Book My Consultation

A. Pre Requisites

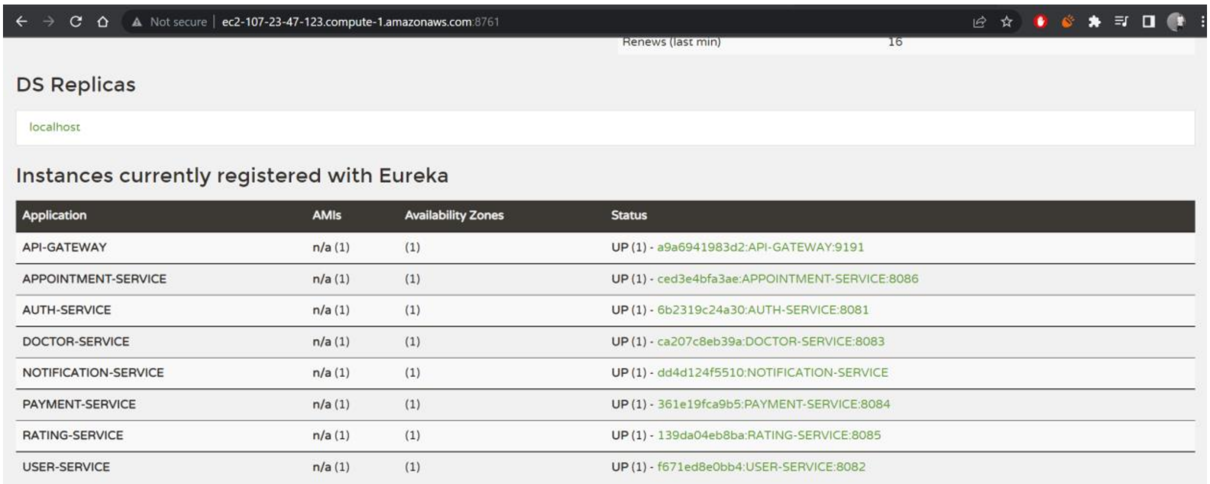
Changes to be made to run the project:

1. Appointment Service (Port:8086)
    a. Data source URL, username and password in application.properties for SQL and Mongo DB
    b. Default-zone URL of the Eureka Server application.yml
2. Doctor Service(Port:8083)
    a. Data source URL, username and password in application.properties for Mongo DB
    b. Default-zone URL of the Eureka Server in application.yml
    c. Boot strap server URL for KAFKA
3. Notification Service (Port:8080)
    a. Default-zone URL of the Eureka Server in application.yml
    b. Boot strap server URL for KAFKA in application.yml
    c. Access key and secret of the IAM user with SES access in SESEmailService.java
    d. Access key and secret of SMTP credentials in SESEmailService.java
4. Payment Service (Port:8084)
    a. Default-zone URL of the Eureka Server in application.yml
5. Rating Service (Port:8085)
    a. Data source URL, username and password in application.properties for Mongo DB
    b. Default-zone URL of the Eureka Server in application.yml
6. User Service(Port:8082)
    a. Data source URL, username and password in application.properties for Mongo DB
    b. Default-zone URL of the Eureka Server in application.yml
    c. Boot strap server URL for KAFKA
7. API Gateway (Port:9191)
8. Authentication Service (Port:8081)
9. Eureka Service (Port:8761)

B. To run the project after making the above changes as the run the docker compose file with command “docker-compose up -d” all the services shall come up without the need to create jar files as the individual service Docker files are multi-stage and should create the jar files automatically. SQL, Mongo DB and Kafka are part of the Docker Compose creating local instances of the three services used by application so the base URL of these services must be the same as the EC2 instance.

CODE LOGIC AND SCREENSHOTS

Eureka Service:



DS Replicas

localhost

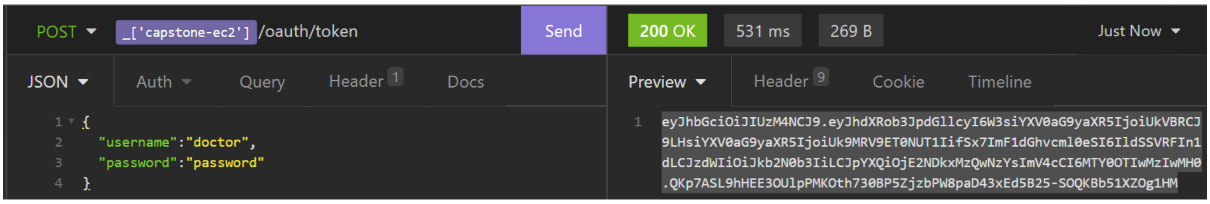
Instances currently registered with Eureka

