

MICROSERVICES ASSIGNMENT

KUNAL GARG

1) NewMan (POSTMAN using CLI)

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 |
| prerequisite-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]

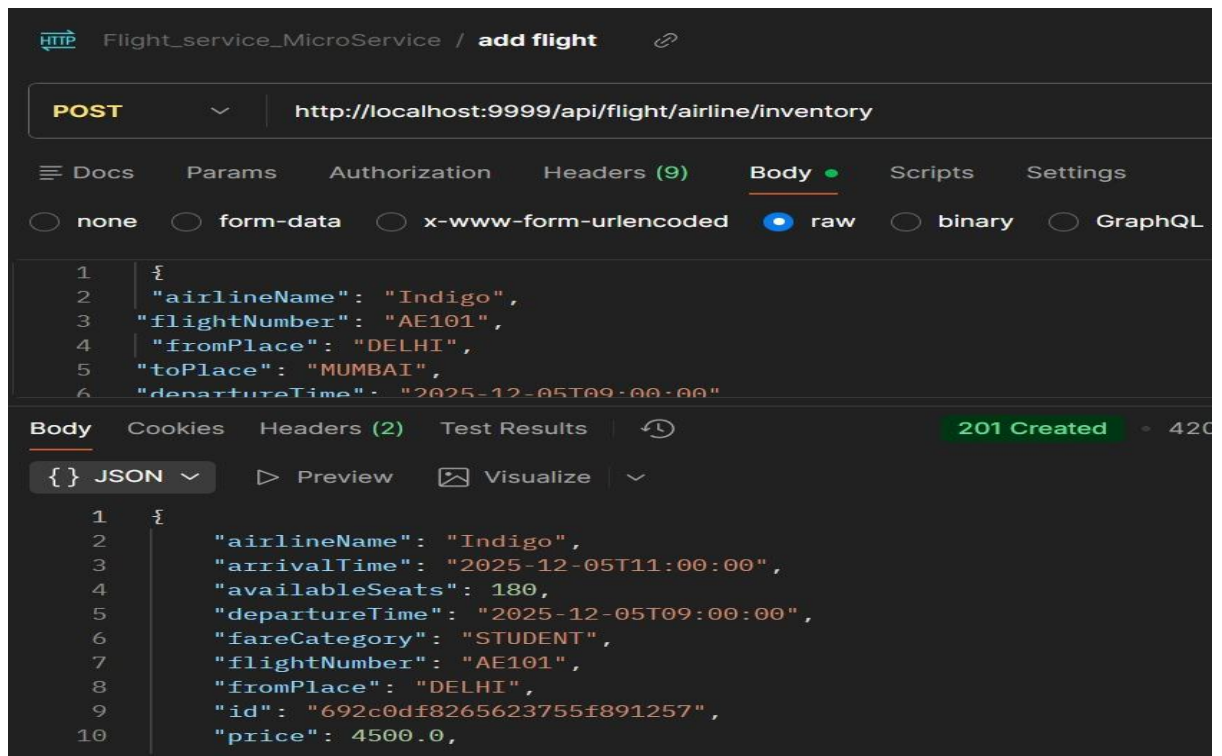
→ get by pnr
  GET http://localhost:9998/api/flight/ticket/BIKZG4 [404 Not Found, 219B, 119ms]

