

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      |
| 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

The screenshot shows a POST request to `http://localhost:9999/api/flight/airline/inventory`. The request body is raw JSON:

```
1 {  
2   "airlineName": "Indigo",  
3   "flightNumber": "AE101",  
4   "fromPlace": "DELHI",  
5   "toPlace": "MUMBAI",  
6   "departureTime": "2025-12-05T09:00:00"  
}
```

The response status is 201 Created with a response body:

```
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": "DELHI",  
9   "id": "692c0df8265623755f891257",  
10  "price": 4500.0,  
}
```

2) Search

The screenshot shows a POST request to `http://localhost:9999/api/flight/search`. The request body is raw JSON:

```
1 {  
2   "fromPlace": "DELHI",  
3   "toPlace": "MUMBAI",  
4   "travelDate": "2025-12-05",  
5   "travelTime": ""  
}
```

The response status is 201 Created with a response body:

```
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,  
}
```

3) Booking flight

The screenshot shows a Postman interface for a POST request to `http://localhost:9998/api/flight/booking/692c45f86a221baaf8ad3055`. The request body is JSON:

```
1 {  
2   "email": "amankumar@gmail.com",  
3   "numberOfSeats": 2,  
4   "passengers": [  
5     {  
6       "age": 31,  
7       "fareApplied": 4500.0,  
8       "fareCategory": null,  
9       "fareMessage": null,  
10      "gender": "MALE",  
11    }  
12  ]  
13}
```

The response is **201 Created** with a duration of 2.55 s and a size of 510 B.

