MICROSERVICES WITH SECURITY IN API AND DOCKERIZE

KUNAL GARG

1) Newman

Flight Service

```
C:\Users\kunal>newman run "C:\Users\kunal\OneDrive\Desktop\Flight_service_MicroService.postman_collection.json"
newman

Flight_service_MicroService

→ add flight
  POST http://localhost:9999/api/flight/airline/inventory [201 Created, 368B, 3.4s]

→ search flight
  POST http://localhost:9999/api/flight/search [201 Created, 1.02kB, 702ms]
```

	executed	failed
iterations	1	0
requests	2	0
test-scripts	0	0
prerequest-scripts	0	0
assertions	0	0
total run duration: 4.2s		
total data received: 1.23kB (approx)		
average response time: 2s [min: 702ms, max: 3.4s, s.d.: 1352ms]		

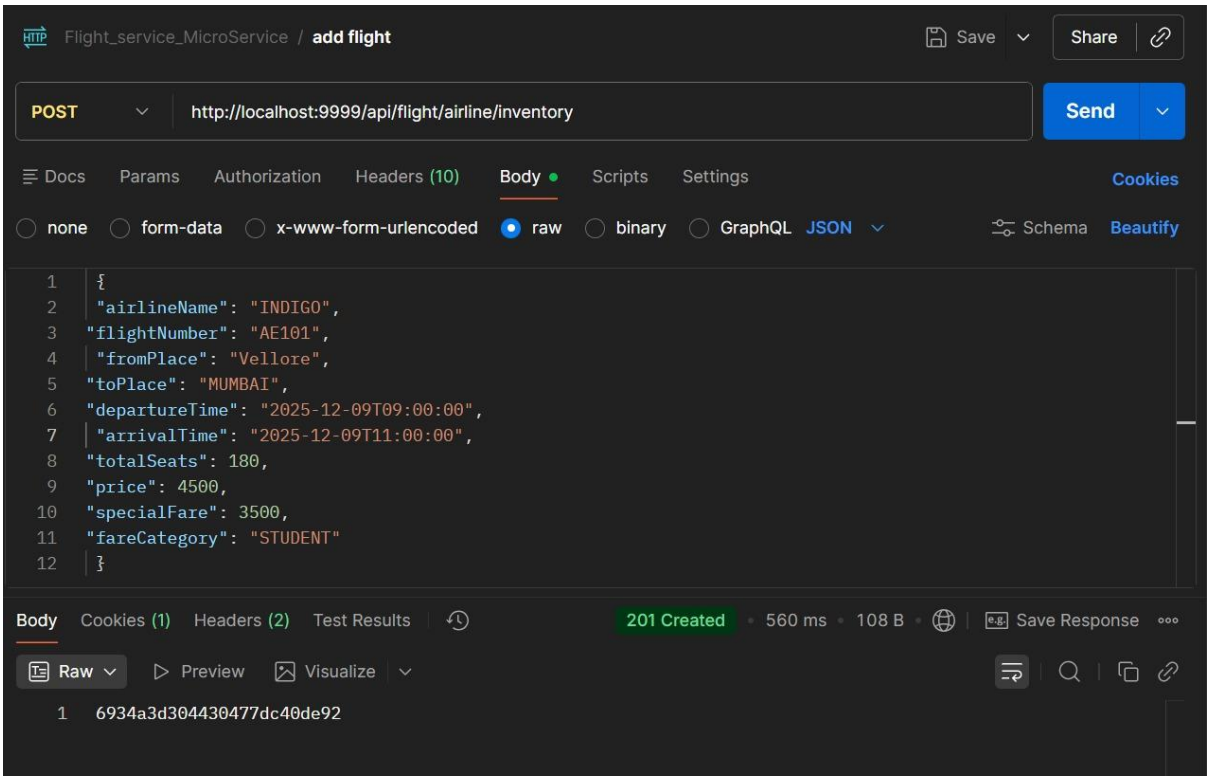
Booking Service

```
C:\Users\kunal>newman run "C:\Users\kunal\OneDrive\Desktop\Booking_service_MicroService.postman_collection.json"
newman

Booking_Service_MicroService

→ book flight
  POST http://localhost:9998/api/flight/booking/692c45f86a221baaf8ad3055 [201 Created, 510B, 1629ms]

→ get by email
  GET http://localhost:9998/api/flight/booking/history/amankumar@gmail [200 OK, 924B, 201ms]

→ get by pnr
  GET http://localhost:9998/api/flight/ticket/BIKZG4 [404 Not Found, 219B, 119ms]

→ delete by pnr
  DELETE http://localhost:9998/api/flight/booking/cancel/BIKZG4 [404 Not Found, 224B, 56ms]
```

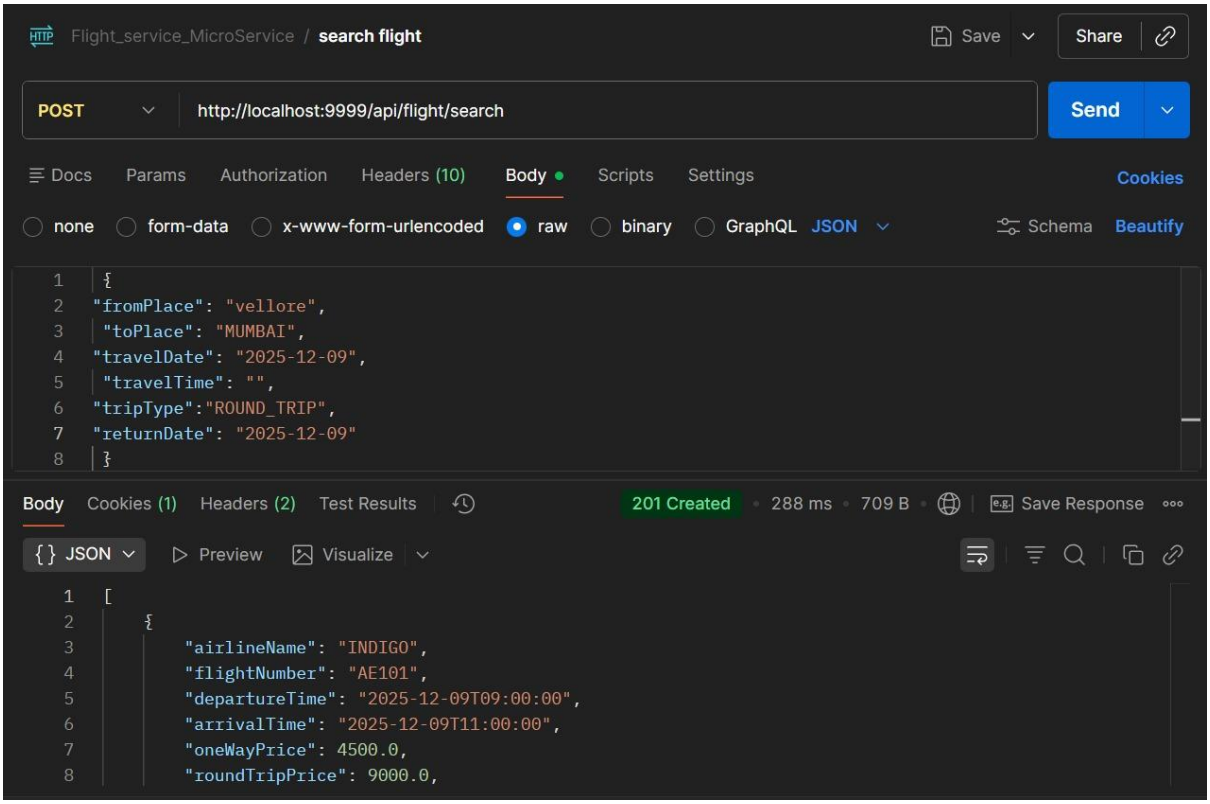
	executed	failed
iterations	1	0
requests	4	0
test-scripts	0	0
prerequest-scripts	0	0
assertions	0	0
total run duration: 2.3s		
total data received: 1.56kB (approx)		
average response time: 501ms [min: 56ms, max: 1629ms, s.d.: 653ms]		

POSTMAN

1) Add Flight



2) Search Flight



Docker for booking service (kafka) working fine

```
C:\Users\kunal\Documents\workspace-spring-tools-for-eclipse-4.32.2.RELEASE\booking-service-micro-assignment-1>docker-com
pose up -d
time="2025-12-07T03:30:02+05:30" level=warning msg="C:\\Users\\kunal\\Documents\\workspace-spring-tools-for-eclipse-4.32
.2.RELEASE\\booking-service-micro-assignment-1\\docker-compose.yml: the attribute `version` is obsolete, it will be igno
red, please remove it to avoid potential confusion"
[+] Running 3/3
 ✔Container booking-service-micro-assignment-1-mailhog-1    Started                                                1.5s
 ✔Container booking-service-micro-assignment-1-zookeeper-1  Started                                                1.5s
 ✔Container booking-service-micro-assignment-1-kafka-1      Started                                                0.5s

C:\Users\kunal\Documents\workspace-spring-tools-for-eclipse-4.32.2.RELEASE\booking-service-micro-assignment-1>docker ps

CONTAINER ID   IMAGE                    COMMAND                  CREATED        STATUS         PORTS
                                                                 NAMES
55c4f7fa4793   spring-boot-login-app    "/usr/local/bin/mvn-…"   11 hours ago   Up 5 minutes   0.0.0.0:6868->8080/tcp, [
::]:6868->8080/tcp                                               spring-boot-login-app-1
d1b518b6a1d8   postgres                 "docker-entrypoint.s…"   12 hours ago   Up 5 minutes   0.0.0.0:5433->5432/tcp, [
::]:5433->5432/tcp                                               spring-boot-login-postgresdb-1
6aeb81e0dfa8   wurstmeister/kafka       "start-kafka.sh"         5 days ago     Up 7 seconds   0.0.0.0:9092->9092/tcp, [
::]:9092->9092/tcp                                               booking-service-micro-assignment-1-kafka-1
a05ff055e9a4   wurstmeister/zookeeper   "/bin/sh -c '/usr/sb…"   5 days ago     Up 9 seconds   0.0.0.0:2181->2181/tcp, [
::]:2181->2181/tcp                                               booking-service-micro-assignment-1-zookeeper-1
4451a4629abd   mailhog/mailhog          "MailHog"                5 days ago     Up 9 seconds   0.0.0.0:1025->1025/tcp, [
::]:1025->1025/tcp, 0.0.0.0:8025->8025/tcp, [::]:8025->8025/tcp   booking-service-micro-assignment-1-mailhog-1
```