Application	AMIs	Availability Zones	Status
API-GATEWAY	n/a (1)	(1)	UP (1) - a9a6941983d2:API-GATEWAY:9191
APPOINTMENT-SERVICE	n/a (1)	(1)	UP (1) - ced3e4bfa3ae:APPOINTMENT-SERVICE:8086
AUTH-SERVICE	n/a (1)	(1)	UP (1) - 6b2319c24a30:AUTH-SERVICE:8081
DOCTOR-SERVICE	n/a (1)	(1)	UP (1) - ca207c8eb39a:DOCTOR-SERVICE:8083
NOTIFICATION-SERVICE	n/a (1)	(1)	UP (1) - dd4d124f5510:NOTIFICATION-SERVICE
PAYMENT-SERVICE	n/a (1)	(1)	UP (1) - 361e19fca9b5:PAYMENT-SERVICE:8084
RATING-SERVICE	n/a (1)	(1)	UP (1) - 139da04eb8ba:RATING-SERVICE:8085
USER-SERVICE	n/a (1)	(1)	UP (1) - f671ed8e0bb4:USER-SERVICE:8082

All the services are registered on the EUREKA Server.

For the screenshots below we will be using the respective token which has a validity of 1 day:

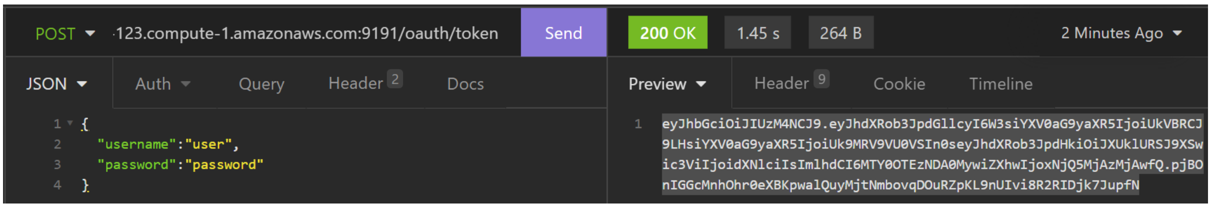
a. Doctor (username: doctor, password:password):



```
{
  "username":"doctor",
  "password":"password"
}
```

```
eyJhbGciOiJIUzM4NCJ9.eyJhdXRob3JpdGllcyI6W3siYXV0aG9yaXR5IjoiUkVBRCJ9LHsiYXV0aG9yaXR5IjoiUk9MRV9ET0NUT1IifSx7ImF1dGhvcml0eSI6IldSSVRFIn1dLCJzdWIiOiJkb2N0b3IiLCJpYXQiOjE2NDkxMzQwNzYsImV4cCI6MTY0OTIwMzIwMH0.QKp7ASL9hHEE3OUlpPMKOth730BP5ZjzbPW8paD43xEd5B25-SOQKBb51XZOg1HM
```

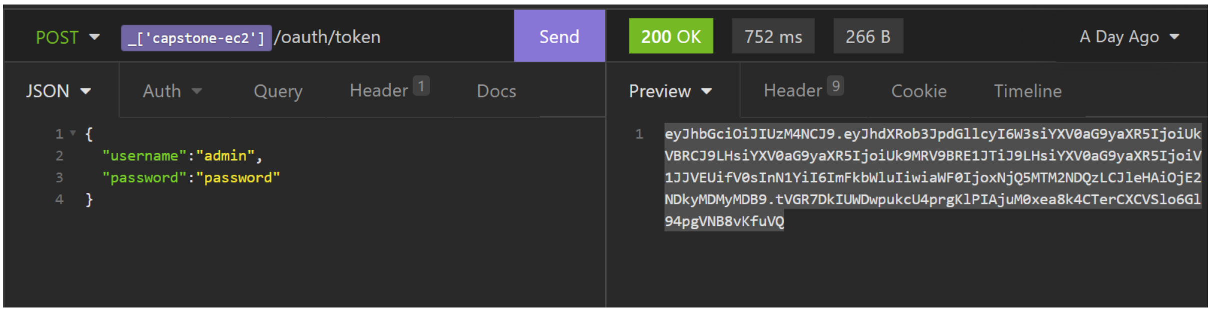
b. User(username:user, password:password) :



```
{
  "username":"user",
  "password":"password"
}
```

```
eyJhbGciOiJIUzM4NCJ9.eyJhdXRob3JpdGllcyI6W3siYXV0aG9yaXR5IjoiUkVBRCJ9LHsiYXV0aG9yaXR5IjoiUk9MRV9VU0VSIn0seyJhdXRob3JpdHkiOiJXUklURSJ9XSwic3ViIjoidXNlciIsImlhdCI6MTY0OTEzNDA0MywiZXhwIjoxNjQ5MjAzMjAwfQ.pjBOnIGGcMnhOhr0eXBKpwalQuyMjtNmbovqDOuRZpKL9nUIvi8R2RIDjk7JupfN
```

c. Admin (username:admin, password:password)