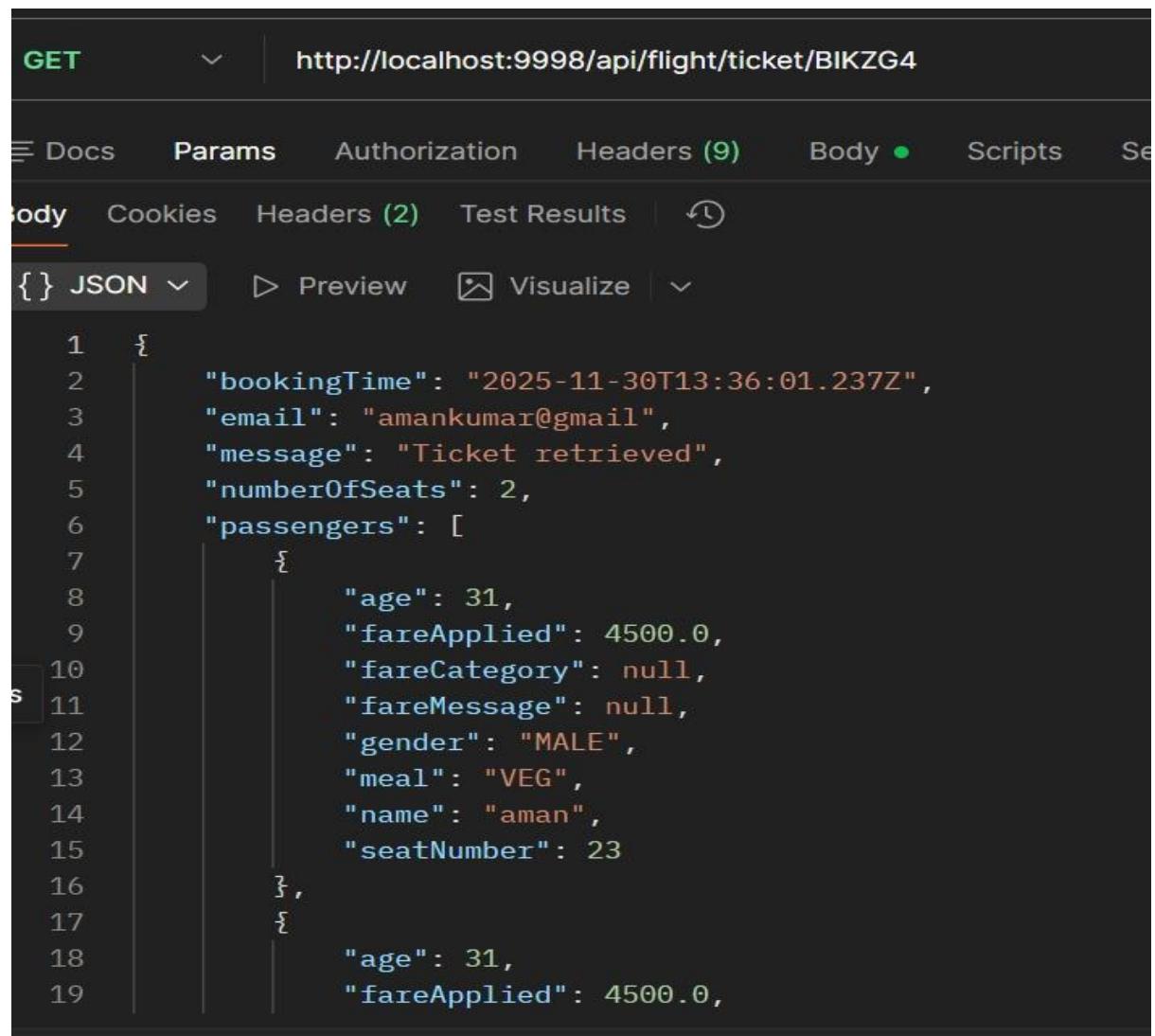
4) Get by email

The screenshot shows a Postman interface for a GET request to `http://localhost:9998/api/flight/booking/history/amankumar@gmail.com`. The response is **200 OK** with a duration of 570 ms and a size of 924 B.

The response body is JSON:

```
1 [  
2   {  
3     "bookingTime": "2025-11-30T13:36:01.237Z",  
4     "email": "amankumar@gmail.com",  
5     "message": "History item",  
6     "numberOfSeats": 2,  
7     "passengers": [  
8       {  
9         "age": 31,  
10        "fareApplied": 4500.0,  
11        "fareCategory": null,  
12        "fareMessage": null,  
13        "gender": "MALE",  
14        "meal": "VEG",  
15        "name": "aman",  
16        "seatNumber": 23  
17      },  
18      {  
19        "age": 31,  
20      }  
21    ]  
22}
```

5) GET by pnr



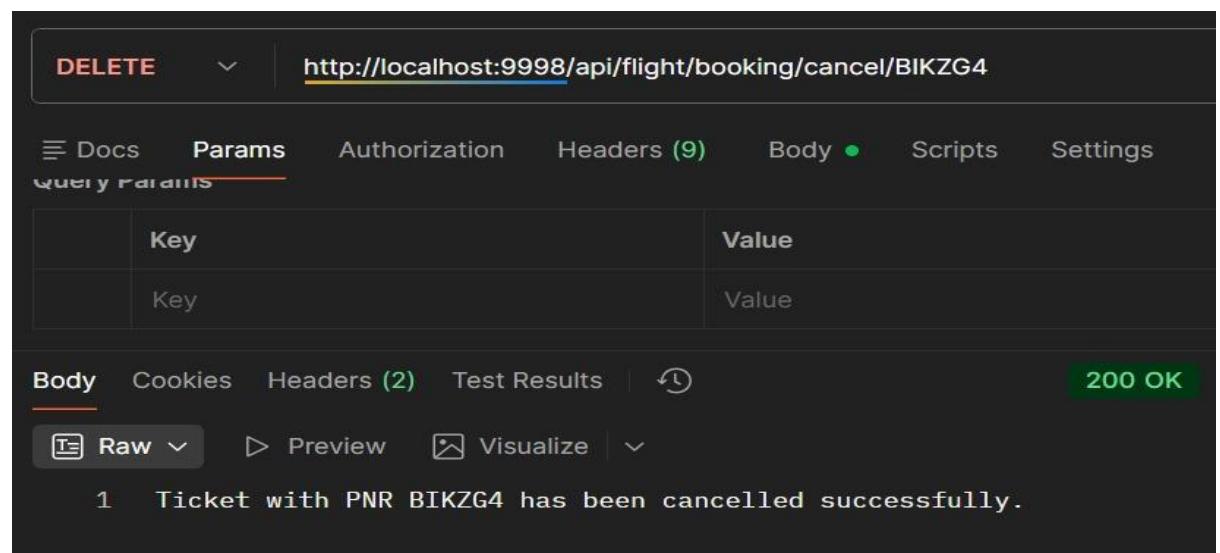
GET http://localhost:9998/api/flight/ticket/BIKZG4

Headers (9)

Body (1) JSON

```
1 {  
2   "bookingTime": "2025-11-30T13:36:01.237Z",  
3   "email": "amankumar@gmail.com",  
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,  
20    }  
21  ]  
22}  
23
```

6) Delete



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

Headers (9)

