO 4308 --- [auth-service] [restartedMain] com.wipro.AuthServiceApplication : Starting AuthServiceApplic
2024-09-01T12:07:04.306+05:30 INFO 4308 --- [auth-service] [restartedMain] com.wipro.AuthServiceApplication : No active profile set, fal
2024-09-01T12:07:04.418+05:30 INFO 4308 --- [auth-service] [restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults
2024-09-01T12:07:04.419+05:30 INFO 4308 --- [auth-service] [restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related
2024-09-01T12:07:06.039+05:30 INFO 4308 --- [auth-service] [restartedMain] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data
2024-09-01T12:07:06.258+05:30 INFO 4308 --- [auth-service] [restartedMain] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data repos
2024-09-01T12:07:06.846+05:30 INFO 4308 --- [auth-service] [restartedMain] o.s.cloud.context.scope.GenericScope : BeanFactory id=50dadbb0a-54
2024-09-01T12:07:12.125+05:30 WARN 4308 --- [auth-service] [restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework
2024-09-01T12:07:12.128+05:30 WARN 4308 --- [auth-service] [restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'deferringLoadBalance
2024-09-01T12:07:12.779+05:30 INFO 4308 --- [auth-service] [restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with po
2024-09-01T12:07:12.803+05:30 INFO 4308 --- [auth-service] [restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2024-09-01T12:07:12.803+05:30 INFO 4308 --- [auth-service] [restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [
2024-09-01T12:07:12.890+05:30 INFO 4308 --- [auth-service] [restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedd
2024-09-01T12:07:12.892+05:30 INFO 4308 --- [auth-service] [restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext
2024-09-01T12:07:12.897+05:30 INFO 4308 --- [auth-service] [restartedMain] o.hibernate.jpa.internal.util.LogHelper : HHH000204: Processing Pers
2024-09-01T12:07:12.898+05:30 INFO 4308 --- [auth-service] [restartedMain] org.hibernate.Version : HHH000412: Hibernate ORM v
2024-09-01T12:07:12.898+05:30 INFO 4308 --- [auth-service] [restartedMain] o.h.c.internal.RegionFactoryInitiator : HHH000026: Second-level ca
2024-09-01T12:07:12.898+05:30 INFO 4308 --- [auth-service] [restartedMain] o.s.o.j.p.SpringPersistenceUnitInfo : No LoadTimeWeaver setup: i
2024-09-01T12:07:12.898+05:30 INFO 4308 --- [auth-service] [restartedMain] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting...
2024-09-01T12:07:12.898+05:30 INFO 4308 --- [auth-service] [restartedMain] com.zaxxer.hikari.pool.HikariPool : HikariPool-1 - Added conne
2024-09-01T12:07:12.898+05:30 INFO 4308 --- [auth-service] [restartedMain] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start compl
2024-09-01T12:07:12.898+05:30 INFO 4308 --- [auth-service] [restartedMain] o.h.e.t.j.p.i.JtaPlatformInitiator : HHH000489: No JTA platform
2024-09-01T12:07:12.898+05:30 INFO 4308 --- [auth-service] [restartedMain] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityMana
```

Running customer-service:-

```
ECommerceServiceR... ECommerceApiGate... EcommerceConfigSe... AuthServiceApplic... CustomerServiceA... ProductServiceAp...
1 package com.wipro;

Problems Servers Terminal Data Source Explorer Properties Console X
CustomerServiceApplication [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe (Sep 1, 2024, 12:05:49 PM) [pid: 9888]

:: Spring Boot :: (v3.3.3)