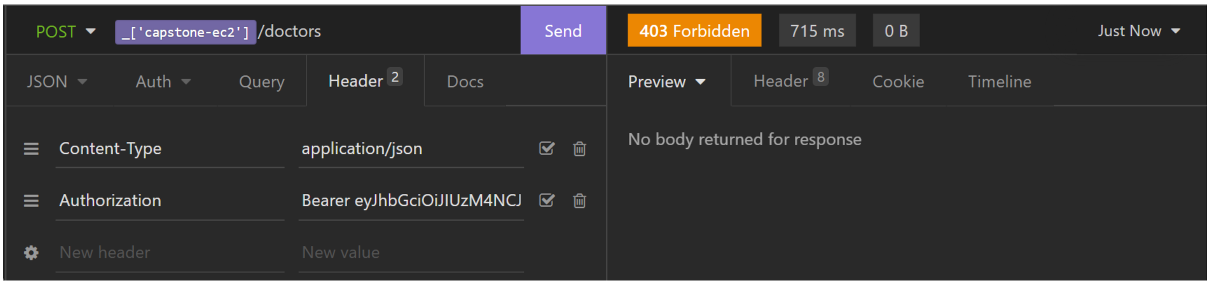
```
{
  "username":"admin",
  "password":"password"
}
```

```
eyJhbGciOiJIUzM4NCJ9.eyJhdXRob3JpdGllcyI6W3siYXV0aG9yaXR5IjoiUkVBRCJ9LHsiYXV0aG9yaXR5IjoiUk9MRV9BRE1JTiJ9LHsiYXV0aG9yaXR5IjoiV1JJVEUifV0sInN1YiI6ImFkbWluIiwiaWF0IjoxNjQ5MTM2NDQzLCJleHAiOjE2NDkyMDMyMDB9.tVGR7DkIUWDwpukcU4prgKlPIAjuM0xea8k4CTerCXCVSlo6Gl94pgVNB8vKfuVQ
```

Doctor Service:

End Point 1

1. Using bad token to call the API getting 403 Forbidden



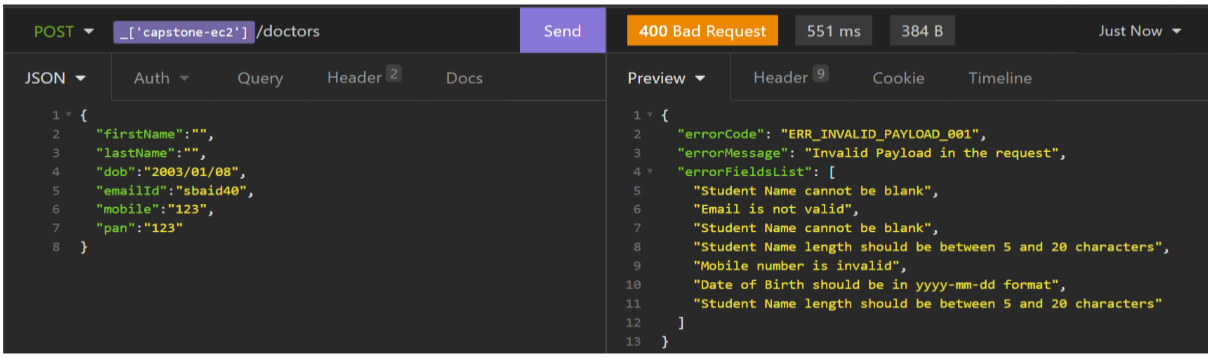
POST _['capstone-ec2'] /doctors

403 Forbidden 715 ms 0 B

Content-Type	application/json
Authorization	Bearer eyJhbGciOiJIUzM4NCJ

No body returned for response

2. Sending bad data and getting 400 Bad Request



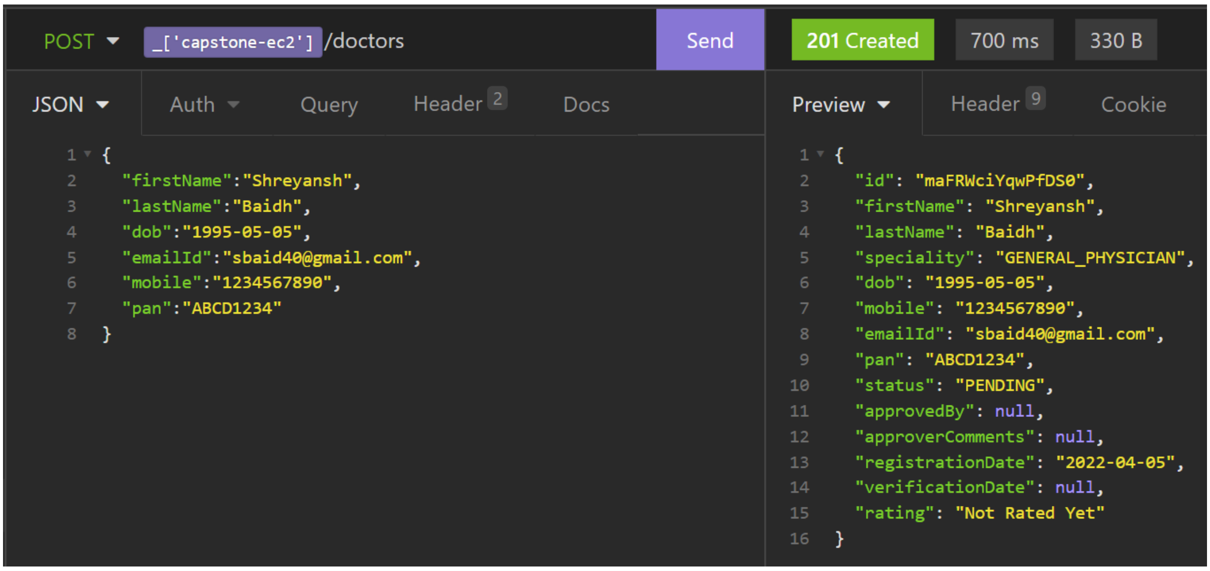
POST _['capstone-ec2'] /doctors

```
{
  "firstName":"",
  "lastName":"",
  "dob":"2003/01/08",
  "emailId":"sbaid40",
  "mobile":"123",
  "pan":"123"
}
```

400 Bad Request 551 ms 384 B

```
{
  "errorCode": "ERR_INVALID_PAYLOAD_001",
  "errorMessage": "Invalid Payload in the request",
  "errorFieldsList": [
    "Student Name cannot be blank",
    "Email is not valid",
    "Student Name cannot be blank",
    "Student Name length should be between 5 and 20 characters",
    "Mobile number is invalid",
    "Date of Birth should be in yyyy-mm-dd format",
    "Student Name length should be between 5 and 20 characters"
  ]
}
```