Body (1) Raw

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

200 OK

Eureka Integration

The screenshot shows the Eureka System Status interface at localhost:9997. It displays system metrics like current time (2025-11-30T22:54:01 +0530), uptime (00:05), and lease expiration status. Below this, a red warning message states: "RENEWALS ARE LESSER THAN THE THRESHOLD. THE SELF PRESERVATION MODE IS TURNED OFF. THIS MAY NOT PROTECT INSTANCE EXPIRY IN CASE OF NETWORK PROBLEMS." The "DS Replicas" section lists three instances 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)

The screenshot shows a POST request to <http://localhost:9996/flight-service-micro-assignment/api/flight/airline/inventory>. The request body is a JSON object representing a flight:

```
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",  
}
```

The response is a 201 Created status with a response time of 6.01 seconds. The response body is also a JSON object:

```
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".  
}
```

The screenshot shows a POST request to <http://localhost:9996/flight-service-micro-assignment/api/flight/search>. The request body is a JSON object with search parameters:

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

The response is a 201 Created status with a response time of 3.12 seconds. The response body is a JSON array with one element:

```
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  
}
```

Circuit-Breaker

```

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

Docs Params Authorization Headers (9) Body Scripts Settings
Body Cookies Headers (4) Test Results ⚡
500 Internal Server Error • 677 ms • 2.53 KB ⏺ Save Response