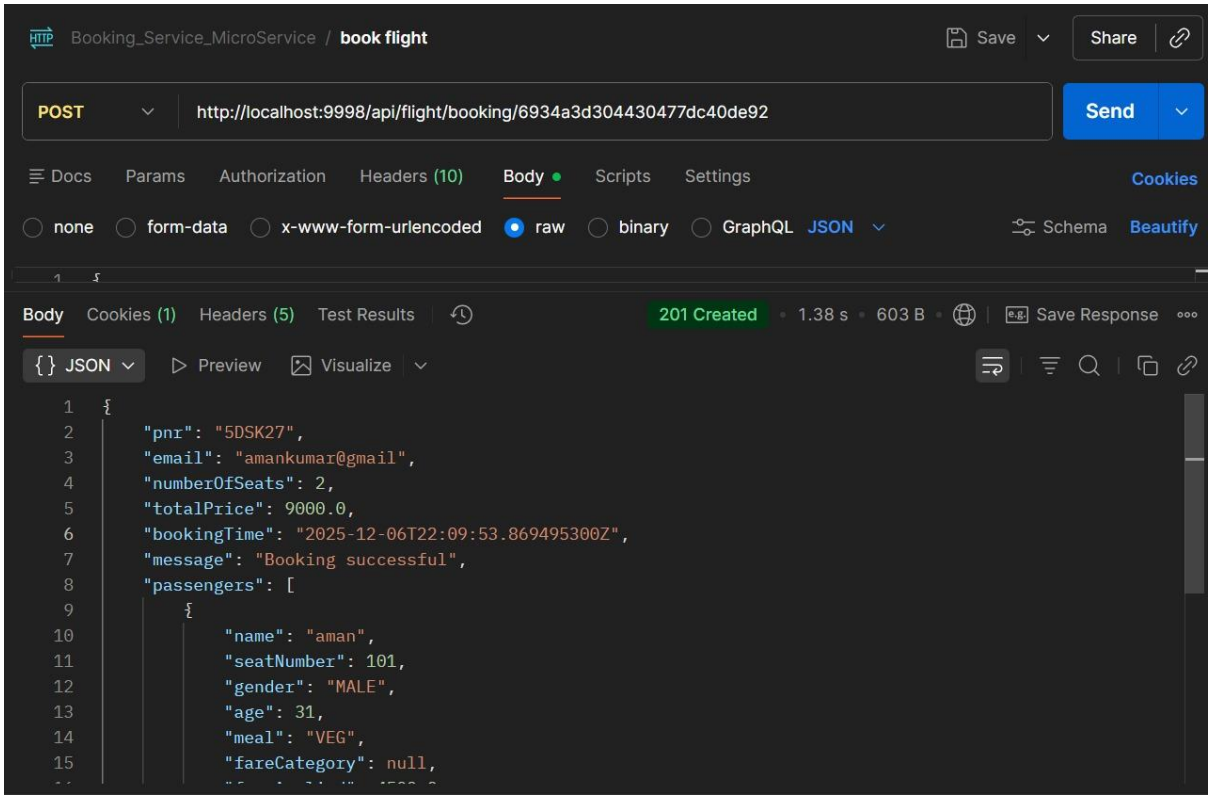
```
C:\Users\kunal\Documents\workspace-spring-tools-for-eclipse-4.32.2.RELEASE\booking-service-micro-assignment-1>docker exe
c -it booking-service-micro-assignment-1-kafka-1 bash
root@6aeb81e0dfa8:/# kafka-topics.sh \
--create \
--topic booking-confirmed \
--bootstrap-server localhost:9092 \
--replication-factor 1 \
--partitions 1
Error while executing topic command : Topic 'booking-confirmed' already exists.
[2025-12-06 22:06:57,491] ERROR org.apache.kafka.common.errors.TopicExistsException: Topic 'booking-confirmed' already e
xists.
 (kafka.admin.TopicCommand$)
root@6aeb81e0dfa8:/# ^C
root@6aeb81e0dfa8:/# ^C
root@6aeb81e0dfa8:/# kafka-topics.sh --list --bootstrap-server localhost:9092
__consumer_offsets
booking-confirmed
root@6aeb81e0dfa8:/#
```

Logs

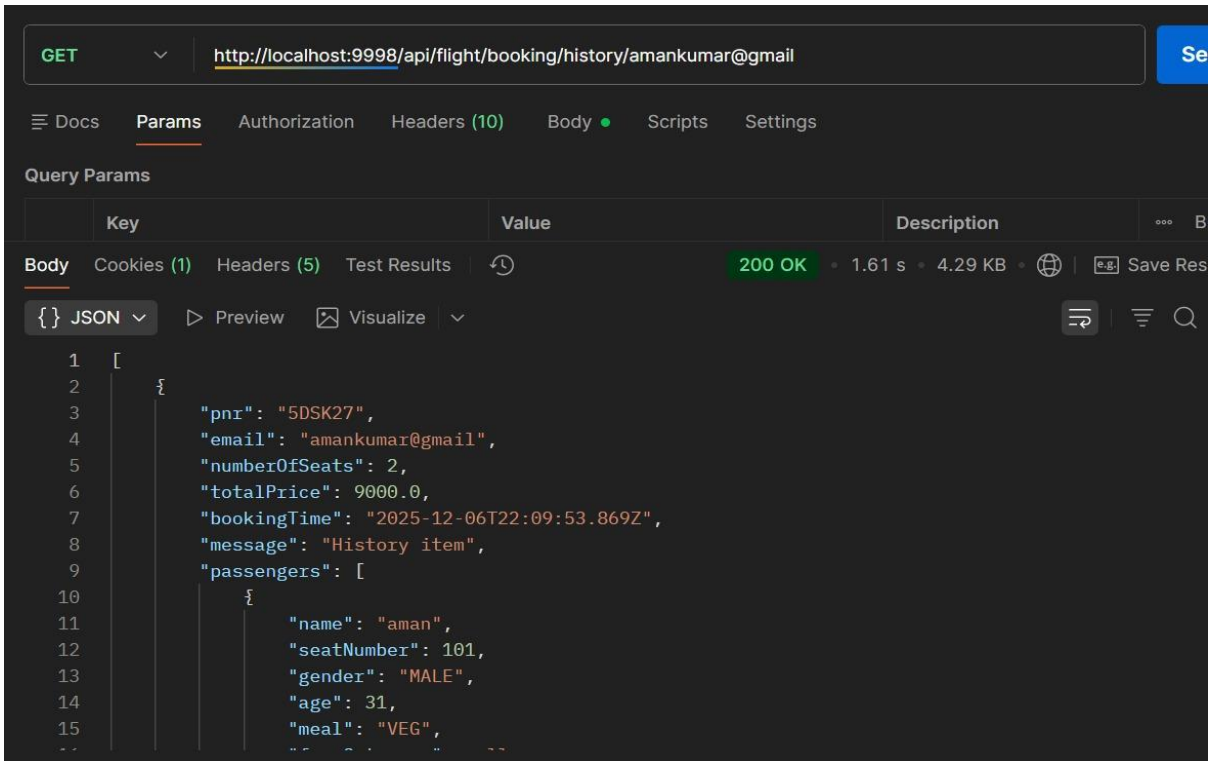
```
2025-12-07T03:39:54.274+05:30  INFO 24456 --- [booking-service-micro-assignment] [ad
2025-12-07T03:39:54.290+05:30  INFO 24456 --- [booking-service-micro-assignment] [ad
📤 Booking Event Published to Kafka for PNR: 5DSK27
2025-12-07T03:39:54.308+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [ntL
2025-12-07T03:39:54.308+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [ntL
2025-12-07T03:39:54.320+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [nio
2025-12-07T03:39:54.322+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [nio
2025-12-07T03:39:54.330+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [nio
2025-12-07T03:39:54.330+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [nio
2025-12-07T03:39:54.345+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [nio
2025-12-07T03:39:54.426+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [bea
2025-12-07T03:39:54.427+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [bea
2025-12-07T03:39:54.430+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [res
2025-12-07T03:39:54.431+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [res
2025-12-07T03:39:54.431+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [bea
2025-12-07T03:39:54.435+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [res
2025-12-07T03:39:54.436+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [res
 Received Booking Event for PNR: 5DSK27
 Email successfully sent to amankumar@gmail
2025-12-07T03:40:01.869+05:30 DEBUG 24456 --- [booking-service-micro-assignment] [loc
```