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

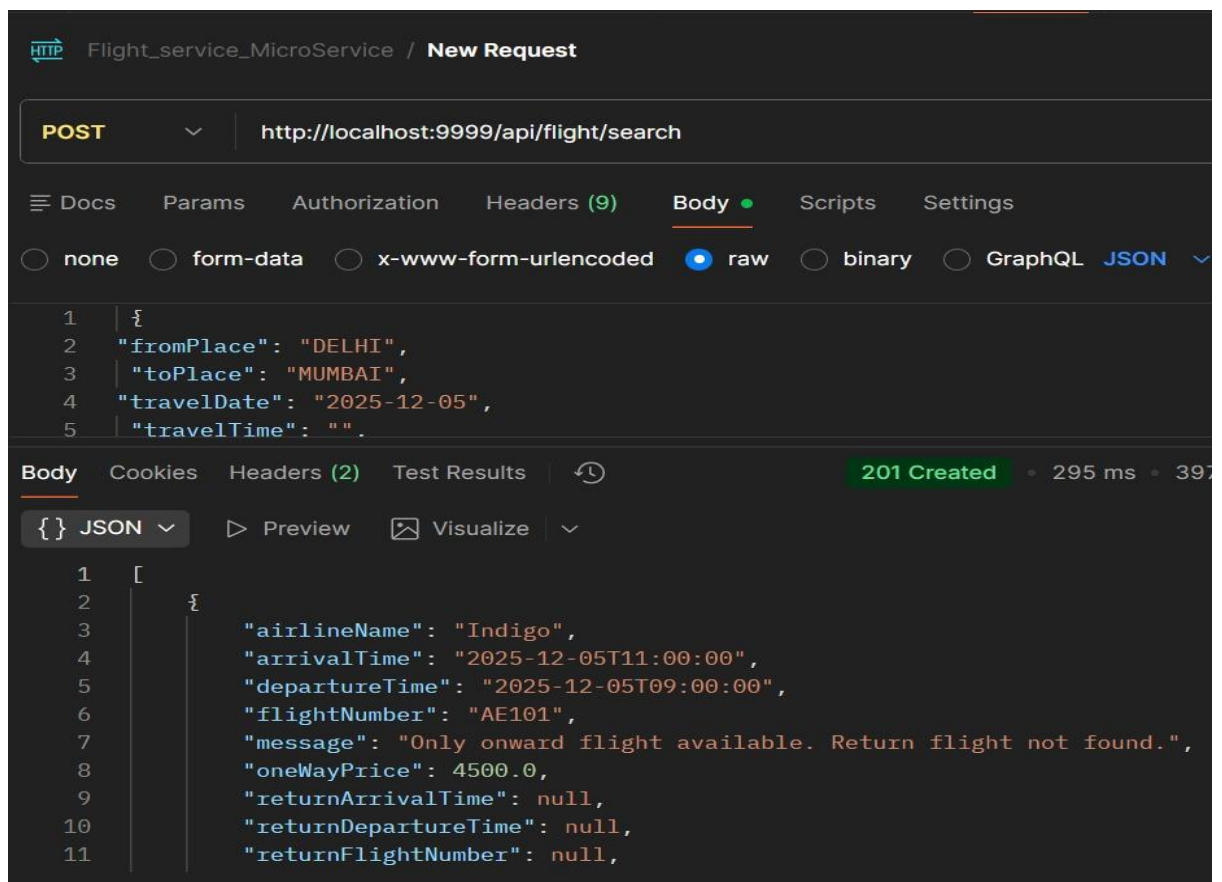
| | executed | failed |
|--|----------|--------|
| iterations | 1 | 0 |
| requests | 4 | 0 |
| test-scripts | 0 | 0 |
| prerequisite-scripts | 0 | 0 |
| assertions | 0 | 0 |
| total run duration: 2.3s | | |
| total data received: 1.56kB (approx) | | |
| average response time: 501ms [min: 56ms, max: 1629ms,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

POSTMAN

1) add flight



2) Search



3) Booking flight

The screenshot shows a REST client interface for a service named "Booking_Service_MicroService". The request is a POST to the endpoint `http://localhost:9998/api/flight/booking/692c45f86a221baaf8ad3055`. The request body is raw JSON, containing email, number of seats, and a list of passengers. The response is a 201 Created status, indicating a successful booking. The response body is also shown in JSON format, containing booking details like booking time, email, message, number of seats, and passenger information.

```
POST http://localhost:9998/api/flight/booking/692c45f86a221baaf8ad3055

{
  "email": "amankumar@gmail",
  "numberOfSeats": 2,
  "passengers": [
    {
      "age": 31,
      "fareApplied": 4500.0,
      "fareCategory": null,
      "fareMessage": null,
      "gender": "MALE",
      "meal": "VEG",
      "name": "aman",
      "seatNumber": 23
    }
  ]
}
```

Body: Cookies Headers (2) Test Results 201 Created • 2.55 s • 510 B

```
{
  "bookingTime": "2025-11-30T13:33:19.162543800Z",
  "email": "amankumar@gmail",
  "message": "Booking successful",
  "numberOfSeats": 2,
  "passengers": [
    {
      "age": 31,
      "fareApplied": 4500.0,
      "fareCategory": null,
      "fareMessage": null,
      "gender": "MALE",
      "meal": "VEG",
      "name": "aman",
      "seatNumber": 23
    }
  ]
}
```