2024-09-01T12:05:54.576+05:30 INFO 9888 --- [customer-service] [ restartedMain] com.wipro.CustomerServiceApplication : Starting CustomerServi
2024-09-01T12:05:54.580+05:30 INFO 9888 --- [customer-service] [ restartedMain] com.wipro.CustomerServiceApplication : No active profile set,
2024-09-01T12:05:54.669+05:30 INFO 9888 --- [customer-service] [ restartedMain] o.s.c.c.c.ConfigServerConfigDataLoader : Fetching config from s
2024-09-01T12:05:54.669+05:30 INFO 9888 --- [customer-service] [ restartedMain] o.s.c.c.c.ConfigServerConfigDataLoader : Located environment: n
2024-09-01T12:05:54.673+05:30 INFO 9888 --- [customer-service] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property defa
2024-09-01T12:05:54.673+05:30 INFO 9888 --- [customer-service] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web rel
2024-09-01T12:05:56.663+05:30 INFO 9888 --- [customer-service] [ restartedMain] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring D
2024-09-01T12:05:56.844+05:30 INFO 9888 --- [customer-service] [ restartedMain] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data r
2024-09-01T12:05:57.317+05:30 INFO 9888 --- [customer-service] [ restartedMain] o.s.cloud.context.scope.GenericScope : BeanFactory id=27a1d4a
2024-09-01T12:05:57.955+05:30 WARN 9888 --- [customer-service] [ restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframew
2024-09-01T12:05:57.960+05:30 WARN 9888 --- [customer-service] [ restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'deferringLoadBal
2024-09-01T12:05:58.761+05:30 INFO 9888 --- [customer-service] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized wit