{} JSON ▾ Preview ⚡ Debug 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$ServiceUnavailable: [503] during [GET] to [http://flight-service-micro-assignment/api/flight/internal/692c45cf6a221baaf8ad3054] [FlightServiceClient#getFlightById(String)]: [load balancer does not contain an instance for the service flight-service-micro-assignment]\r\n\tat feign.FeignException.serverErrorStatus(FeignException.java:287)\r\n\tat feign.FeignException.errorStatus(FeignException.java:226)\r\n\tat feign.FeignException.errorStatus(FeignException.java:213)\r\n\tat feign.codec.ErrorDecoder$Default.decode(ErrorDecoder.java:103)\r\n\tat feign.InvocationContext.decodeError(InvocationContext.java:133)\r\n\tat feign.InvocationContext.proceed(InvocationContext.java:80)\r\n\tat feign.ResponseHandler.handleResponse(ResponseHandler.java:69)\r\n\tat feign.SynchronousMethodHandler.executeAndDecode(SynchronousMethodHandler.java:109)\r\n\tat feign.SynchronousMethodHandler.invoke(SynchronousMethodHandler.java:53)\r\n\tat feign.ReflectiveFeign$FeignInvocationHandler.invoke(ReflectiveFeign.java:104)\r\n\tat jdk.proxy2/jdk.proxy2.$Proxy102.getFlightById(Unknown Source)\r\n\tat com.booking_service.service.BookingServiceImplementation.lambda$1(BookingServiceImplementation.java:64)\r\n\tat reactor.core.publisher.MonoCallable.call(MonoCallable.java:72)\r\n\tat reactor.core.publisher.FluxSubscribeOnCallable$CallableSubscribeOnSubscription.run(FluxSubscribeOnCallable.java:228)\r\n\tat reactor.core.scheduler.SchedulerTask.call(SchedulerTask.java:68)\r\n\tat reactor.core.scheduler.SchedulerTask.call(SchedulerTask.java:28)\r\n\tat java.base/java.util.concurrent.FutureTask.run(FutureTask.java:264)\r\n\tat java.base/java.util.concurrent.ScheduledThreadPoolExecutor$ScheduledFutureTask.run(ScheduledThreadPoolExecutor.java:304)\r\n\tat java.base/java.util.concurrent.ThreadPoolExecutor(ThreadPoolExecutor.java:1136)\r\n\tat java.base/java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:635)\r\n\tat java.base/java.lang.Thread.run(Thread.java:833)\r\n",