4) Get by email

The screenshot shows a REST client interface for the same service. The request is a GET to the endpoint `http://localhost:9998/api/flight/booking/history/amankumar@gmail`. The response is a 200 OK status, indicating a successful retrieval of the booking history. The response body is shown in JSON format, containing an array of booking items with details like booking time, email, message, number of seats, and passenger information.

```
GET http://localhost:9998/api/flight/booking/history/amankumar@gmail

[
  {
    "bookingTime": "2025-11-30T13:36:01.237Z",
    "email": "amankumar@gmail",
    "message": "History item",
    "numberOfSeats": 2,
    "passengers": [
      {
        "age": 31,
        "fareApplied": 4500.0,
        "fareCategory": null,
        "fareMessage": null,
        "gender": "MALE",
        "meal": "VEG",
        "name": "aman",
        "seatNumber": 23
      }
    ]
  }
]
```

Body: Cookies Headers (2) Test Results 200 OK • 570 ms • 924 B

```
[
  {
    "bookingTime": "2025-11-30T13:36:01.237Z",
    "email": "amankumar@gmail",
    "message": "History item",
    "numberOfSeats": 2,
    "passengers": [
      {
        "age": 31,
        "fareApplied": 4500.0,
        "fareCategory": null,
        "fareMessage": null,
        "gender": "MALE",
        "meal": "VEG",
        "name": "aman",
        "seatNumber": 23
      }
    ]
  }
]
```

5) GET by pnr

GET <http://localhost:9998/api/flight/ticket/BIKZG4>

Docs Params Authorization Headers (9) Body ● Scripts

Body Cookies Headers (2) Test Results ↺

{ } JSON ▾ ▶ Preview 🖼 Visualize ▾

```
1 {
2   "bookingTime": "2025-11-30T13:36:01.237Z",
3   "email": "amankumar@gmail",
4   "message": "Ticket retrieved",
5   "numberOfSeats": 2,
6   "passengers": [
7     {
8       "age": 31,
9       "fareApplied": 4500.0,
10      "fareCategory": null,
11      "fareMessage": null,
12      "gender": "MALE",
13      "meal": "VEG",
14      "name": "aman",
15      "seatNumber": 23
16    },
17    {
18      "age": 31,
19      "fareApplied": 4500.0,
```

6) Delete

DELETE <http://localhost:9998/api/flight/booking/cancel/BIKZG4>

Docs Params Authorization Headers (9) Body ● Scripts Settings

Query Params

| Key | Value |
|-----|-------|
| Key | Value |

Body Cookies Headers (2) Test Results ↺ 200 OK

Raw ▾ ▶ Preview 🖼 Visualize ▾

```
1 Ticket with PNR BIKZG4 has been cancelled successfully.
```

Eureka Integration

localhost:9997

System Status

| | | | |
|-------------|---------|--------------------------|---------------------------|
| Environment | test | Current time | 2025-11-30T22:54:01 +0530 |
| Data center | default | Uptime | 00:05 |
| | | Lease expiration enabled | true |
| | | Renews threshold | 6 |
| | | Renews (last min) | 4 |

RENEWALS ARE LESSER THAN THE THRESHOLD. THE SELF PRESERVATION MODE IS TURNED OFF. THIS MAY NOT PROTECT INSTANCE EXPIRY IN CASE OF NETWORK PROBLEMS.