2024-09-01T12:05:58.782+05:30 INFO 9888 --- [customer-service] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomc
2024-09-01T12:05:58.782+05:30 INFO 9888 --- [customer-service] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engin
2024-09-01T12:05:58.865+05:30 INFO 9888 --- [customer-service] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring em
2024-09-01T12:05:58.867+05:30 INFO 9888 --- [customer-service] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationCon
2024-09-01T12:05:59.522+05:30 INFO 9888 --- [customer-service] [ restartedMain] org.hibernate.jpa.internal.util.LogHelper : HHH000204: Processing
2024-09-01T12:05:59.522+05:30 INFO 9888 --- [customer-service] [ restartedMain] org.hibernate.Version : HHH000412: Hibernate O
2024-09-01T12:05:59.758+05:30 INFO 9888 --- [customer-service] [ restartedMain] o.h.c.internal.RegionFactoryInitiator : HHH000026: Second-leve
2024-09-01T12:06:00.308+05:30 INFO 9888 --- [customer-service] [ restartedMain] o.s.o.j.p.SpringPersistenceUnitInfo : No LoadTimeWeaver setu
2024-09-01T12:06:00.344+05:30 INFO 9888 --- [customer-service] [ restartedMain] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Startin
2024-09-01T12:06:00.779+05:30 INFO 9888 --- [customer-service] [ restartedMain] com.zaxxer.hikari.pool.HikariPool : HikariPool-1 - Added c
2024-09-01T12:06:00.784+05:30 INFO 9888 --- [customer-service] [ restartedMain] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start c
```

Running Product-service:-

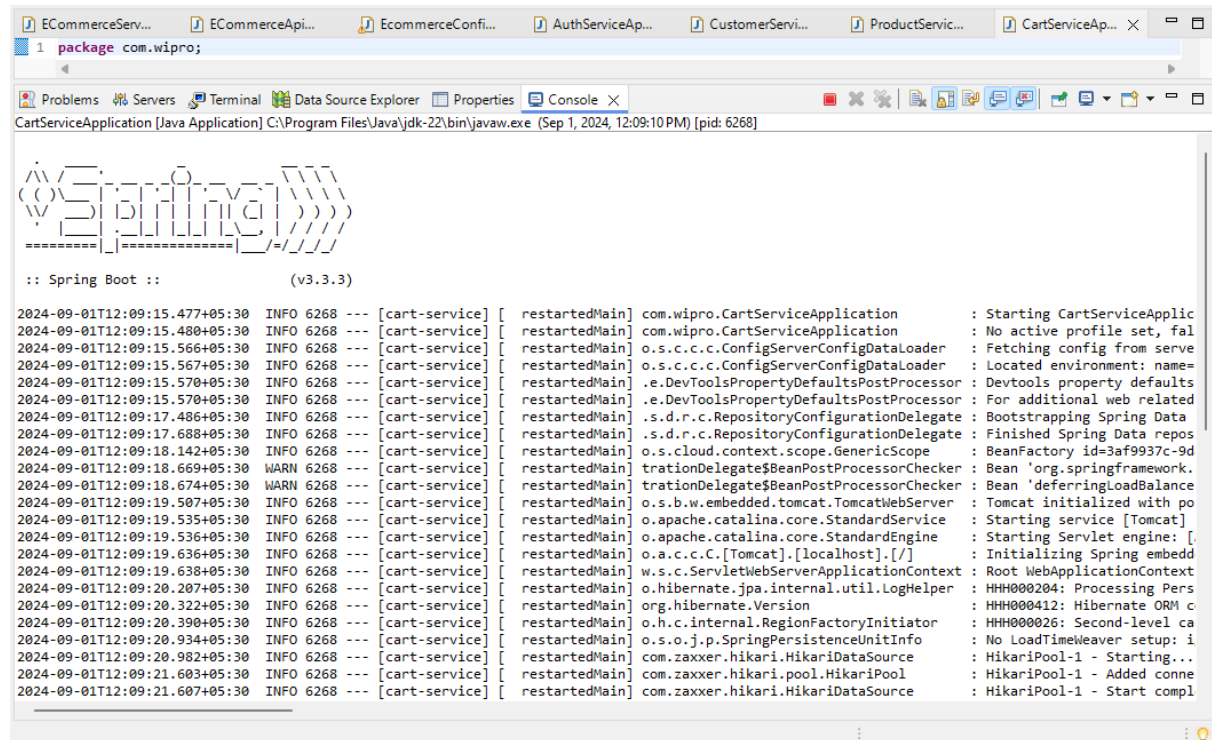
```
ECommerceServiceR... ECommerceApiGate... EcommerceConfigSe... AuthServiceApplic... CustomerServiceA... ProductServiceAp... X
2