POSTMAN(BOOKING SERVICE)

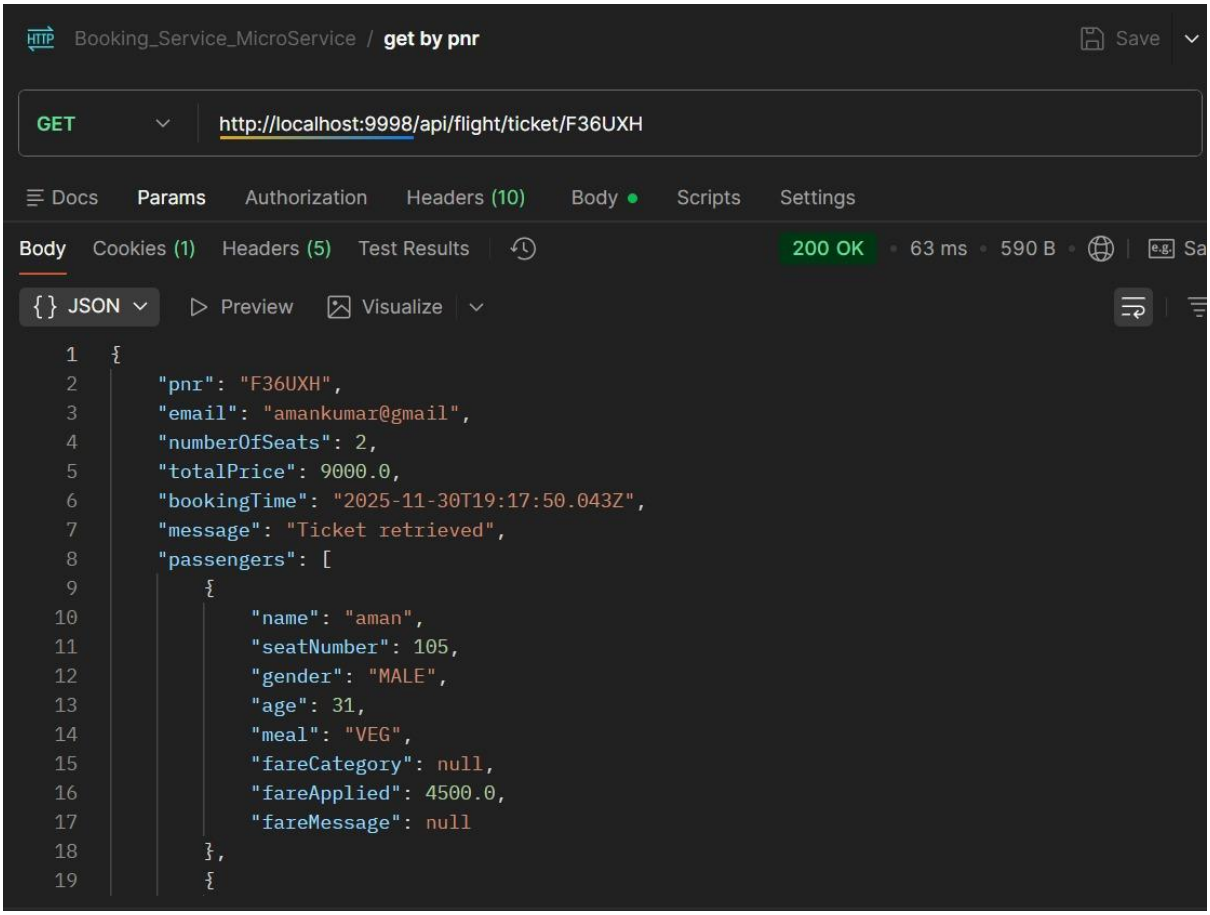
1) Book flight



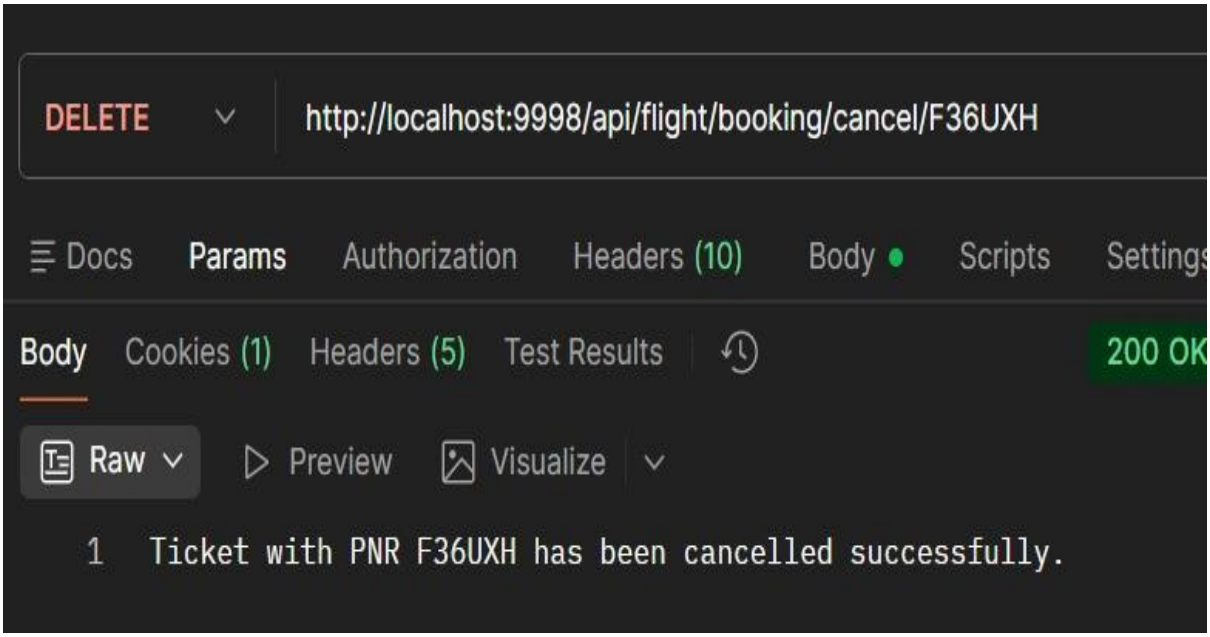
2) Get by email



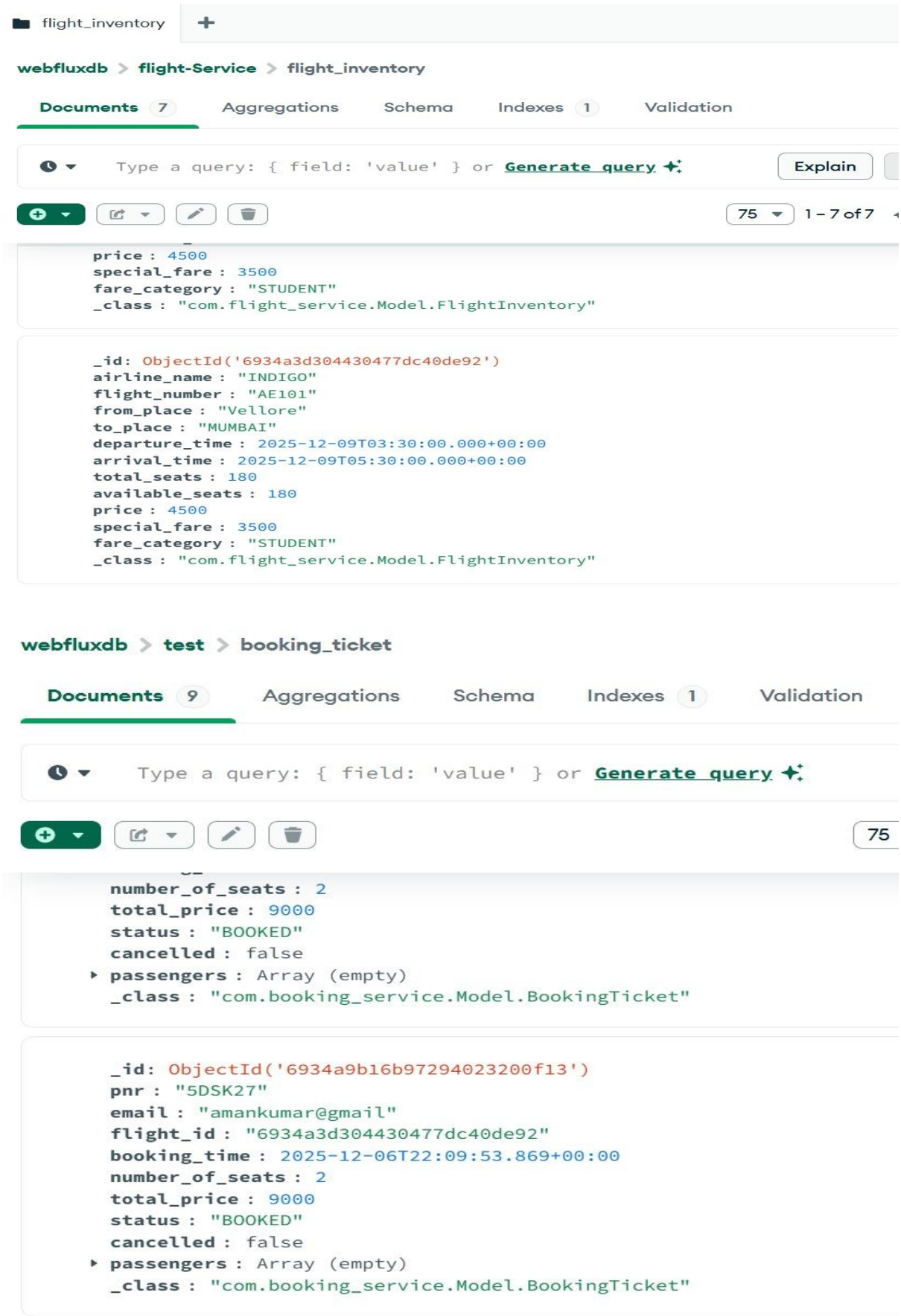
3) Get by PNR



4) Delete By PNR

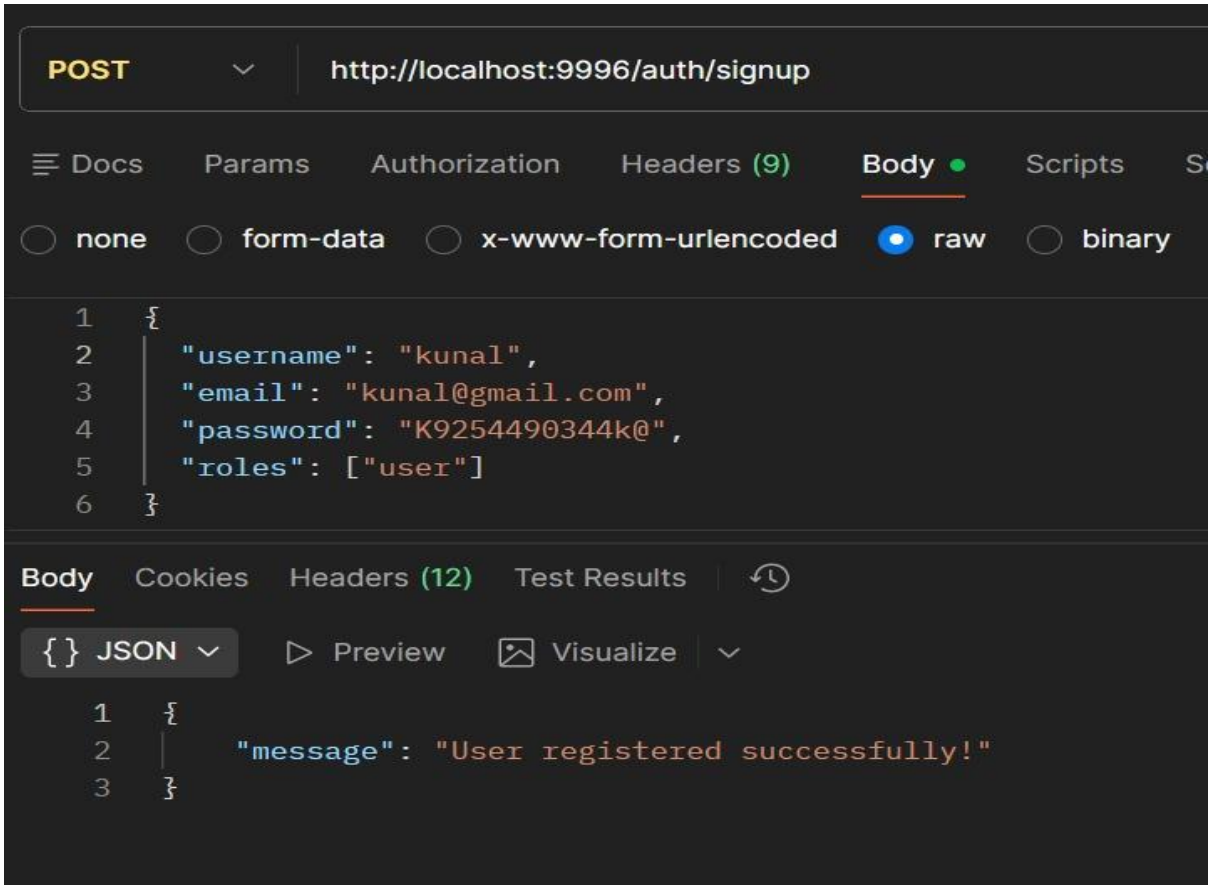


SCHEMAS

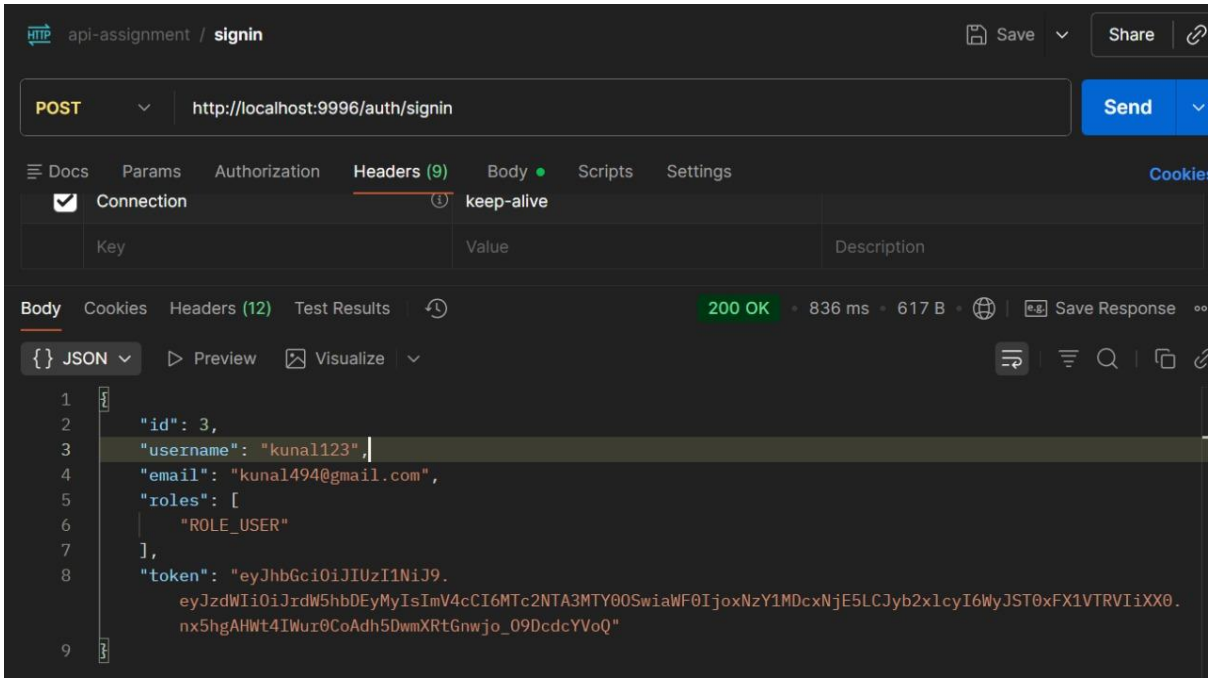

flight_inventory
webfluxdb > flight-Service > flight_inventory
Documents 7
Aggregations
Schema
Indexes 1
Validation
Type a query: { field: 'value' } or Generate query
Explain
75
1 – 7 of 7
price : 4500
special_fare : 3500
fare_category : "STUDENT"
_class : "com.flight_service.Model.FlightInventory"
_id: ObjectId('6934a3d304430477dc40de92')
airline_name : "INDIGO"
flight_number : "AE101"
from_place : "Vellore"
to_place : "MUMBAI"
departure_time : 2025-12-09T03:30:00.000+00:00
arrival_time : 2025-12-09T05:30:00.000+00:00
total_seats : 180
available_seats : 180
price : 4500
special_fare : 3500
fare_category : "STUDENT"
_class : "com.flight_service.Model.FlightInventory"
webfluxdb > test > booking_ticket
Documents 9
Aggregations
Schema
Indexes 1
Validation
Type a query: { field: 'value' } or Generate query
75
number_of_seats : 2
total_price : 9000
status : "BOOKED"
cancelled : false
passengers : Array (empty)
_class : "com.booking_service.Model.BookingTicket"
_id: ObjectId('6934a9b16b97294023200f13')
pnr : "5DSK27"
email : "amankumar@gmail"
flight_id : "6934a3d304430477dc40de92"
booking_time : 2025-12-06T22:09:53.869+00:00
number_of_seats : 2
total_price : 9000
status : "BOOKED"
cancelled : false
passengers : Array (empty)
_class : "com.booking_service.Model.BookingTicket"

API GATEWAY (AUTHENTICATION)