DS Replicas

localhost

Instances currently registered with Eureka

| Application | AMIs | Availability Zones | Status |
|------------------------------------|---------|--------------------|--|
| API-GATEWAY-ASSIGNMENT | n/a (1) | (1) | UP (1) - Kunal:api-gateway-assignment:9996 |
| BOOKING-SERVICE-MICRO-ASSIGNMENT-1 | n/a (1) | (1) | UP (1) - Kunal:booking-service-micro-assignment-1:9998 |
| FLIGHT-SERVICE-MICRO-ASSIGNMENT | n/a (1) | (1) | UP (1) - Kunal:flight-service-micro-assignment:9999 |

API Gateway (screenshots)

api-assignment / add flight

POST

http://localhost:9996/flight-service-micro-assignment/api/flight/airline/inventory

Docs Params Authorization Headers (9) Body Scripts Settings

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

```
1 {
2   "airlineName": "INDIGO",
3   "flightNumber": "AE101",
4   "fromPlace": "punjab",
5   "toPlace": "delhi",
6   "departureTime": "2025-12-05T09:00:00",
7   "arrivalTime": "2025-12-05T11:00:00",
8 }
```

Body Cookies Headers (2) Test Results

201 Created 6.01 s

{ } JSON Preview Visualize

```
1 {
2   "airlineName": "INDIGO",
3   "arrivalTime": "2025-12-05T11:00:00",
4   "availableSeats": 180,
5   "departureTime": "2025-12-05T09:00:00",
6   "fareCategory": "STUDENT",
7   "flightNumber": "AE101",
8   "fromPlace": "punjab",
9   "id": "692c807493a62dc09a92a991",
10 }
```

api-assignment / search flight

POST

http://localhost:9996/flight-service-micro-assignment/api/flight/search

Docs Params Authorization Headers (9) Body Scripts Settings

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

```
1 {
2   "fromPlace": "punjab",
3   "toPlace": "delhi",
4   "travelDate": "2025-12-05"
5 }
```

Body Cookies Headers (2) Test Results

201 Created 3.12 s

{ } JSON Preview Visualize

```
1 [
2   {
3     "airlineName": "INDIGO",
4     "arrivalTime": "2025-12-05T11:00:00",
5     "departureTime": "2025-12-05T09:00:00",
6     "flightNumber": "AE101",
7     "message": "Only onward flight available. Return flight not found.",
8     "oneWayPrice": 4500.0,
9     "returnArrivalTime": null,
10    "returnDepartureTime": null,
11    "returnFlightNumber": null,
12    "roundTripPrice": 9000.0
13  }
14 ]
```


Circuit-Breaker

POST

http://localhost:9998/api/flight/booking/692c45cf6a221baaf8ad3054

Send

DocsParamsAuthorizationHeaders (9)BodyScriptsSettings

BodyCookiesHeaders (4)Test Results

500 Internal Server Error677 ms2.53 KB

Save Response

{ }JSONPreviewDebug with AI

1{

2 "timestamp": "2025-11-30T19:12:18.140+00:00",

3 "status": 500,

4 "error": "Internal Server Error",

5 "trace": "feign.FeignException\$ServiceUnavailable: [503] during [GET] to [http://flight-service-micro-assignment/api/flight/internal/692c45cf6a221baaf8ad3054] [FlightServiceClient#getId(String)]: [Load balancer does not contain an instance for the service flight-service-micro-assignment]\n\tat feign.FeignException.serverResponseStatus(FeignException.java:287)\n\tat feign.FeignException.errorStatus(FeignException.java:213)\n\tat feign.codec.ErrorDecoder\$Default.decode(ErrorDecoder.java:183)\n\tat feign.InvocationContext.decodeError(InvocationContext.java:133)\n\tat feign.InvocationContext.proceed(InvocationContext.java:88)\n\tat feign.ResponseHandler.handleResponse(ResponseHandler.java:69)\n\tat feign.SynchronousMethodHandler.executeAndDecode(SynchronousMethodHandler.java:109)\n\tat feign.SynchronousMethodHandler.invoke(SynchronousMethodHandler.java:53)\n\tat feign.ReflectiveFeign\$FeignInvocationHandler.invoke(ReflectiveFeign.java:184)\n\tat jdk.proxy2/jdk.proxy2.\$Proxy182.getId(Unknown Source)\n\tat com.booking_service.service.implementation.BookingServiceImpl.lambda\$1(BookingServiceImpl.java:64)\n\tat reactor.core.publisher.MonoCallable.call(MonoCallable.java:72)\n\tat reactor.core.publisher.FluxSubscribeOnCallable\$CallableSubscribeOnSubscription.run(FluxSubscribeOnCallable.java:228)\n\tat reactor.core.scheduler.SchedulerTask.call(SchedulerTask.java:68)\n\tat reactor.core.scheduler.SchedulerTask.call(SchedulerTask.java:28)\n\tat java.base/java.util.concurrent.FutureTask.run(FutureTask.java:264)\n\tat java.base/java.util.concurrent.ScheduledThreadPoolExecutor\$ScheduledFutureTask.run(ScheduledThreadPoolExecutor.java:304)\n\tat java.base/java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1136)\n\tat java.base/java.util.concurrent.ThreadPoolExecutor\$Worker.run(ThreadPoolExecutor.java:635)\n\tat java.base/java.lang.Thread.run(Thread.java:833)\n\t",