Problems Servers Terminal Data Source Explorer Properties Console X
ProductServiceApplication [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe (Sep 1, 2024, 12:08:06 PM) [pid: 824]

:: Spring Boot :: (v3.3.3)

2024-09-01T12:08:11.366+05:30 INFO 824 --- [Product-service] [ restartedMain] com.wipro.ProductServiceApplication : Starting ProductServiceA
2024-09-01T12:08:11.371+05:30 INFO 824 --- [Product-service] [ restartedMain] com.wipro.ProductServiceApplication : No active profile set, f
2024-09-01T12:08:11.455+05:30 INFO 824 --- [Product-service] [ restartedMain] o.s.c.c.c.ConfigServerConfigDataLoader : Fetching config from ser
2024-09-01T12:08:11.456+05:30 INFO 824 --- [Product-service] [ restartedMain] o.s.c.c.c.ConfigServerConfigDataLoader : Located environment: nam
2024-09-01T12:08:11.460+05:30 INFO 824 --- [Product-service] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaul
2024-09-01T12:08:11.460+05:30 INFO 824 --- [Product-service] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web relat
2024-09-01T12:08:13.060+05:30 INFO 824 --- [Product-service] [ restartedMain] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Dat
2024-09-01T12:08:13.278+05:30 INFO 824 --- [Product-service] [ restartedMain] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data rep
2024-09-01T12:08:13.723+05:30 INFO 824 --- [Product-service] [ restartedMain] o.s.cloud.context.scope.GenericScope : BeanFactory id=437a8d30-
2024-09-01T12:08:13.947+05:30 WARN 824 --- [Product-service] [ restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframewor
2024-09-01T12:08:13.951+05:30 WARN 824 --- [Product-service] [ restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'deferringLoadBalan