6   "message": "[503] during [GET] to [http://flight-service-micro-assignment/api/flight/internal/692c45cf6a221baaf8ad3054] [FlightServiceClient#getFlightById(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-assignment											Sessions	
Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
com.flight_service.Controller		100%	n/a	0	8	0	12	0	8	0	3	
com.flight_service		77%	n/a	1	3	2	6	1	3	0	1	
com.flight_service.ServiceImplementation		100%		100%	0	16	0	69	0	11	0	1
com.flight_service.Exception		98%		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

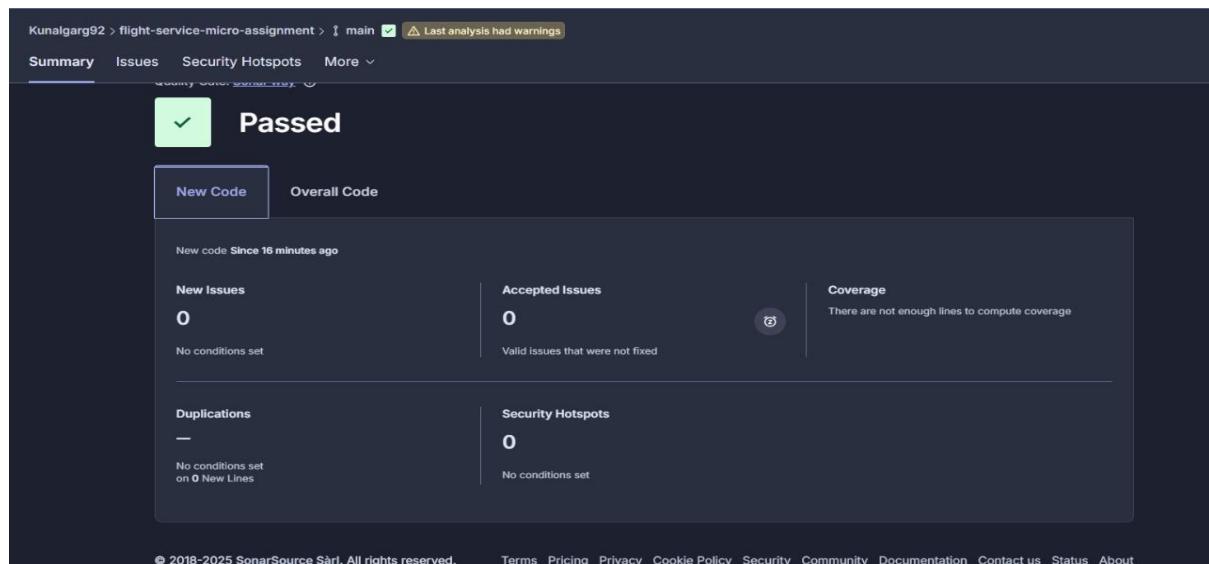
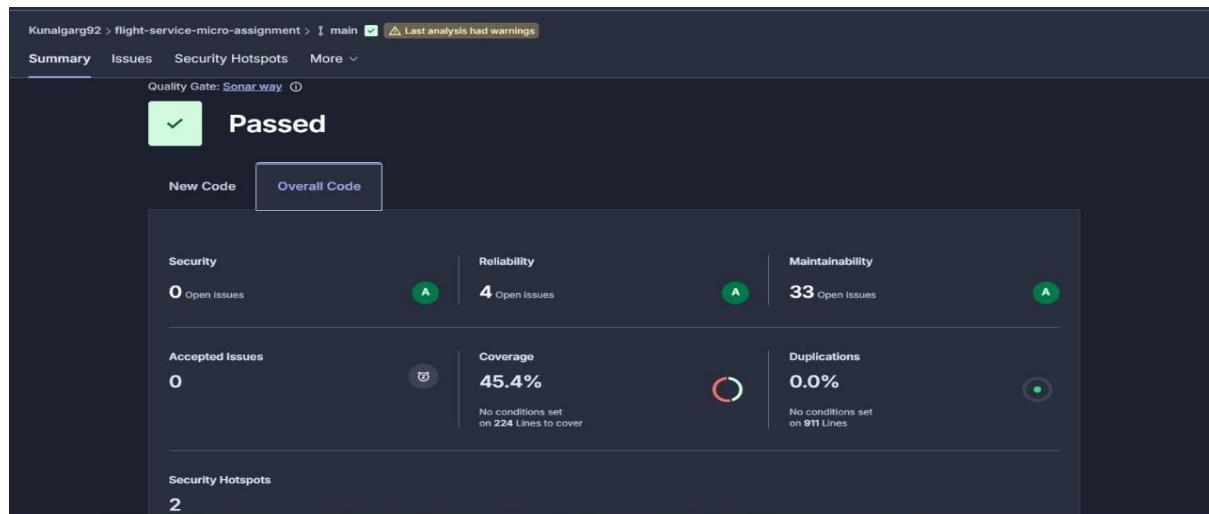
Created with JaCoCo 0.8.11 2023/10/14 08:53

Booking Service

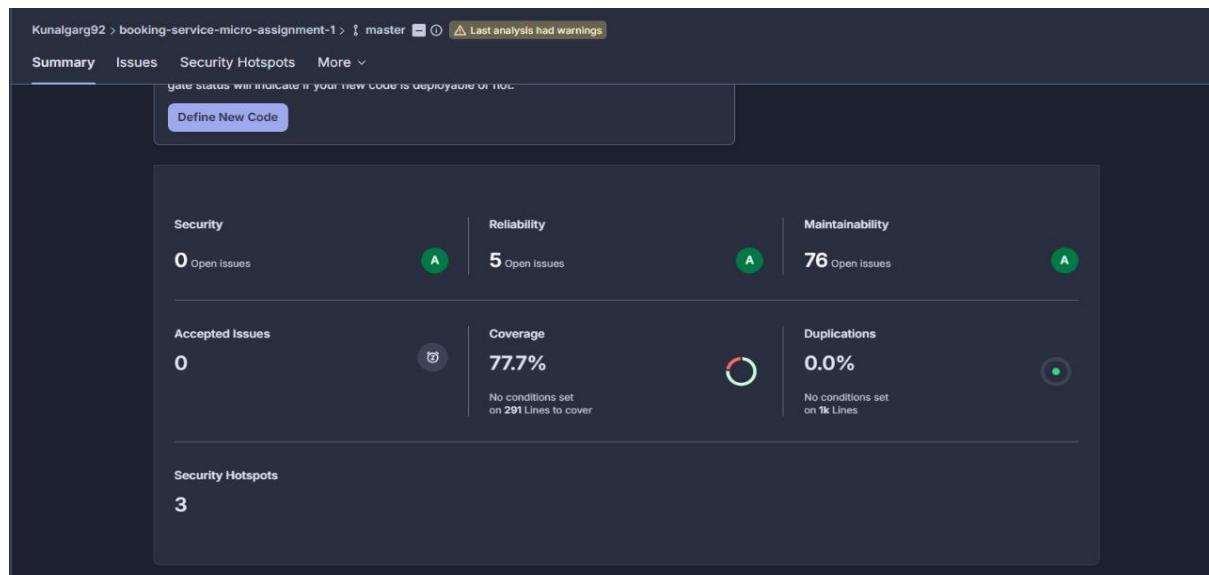
booking-service-micro-assignment-1											Sessions	
Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
com.booking_service.DTO		89%		59%	83	207	0	40	0	91	0	6
com.booking_service.Model		92%		71%	38	120	0	26	0	51	0	3
com.booking_service.Exception		91%		50%	12	32	12	94	7	27	0	3
com.booking_service.ServiceImplementation		98%		93%	2	33	1	111	1	25	0	1
com.booking_service.Controller		100%	n/a	0	6	0	7	0	6	0	2	
com.booking_service.Feign		100%	n/a	0	4	0	10	0	4	0	1	
com.booking_service		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 2023/10/14 08:56

SonarQube (Flight Service)



Booking Service

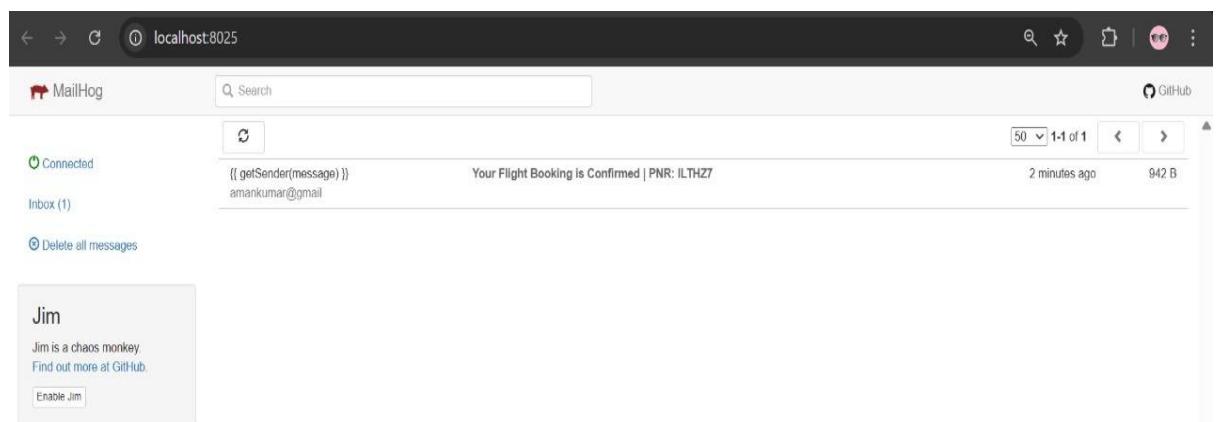


Jmeter Testing (using CLI)

```
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 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 = 5242880
    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