6 "message": "[503] during [GET] to [http://flight-service-micro-assignment/api/flight/internal/692c45cf6a221baaf8ad3054] [FlightServiceClient#getId(String)]: [Load balancer does not contain an instance for the service flight-service-micro-assignment]",

7 "path": "/api/flight/booking/692c45cf6a221baaf8ad3054"

8 }

Jacoco Report (Flight Service)

flight-service-micro-assignmentSessions

| Element | Missed Instructions | Cov. | Missed Branches | Cov. | Missed | Cxty | Missed | Lines | Missed | Methods | Missed | Classes |
|---|---------------------|------|-----------------|------|--------|------|--------|-------|--------|---------|--------|---------|
| com.flight_service.Controller | <div></div> | 100% | | n/a | 0 | 8 | 0 | 12 | 0 | 8 | 0 | 3 |
| com.flight_service | <div></div> | 77% | | n/a | 1 | 3 | 2 | 6 | 1 | 3 | 0 | 1 |
| com.flight_service.Service.implementation | <div></div> | 100% | <div></div> | 100% | 0 | 16 | 0 | 69 | 0 | 11 | 0 | 1 |
| com.flight_service.exception | <div></div> | 98% | <div></div> | 50% | 6 | 32 | 1 | 94 | 1 | 27 | 0 | 3 |
| Total | 12 of 714 | 98% | 5 of 20 | 75% | 7 | 59 | 3 | 181 | 2 | 49 | 0 | 8 |