2024-09-01T12:08:14.737+05:30 INFO 824 --- [Product-service] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with
2024-09-01T12:08:14.737+05:30 INFO 824 --- [Product-service] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat
2024-09-01T12:08:14.737+05:30 INFO 824 --- [Product-service] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine:
2024-09-01T12:08:14.902+05:30 INFO 824 --- [Product-service] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embe
2024-09-01T12:08:14.905+05:30 INFO 824 --- [Product-service] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationConte
2024-09-01T12:08:15.156+05:30 INFO 824 --- [Product-service] [ restartedMain] o.hibernate.jpa.internal.util.LogHelper : HHH000204: Processing Pe
2024-09-01T12:08:15.245+05:30 INFO 824 --- [Product-service] [ restartedMain] org.hibernate.Version : HHH000412: Hibernate ORM
2024-09-01T12:08:15.295+05:30 INFO 824 --- [Product-service] [ restartedMain] o.h.c.internal.RegionFactoryInitiator : HHH000026: Second-level
2024-09-01T12:08:15.804+05:30 INFO 824 --- [Product-service] [ restartedMain] o.s.o.j.p.SpringPersistenceUnitInfo : No LoadTimeWeaver setup:
2024-09-01T12:08:15.845+05:30 INFO 824 --- [Product-service] [ restartedMain] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting.
2024-09-01T12:08:16.358+05:30 INFO 824 --- [Product-service] [ restartedMain] com.zaxxer.hikari.pool.HikariPool : HikariPool-1 - Added con
2024-09-01T12:08:16.363+05:30 INFO 824 --- [Product-service] [ restartedMain] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start com
```


Running Cart-service:-

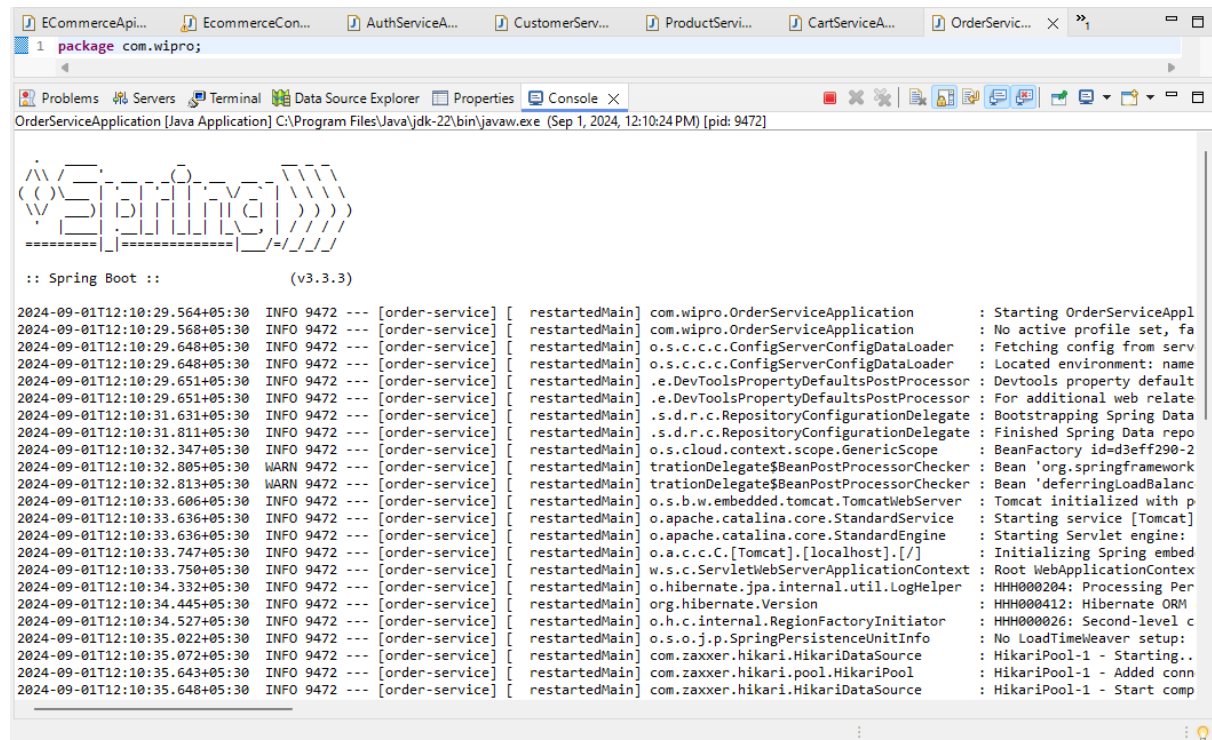