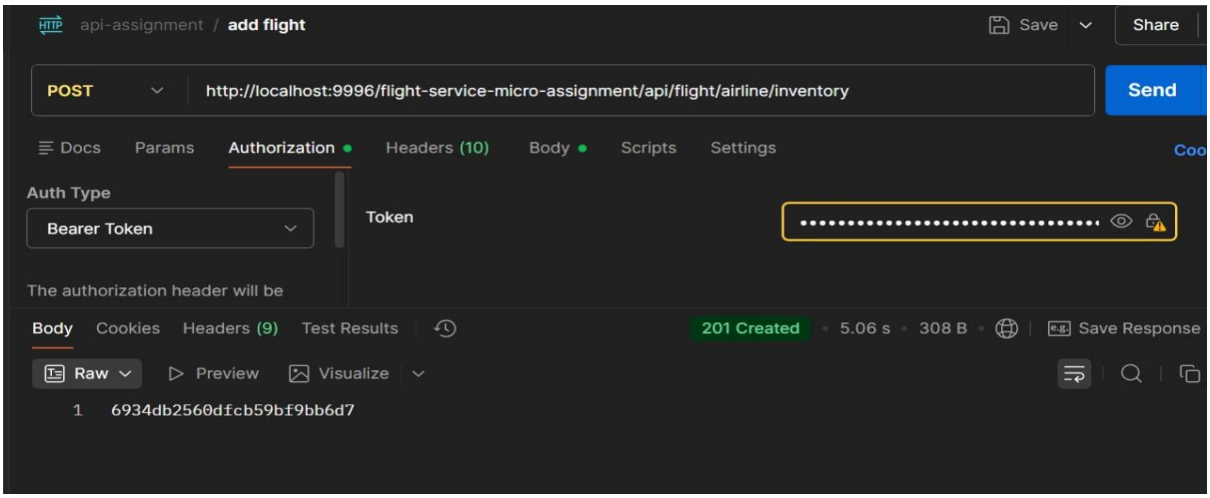
1) signup



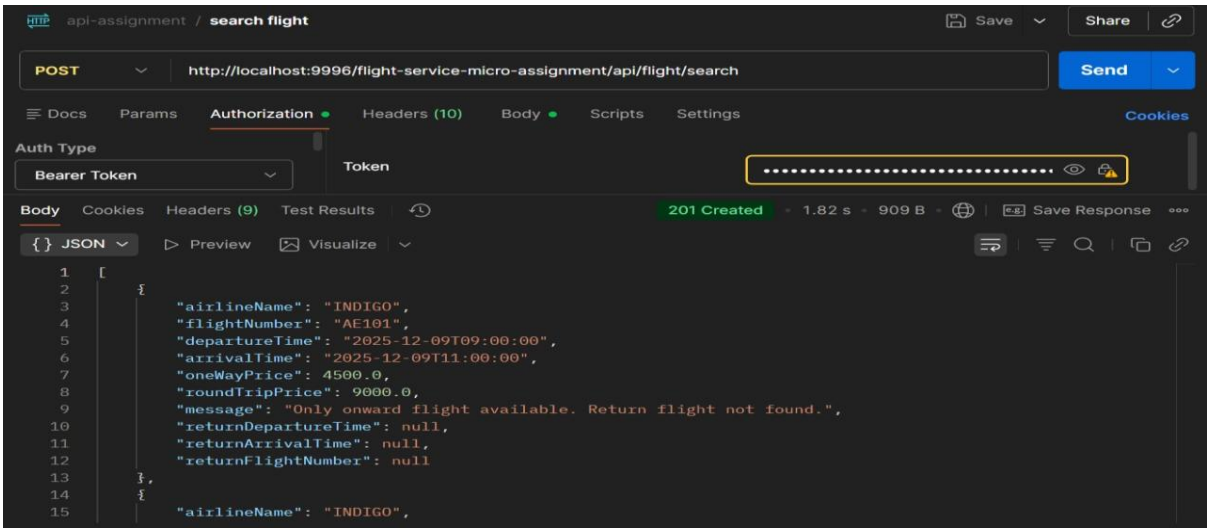
2)Signin



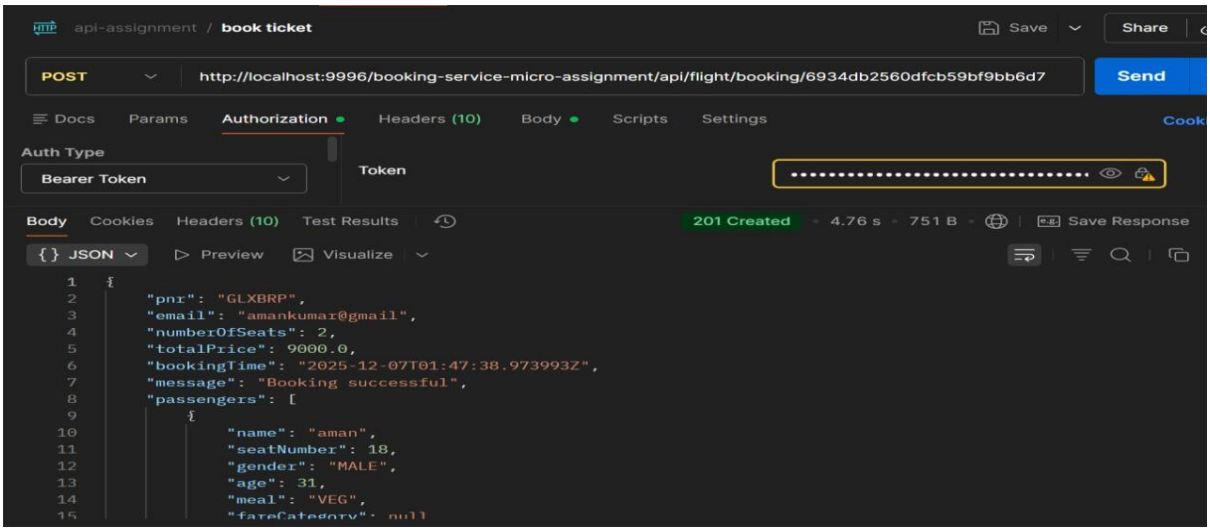
3) Add flight



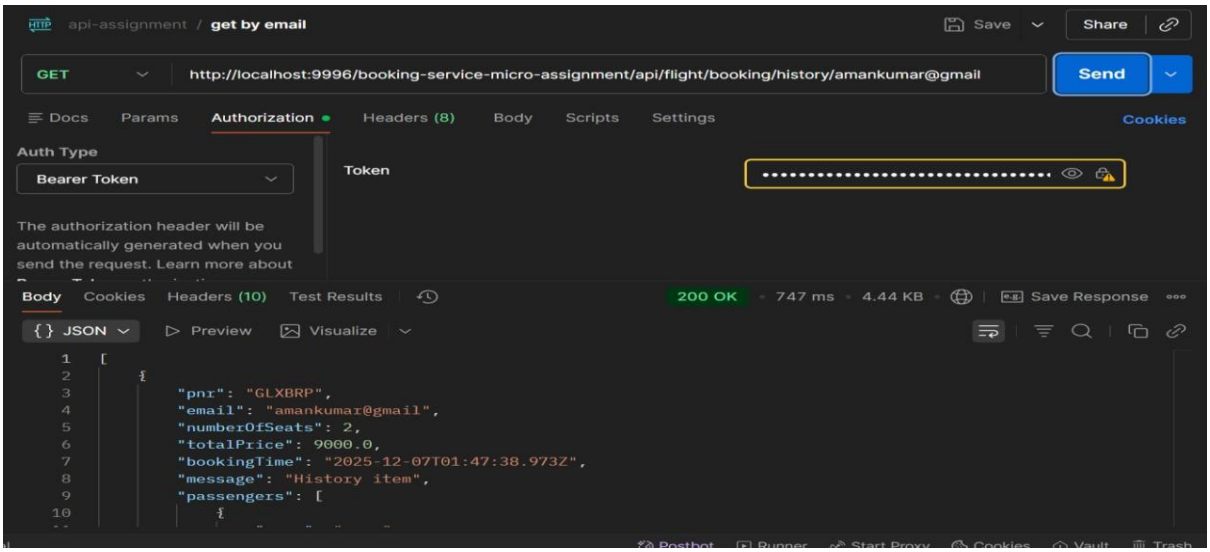
4) Search Flight



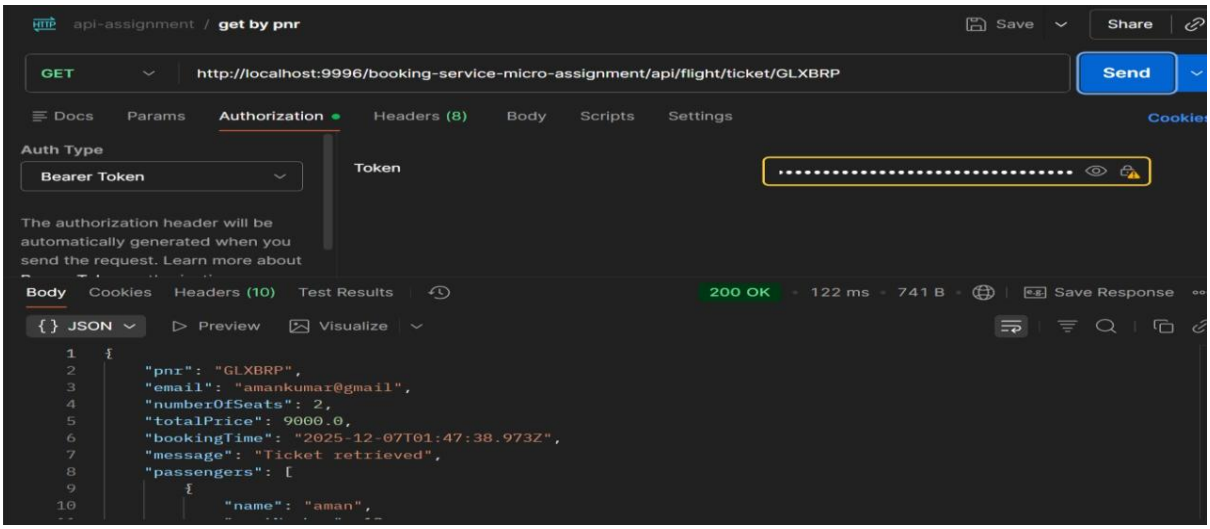
5) Book Ticket



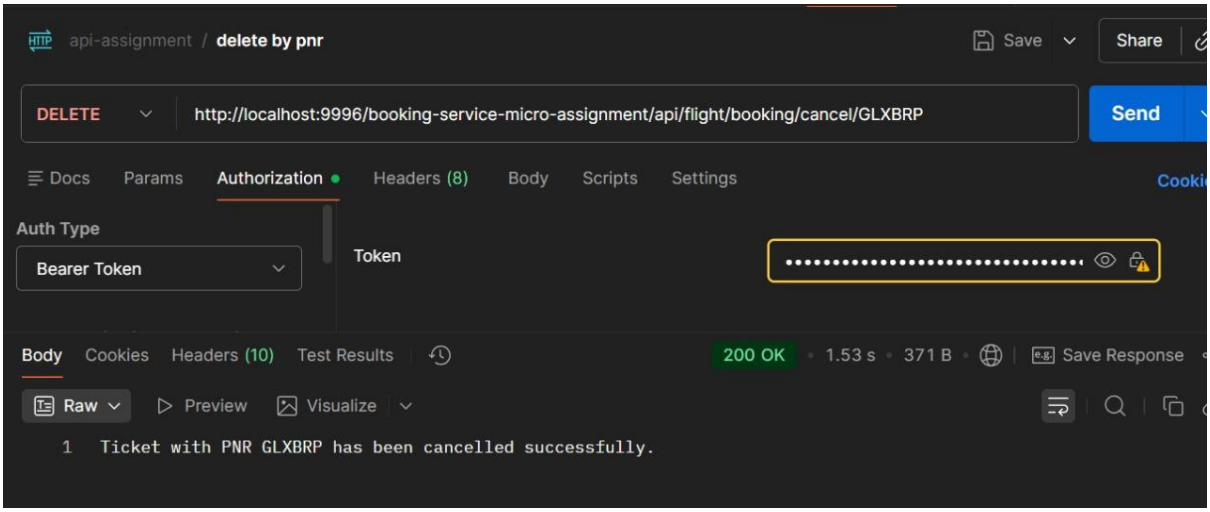
6) Get By email



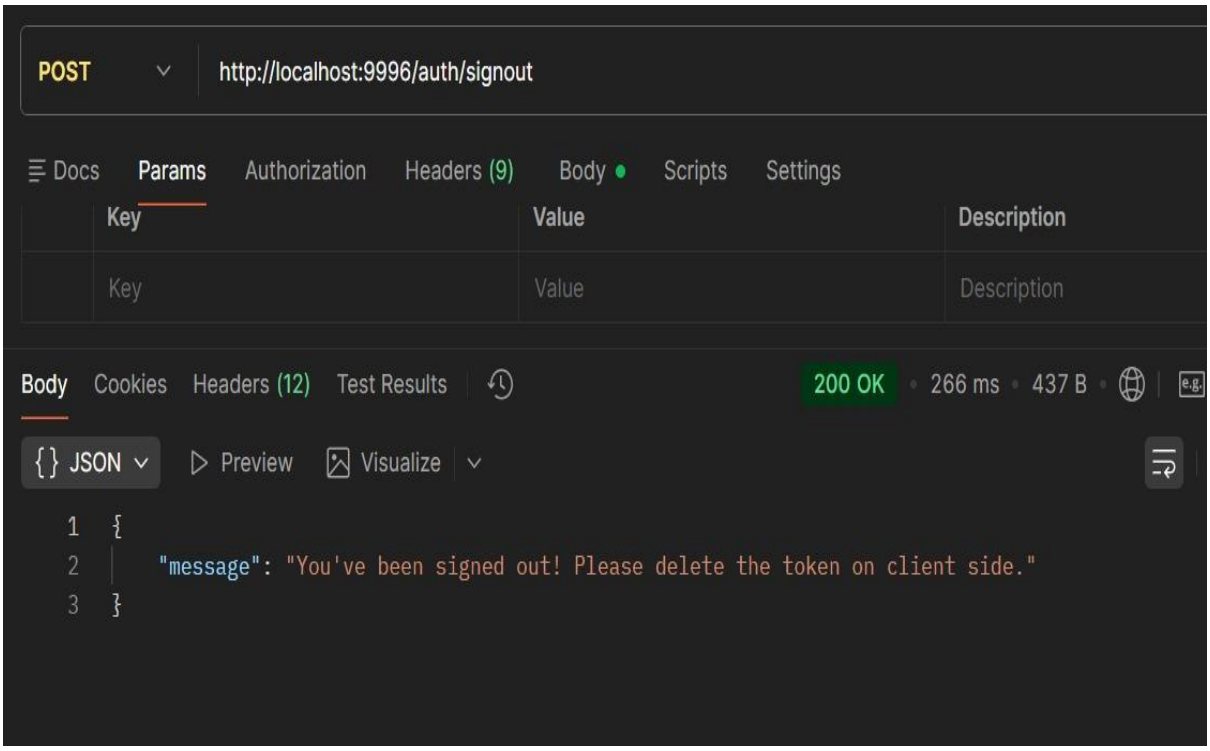
7) Get By PNR



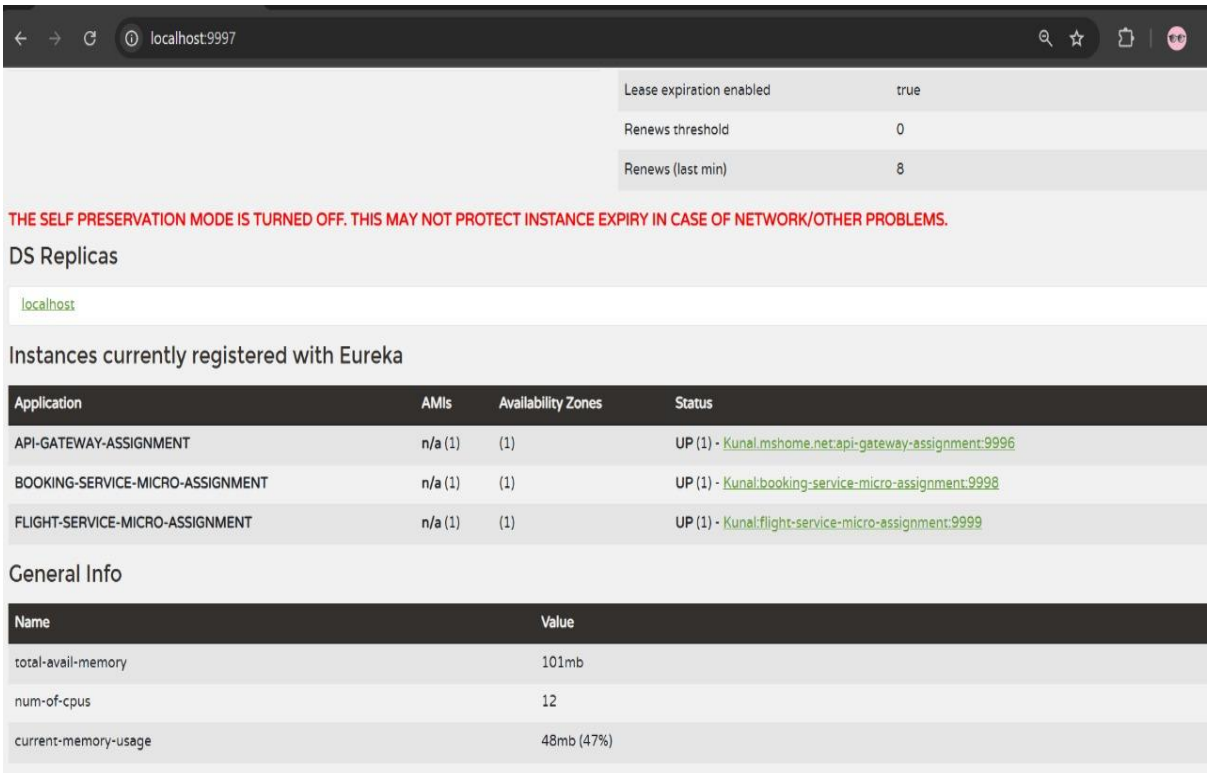
8) Delete by PNR



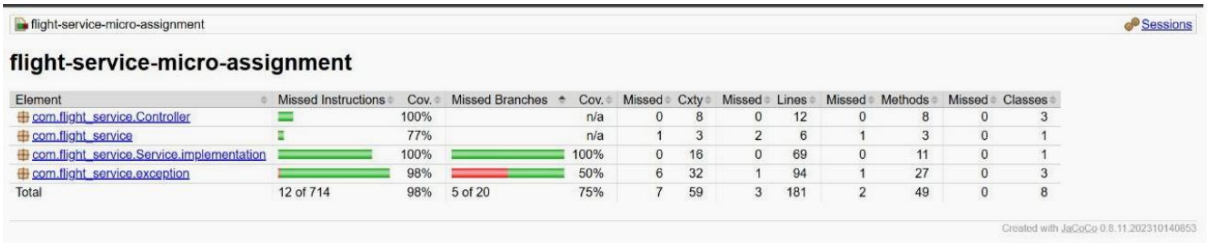
9) SignOut



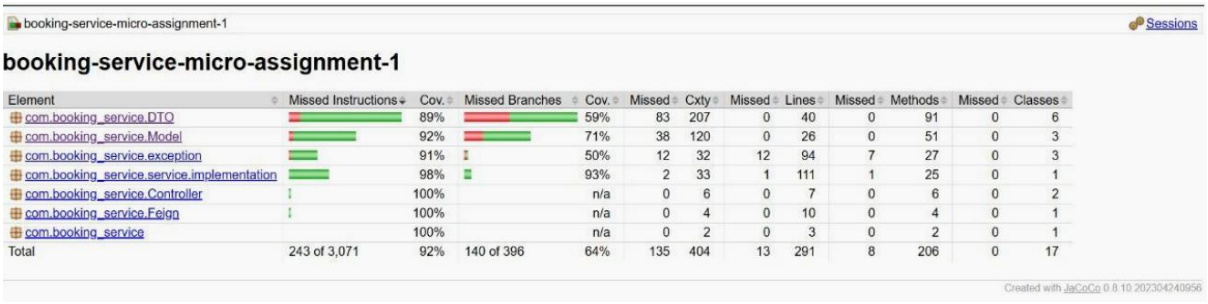
EUREKA SERVER WORKING PERFECTLY :



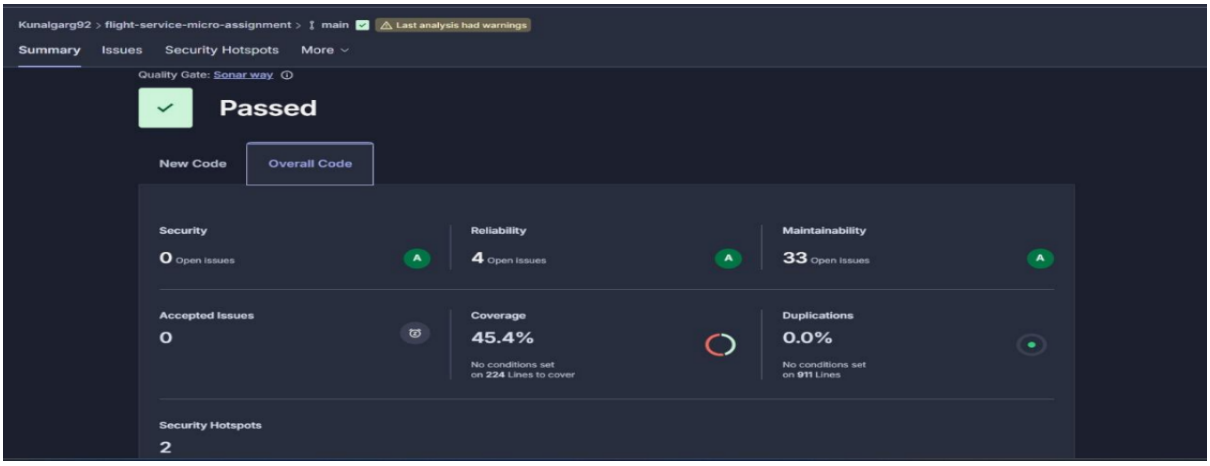
Jacoco (Flight Service)



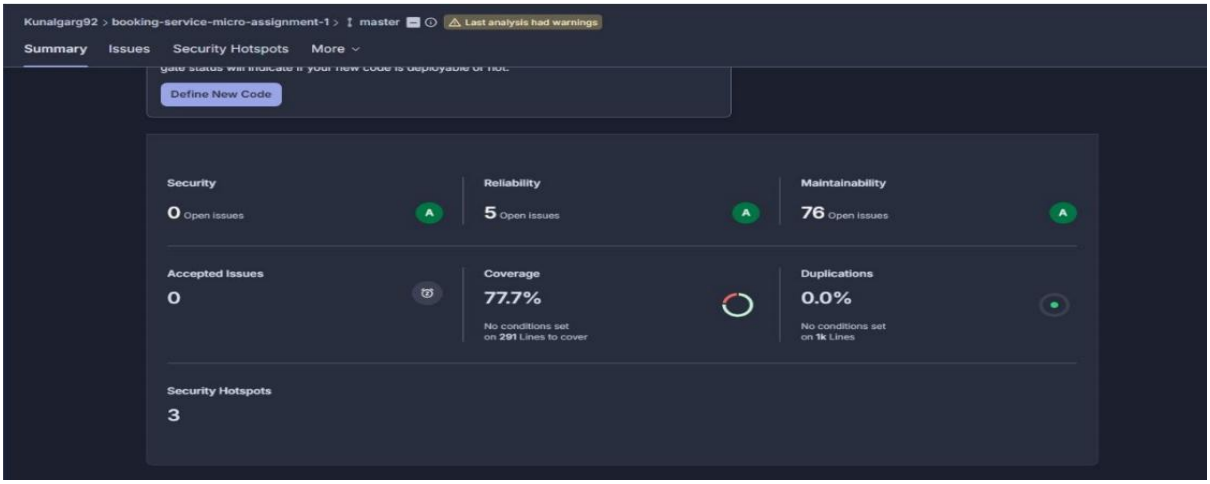