Created with JaCoCo 0.8.11.202310140853

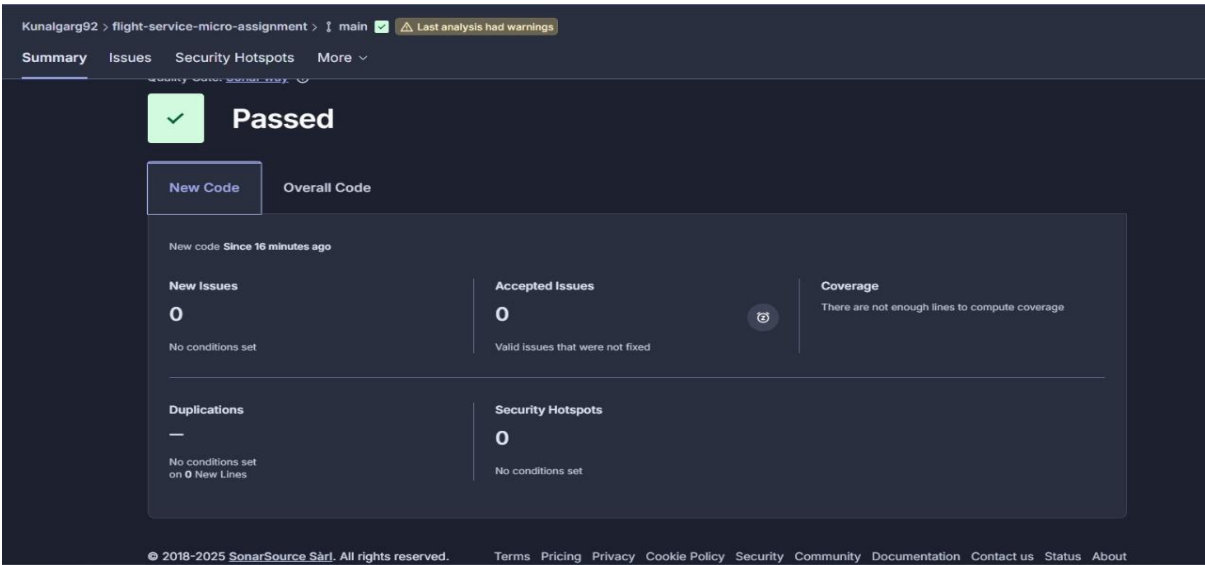
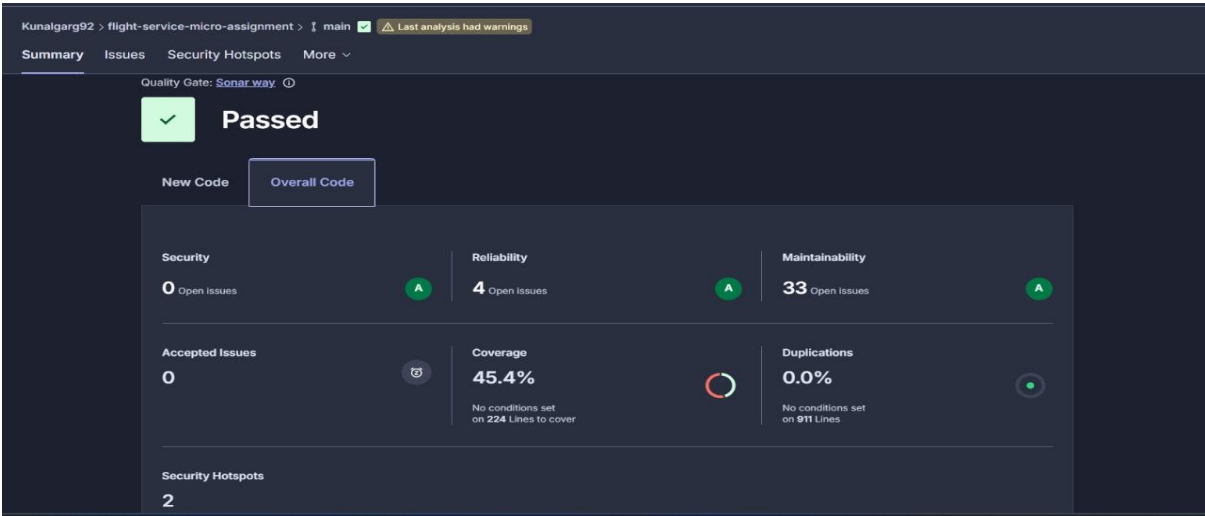
Booking Service