```
1 package com.wipro;

:: Spring Boot ::
(v3.3.3)

2024-09-01T12:09:15.477+05:30 INFO 6268 --- [cart-service] [ restartedMain] com.wipro.CartServiceApplication : Starting CartServiceApplic
2024-09-01T12:09:15.480+05:30 INFO 6268 --- [cart-service] [ restartedMain] com.wipro.CartServiceApplication : No active profile set, fal
2024-09-01T12:09:15.566+05:30 INFO 6268 --- [cart-service] [ restartedMain] o.s.c.c.c.ConfigServerConfigDataLoader : Fetching config from serve
2024-09-01T12:09:15.567+05:30 INFO 6268 --- [cart-service] [ restartedMain] o.s.c.c.c.ConfigServerConfigDataLoader : Located environment: name=
2024-09-01T12:09:15.570+05:30 INFO 6268 --- [cart-service] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults
2024-09-01T12:09:15.578+05:30 INFO 6268 --- [cart-service] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related
2024-09-01T12:09:17.486+05:30 INFO 6268 --- [cart-service] [ restartedMain] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data
2024-09-01T12:09:17.688+05:30 INFO 6268 --- [cart-service] [ restartedMain] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data repos
2024-09-01T12:09:18.142+05:30 INFO 6268 --- [cart-service] [ restartedMain] o.s.cloud.context.scope.GenericScope : BeanFactory id=3af9937c-9d
2024-09-01T12:09:18.669+05:30 WARN 6268 --- [cart-service] [ restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework
2024-09-01T12:09:18.674+05:30 WARN 6268 --- [cart-service] [ restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'deferringLoadBalance
2024-09-01T12:09:19.507+05:30 INFO 6268 --- [cart-service] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with po
2024-09-01T12:09:19.536+05:30 INFO 6268 --- [cart-service] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2024-09-01T12:09:19.536+05:30 INFO 6268 --- [cart-service] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [
2024-09-01T12:09:19.636+05:30 INFO 6268 --- [cart-service] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedd
2024-09-01T12:09:19.638+05:30 INFO 6268 --- [cart-service] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext
2024-09-01T12:09:20.207+05:30 INFO 6268 --- [cart-service] [ restartedMain] o.hibernate.jpa.internal.util.LogHelper : HHH000204: Processing Pers
2024-09-01T12:09:20.322+05:30 INFO 6268 --- [cart-service] [ restartedMain] org.hibernate.Version : HHH000412: Hibernate ORM c
2024-09-01T12:09:20.390+05:30 INFO 6268 --- [cart-service] [ restartedMain] o.h.c.internal.RegionFactoryInitiator : HHH000026: Second-level ca
2024-09-01T12:09:20.934+05:30 INFO 6268 --- [cart-service] [ restartedMain] o.s.o.j.p.SpringPersistenceUnitInfo : No LoadTimeWeaver setup: i
2024-09-01T12:09:20.982+05:30 INFO 6268 --- [cart-service] [ restartedMain] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting...
2024-09-01T12:09:21.603+05:30 INFO 6268 --- [cart-service] [ restartedMain] com.zaxxer.hikari.pool.HikariPool : HikariPool-1 - Added conn
2024-09-01T12:09:21.607+05:30 INFO 6268 --- [cart-service] [ restartedMain] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start compl
```

Running Order-service:-

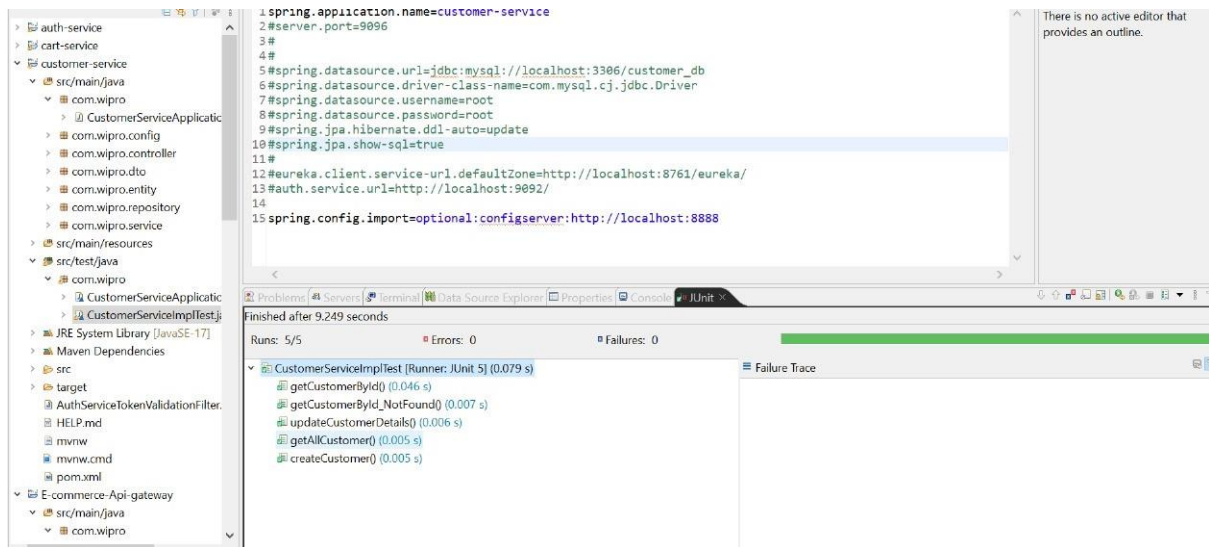