Jacoco (Booking Service)



SonarQube(Flight Service)



Booking Service

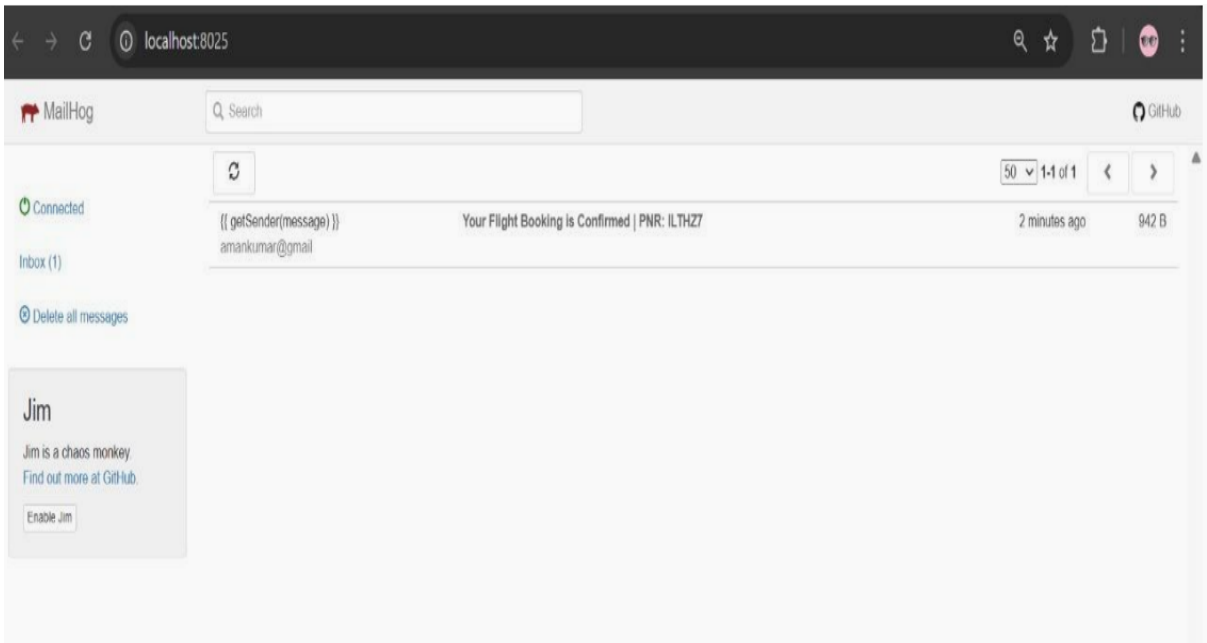


Jmeter Testing (in CLI)

```
C:\Users\kunal>"C:\Users\kunal\Downloads\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\jmeter.bat" -n -t  "C:\Users\kunal\OneDrive\Desk
top\microassignment.jmx" -l results.jtl -e -o report
WARN StatusConsoleListener The use of package scanning to locate plugins is deprecated and will be removed in a future release
WARN StatusConsoleListener The use of package scanning to locate plugins is deprecated and will be removed in a future release
WARN StatusConsoleListener The use of package scanning to locate plugins is deprecated and will be removed in a future release
WARN StatusConsoleListener The use of package scanning to locate plugins is deprecated and will be removed in a future release
Creating summariser <summary>
Created the tree successfully using C:\Users\kunal\OneDrive\Desktop\microassignment.jmx
Starting standalone test @ 2025 Dec 1 22:45:40 IST (1764609340122)
Waiting for possible Shutdown/StopTestNow/HeapDump/ThreadDump message on port 4445
Warning: Nashorn engine is planned to be removed from a future JDK release
summary =     20 in 00:00:02 =   10.5/s Avg:  1308 Min:   881 Max:  1583 Err:     0 (0.00%)
Tidying up ...    @ 2025 Dec 1 22:45:42 IST (1764609342662)
... end of run
```