booking-service-micro-assignment-1Sessions

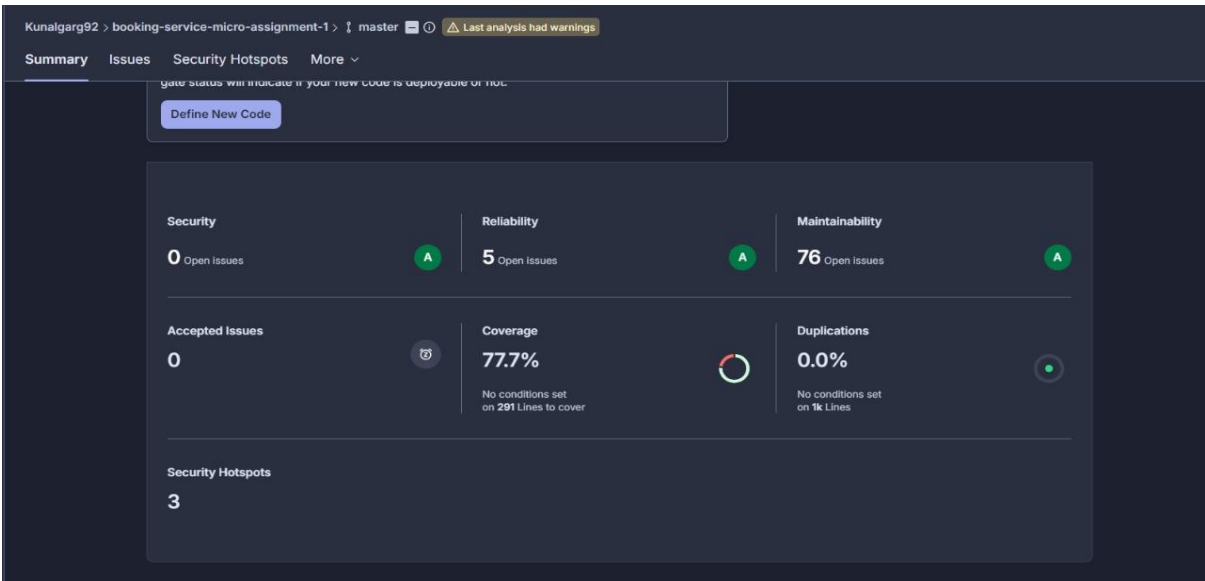
| Element | Missed Instructions | Cov. | Missed Branches | Cov. | Missed | Cxty | Missed | Lines | Missed | Methods | Missed | Classes |
|--|---------------------|------|-----------------|------|--------|------|--------|-------|--------|---------|--------|---------|
| com.booking_service.DTO | <div></div> | 89% | <div></div> | 59% | 83 | 207 | 0 | 40 | 0 | 91 | 0 | 6 |
| com.booking_service.Model | <div></div> | 92% | <div></div> | 71% | 38 | 120 | 0 | 26 | 0 | 51 | 0 | 3 |
| com.booking_service.exception | <div></div> | 91% | <div></div> | 50% | 12 | 32 | 12 | 94 | 7 | 27 | 0 | 3 |
| com.booking_service.service.implementation | <div></div> | 98% | <div></div> | 93% | 2 | 33 | 1 | 111 | 1 | 25 | 0 | 1 |
| com.booking_service.Controller | <div></div> | 100% | | n/a | 0 | 6 | 0 | 7 | 0 | 6 | 0 | 2 |
| com.booking_service.Feign | <div></div> | 100% | | n/a | 0 | 4 | 0 | 10 | 0 | 4 | 0 | 1 |
| com.booking_service | <div></div> | 100% | | n/a | 0 | 2 | 0 | 3 | 0 | 2 | 0 | 1 |
| Total | 243 of 3,071 | 92% | 140 of 396 | 64% | 135 | 404 | 13 | 291 | 8 | 206 | 0 | 17 |

Created with JaCoCo 0.8.10.202304240956

SonarQube (Flight Service)



Booking Service

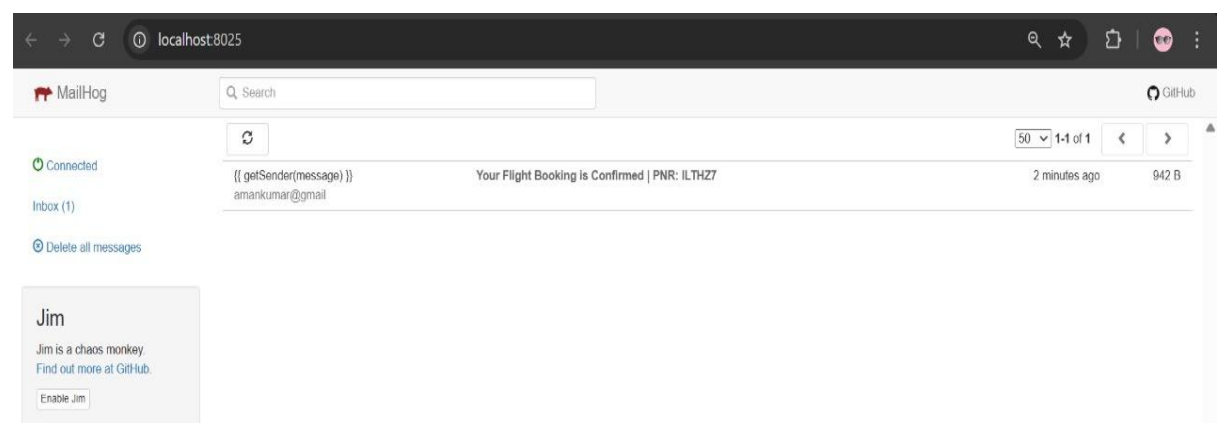


Jmeter Testing (using CLI)

```
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\Desktop\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 Breaker (using Kafka +MailHog)

```
2025-12-02T02:47:48.046+05:30 INFO 2452 --- [booking-service-micro-assignment] [consumer-0-0] 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
```



Config link

https://github.com/Kunalgarg92/config_flight_service