```
1 package com.wipro;

:: Spring Boot ::
(v3.3.3)

2024-09-01T12:10:29.564+05:30 INFO 9472 --- [order-service] [ restartedMain] com.wipro.OrderServiceApplication : Starting OrderServiceAppl
2024-09-01T12:10:29.568+05:30 INFO 9472 --- [order-service] [ restartedMain] com.wipro.OrderServiceApplication : No active profile set, fa
2024-09-01T12:10:29.648+05:30 INFO 9472 --- [order-service] [ restartedMain] o.s.c.c.c.ConfigServerConfigDataLoader : Fetching config from serv
2024-09-01T12:10:29.648+05:30 INFO 9472 --- [order-service] [ restartedMain] o.s.c.c.c.ConfigServerConfigDataLoader : Located environment: name
2024-09-01T12:10:29.651+05:30 INFO 9472 --- [order-service] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property default
2024-09-01T12:10:29.651+05:30 INFO 9472 --- [order-service] [ restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web relate
2024-09-01T12:10:31.631+05:30 INFO 9472 --- [order-service] [ restartedMain] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data
2024-09-01T12:10:31.811+05:30 INFO 9472 --- [order-service] [ restartedMain] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data repo
2024-09-01T12:10:32.347+05:30 INFO 9472 --- [order-service] [ restartedMain] o.s.cloud.context.scope.GenericScope : BeanFactory id=d3eff290-2
2024-09-01T12:10:32.805+05:30 WARN 9472 --- [order-service] [ restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'org.springframework
2024-09-01T12:10:32.813+05:30 WARN 9472 --- [order-service] [ restartedMain] trationDelegate$BeanPostProcessorChecker : Bean 'deferringLoadBalanc
2024-09-01T12:10:33.606+05:30 INFO 9472 --- [order-service] [ restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with p
2024-09-01T12:10:33.636+05:30 INFO 9472 --- [order-service] [ restartedMain] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2024-09-01T12:10:33.636+05:30 INFO 9472 --- [order-service] [ restartedMain] o.apache.catalina.core.StandardEngine : Starting Servlet engine:
2024-09-01T12:10:33.747+05:30 INFO 9472 --- [order-service] [ restartedMain] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embed
2024-09-01T12:10:33.750+05:30 INFO 9472 --- [order-service] [ restartedMain] w.s.c.ServletWebServerApplicationContext : Root WebApplicationConte
2024-09-01T12:10:34.332+05:30 INFO 9472 --- [order-service] [ restartedMain] o.hibernate.jpa.internal.util.LogHelper : HHH000204: Processing Per
2024-09-01T12:10:34.445+05:30 INFO 9472 --- [order-service] [ restartedMain] org.hibernate.Version : HHH000412: Hibernate ORM
2024-09-01T12:10:34.527+05:30 INFO 9472 --- [order-service] [ restartedMain] o.h.c.internal.RegionFactoryInitiator : HHH000026: Second-level c
2024-09-01T12:10:35.022+05:30 INFO 9472 --- [order-service] [ restartedMain] o.s.o.j.p.SpringPersistenceUnitInfo : No LoadTimeWeaver setup:
2024-09-01T12:10:35.072+05:30 INFO 9472 --- [order-service] [ restartedMain] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting...
2024-09-01T12:10:35.643+05:30 INFO 9472 --- [order-service] [ restartedMain] com.zaxxer.hikari.pool.HikariPool : HikariPool-1 - Added conn
2024-09-01T12:10:35.648+05:30 INFO 9472 --- [order-service] [ restartedMain] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start comp
```

Junit Testing :-



Registrate User

HTTP auth-service / register user

POST http://localhost:9098/auth-service/api/auth/register

Params Authorization Headers (8) Body Scripts Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 {
2   "userName": "DUMMMY USER ",
3   "userEmail": "dummy@gmail.com",
4   "password": "1234",
5   "role": "user",
6   "shippingAddress": "dummy address"
7 }
```

Body Cookies Headers (12) Test Results 200 OK 3.48 s 568 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   "id": 252,
3   "userName": "DUMMMY USER ",
4   "userEmail": "dummy@gmail.com",
5   "password": "$2a$10$Xv3Z9vGNak7b.d7WfpmBuTIawsKh3LM7E84bFzEi8IvLXFfiZcNiY",
6   "role": "ROLE_USER",
7   "shippingAddress": "dummy address"
8 }
```

Token generation

product-controller

GET

/api/product/{id}

▼

PUT

/api/product/{id}

▼

DELETE

/api/product/{id}

▼

POST

/api/product

▼

GET

/api/getproductsbycategory/query

▼

GET

/api/getproductsbyavailability/query

▼

GET

/api/getallproducts

▼

Schemas

ProductDto >

Customer microservice:-

Servers

http://localhost:9096 - Generated server url ▼

customer-controller

GET

/api/customer/{customerId}

▼

PUT

/api/customer/{customerId}

▼

GET

/api/customer

▼

POST

/api/customer

▼


Schemas

CustomerDto >

Cart microservice:-

cart-controller		^
GET	/api/cart/{customerId}	▼
PUT	/api/cart/{customerId}	▼
POST	/api/cart/{customerId}	▼
GET	/api/getcartid/{cartId}	▼
DELETE	/api/cart/{cartId}	▼
Schemas		^
CartDto >		
ItemEntryDto >		

Order microservice:-

order-controller		^
PUT	/api/updateorderpayment/{orderId}	▼
PUT	/api/updateorderdelivery/{orderId}	▼
POST	/api/placeorder/{cartId}	▼ 
GET	/api/order/{orderId}	▼
GET	/api/getorderbypayment/query	▼
GET	/api/getorderbydelivery/query	▼
GET	/api/getorderbycustomer/{customerId}	▼
GET	/api/getallOrders	▼
DELETE	/api/cancelorder/{orderId}	▼