Message-Broker

```
2025-12-02T02:47:48.046+05:30  INFO 2652 --- [booking-service-micro-assignment] [           main] o.a.k.clients.consumer
        allow.auto.create.topics = true
        auto.commit.interval.ms = 5000
        auto.include.jmx.reporter = true
        auto.offset.reset = latest
        bootstrap.servers = [localhost:9092]
        check.crcs = true
        client.dns.lookup = use_all_dns_ips
        client.id = consumer-booking-service-group-1
        client.rack =
        connections.max.idle.ms = 540000
        default.api.timeout.ms = 60000
        enable.auto.commit = false
        exclude.internal.topics = true
        fetch.max.bytes = 52428800
        fetch.max.wait.ms = 500
        fetch.min.bytes = 1
        group.id = booking-service-group
        group.instance.id = null
        heartbeat.interval.ms = 3000
        interceptor.classes = []
        internal.leave.group.on.close = true
        internal.throw.on.fetch.stable.offset.unsupported = false
        isolation.level = read_uncommitted
        key.deserializer = class org.apache.kafka.common.serialization.StringDeserializer
```

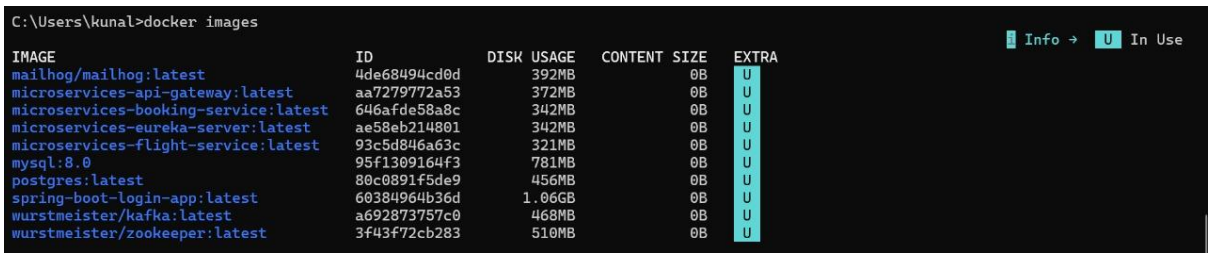


DOCKERIZE ALL THE MICROSERVICES (SUCCESSFULLY RUNNING)

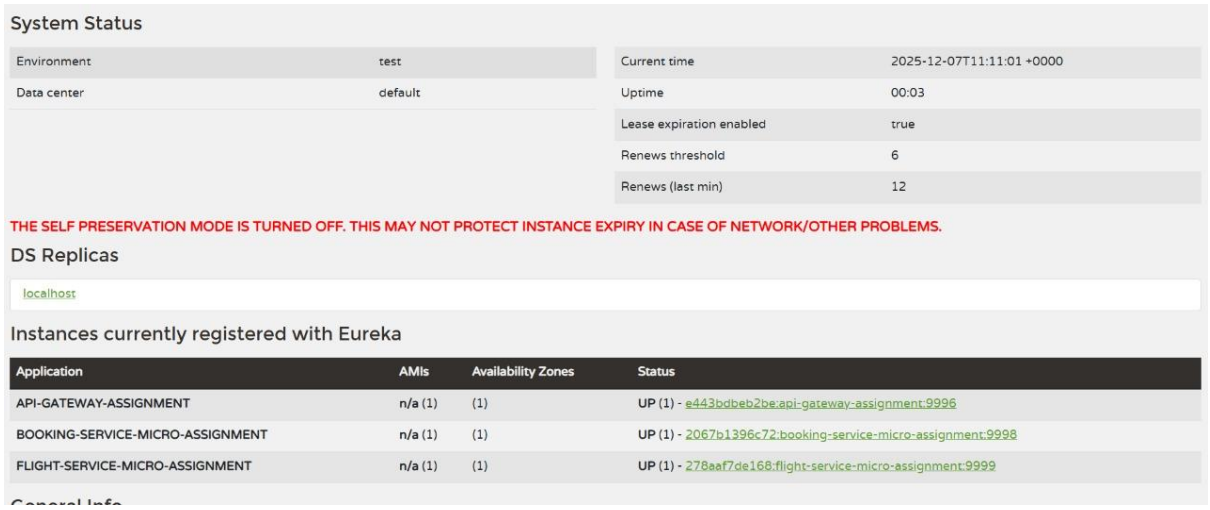
```
 => [eureka-server] exporting to image                                                    0.3s
 => => exporting layers                                                                   0.3s
 => => writing image sha256:b107db36df33f9f759328cebc4589988dcf6463af5b36e80e7eae11133135a00  0.0s
 => => naming to docker.io/library/microservices-eureka-server                            0.0s
 => [eureka-server] resolving provenance for metadata file                                0.0s
 => [booking-service builder 5/6] COPY src ./src                                          0.1s
 => [booking-service builder 6/6] RUN mvn clean package -DskipTests                      20.1s
 => [booking-service stage-1 3/3] COPY --from=builder /app/target/*.jar app.jar           0.1s
 => [booking-service] exporting to image                                                  0.1s
 => => exporting layers                                                                   0.0s
 => => writing image sha256:869314750fbaf0b4b0f42007986de0616e277acb16eca602637886644b59fc54  0.0s
 => => naming to docker.io/library/microservices-booking-service                          0.0s
 => [booking-service] resolving provenance for metadata file                              0.0s
[+] Running 10/10
 ✔ microservices-eureka-server      Built                                                 0.0s
 ✔ microservices-booking-service    Built                                                 0.0s
 ✔ microservices-flight-service     Built                                                 0.0s
 ✔ microservices-api-gateway        Built                                                 0.0s
 ✔ Network microservices_micro-net  Created                                               0.2s
 ✔ Container eureka-server          Created                                               0.4s
 ✔ Container mysql                  Created                                               0.4s
 ✔ Container flight-service         Created                                               0.2s
 ✔ Container api-gateway            Created                                               0.2s
 ✔ Container booking-service        Created                                               0.2s
Attaching to api-gateway, booking-service, eureka-server, flight-service, mysql
eureka-server  |
eureka-server  |   .   ____          _            __ _ _
eureka-server  |  /\\ / ___'_ __ _ _(_)_ __  __ _ \ \ \ \
eureka-server  | ( ( )\___ | '_ | '_| | '_ \/ _` | \ \ \ \
eureka-server  |  \\/  ___)| |_)| | | | | || (_| |  ) ) ) )
```

Logs :

```
C:\Users\kunal>docker logs api-gateway

  .   ____          _            __ _ _
 /\\ / ___'_ __ _ _(_)_ __  __ _ \ \ \ \
( ( )\___ | '_ | '_| | '_ \/ _` | \ \ \ \
 \\/  ___)| |_)| | | | | || (_| |  ) ) ) )
  '  |____| .__|_| |_|_| |_\__, | / / / /
 =========|_|==============|___/=/_/_/_/

 :: Spring Boot ::                (v3.4.0)

2025-12-07T10:37:12.750Z  INFO 1 --- [api-gateway-assignment] [           main] c.a.ApiGatewayAssignmentApplication      : Starting A
piGatewayAssignmentApplication v0.0.1-SNAPSHOT using Java 21.0.9 with PID 1 (/app/app.jar started by root in /app)
2025-12-07T10:37:12.755Z  INFO 1 --- [api-gateway-assignment] [           main] c.a.ApiGatewayAssignmentApplication      : No active
profile set, falling back to 1 default profile: "default"
2025-12-07T10:37:14.872Z  INFO 1 --- [api-gateway-assignment] [           main] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapp
ing Spring Data JPA repositories in DEFAULT mode.
2025-12-07T10:37:15.171Z  INFO 1 --- [api-gateway-assignment] [           main] .s.d.r.c.RepositoryConfigurationDelegate : Finished S
pring Data repository scanning in 272 ms. Found 2 JPA repository interfaces.
2025-12-07T10:37:15.912Z  INFO 1 --- [api-gateway-assignment] [           main] o.s.cloud.context.scope.GenericScope     : BeanFactor
y id=e20502cd-f8cb-3732-9ef2-4830bad30e0b
2025-12-07T10:37:17.386Z  INFO 1 --- [api-gateway-assignment] [           main] o.hibernate.jpa.internal.util.LogHelper  : HHH000204:
 Processing PersistenceUnitInfo [name: default]
2025-12-07T10:37:17.881Z  INFO 1 --- [api-gateway-assignment] [           main] org.hibernate.Version                    : HHH000412:
 Hibernate ORM core version 6.6.2.Final
2025-12-07T10:37:18.005Z  INFO 1 --- [api-gateway-assignment] [           main] o.h.c.internal.RegionFactoryInitiator    : HHH000026:
 Second-level cache disabled
2025-12-07T10:37:18.859Z  INFO 1 --- [api-gateway-assignment] [           main] o.s.o.j.p.SpringPersistenceUnitInfo      : No LoadTim
eWeaver setup: ignoring JPA class transformer
2025-12-07T10:37:18.935Z  INFO 1 --- [api-gateway-assignment] [           main] com.zaxxer.hikari.HikariDataSource       : HikariPool
-1 - Starting...
2025-12-07T10:37:19.467Z  INFO 1 --- [api-gateway-assignment] [           main] com.zaxxer.hikari.pool.HikariPool        : HikariPool
```



WORKING -FINE (tested)



Config-link : https://github.com/Kunalgarg92/config_dockerized_services