3. Good data sent and getting 201 Created



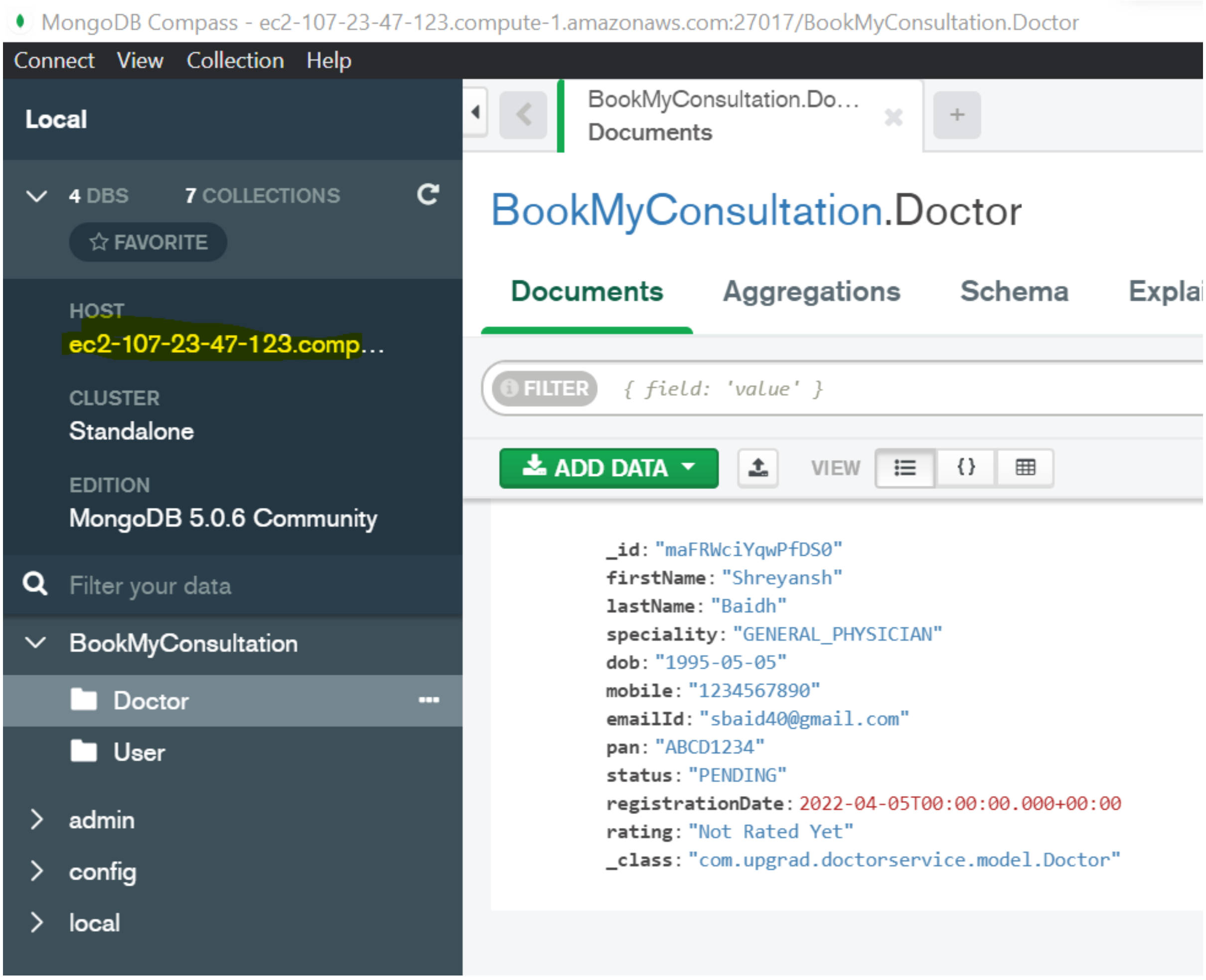
POST _['capstone-ec2'] /doctors

```
{
  "firstName":"Shreyansh",
  "lastName":"Baidh",
  "dob":"1995-05-05",
  "emailId":"sbaid40@gmail.com",
  "mobile":"1234567890",
  "pan":"ABCD1234"
}
```

201 Created 700 ms 330 B

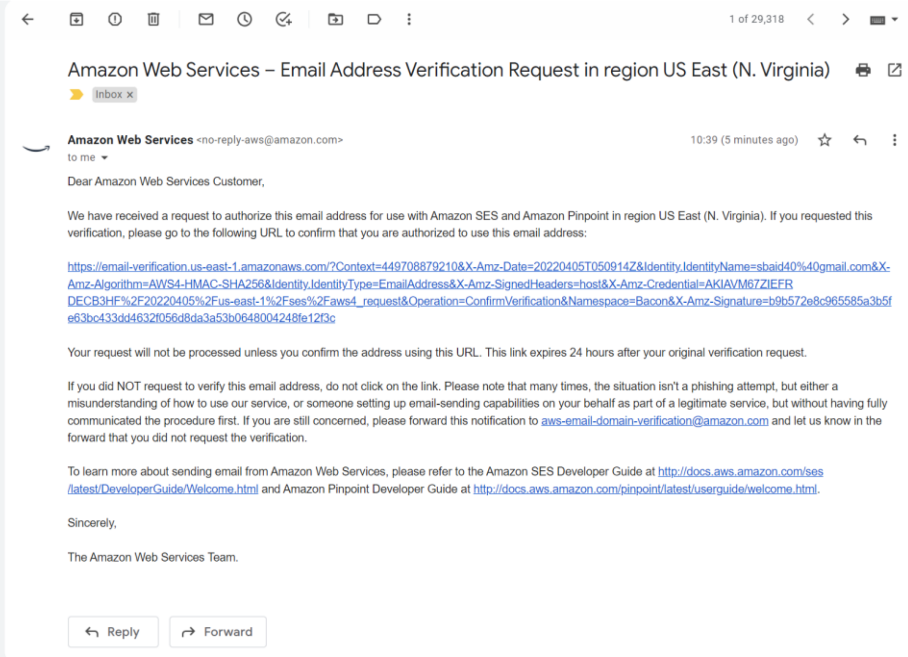
```
{
  "id": "maFRWciYqwPfDS0",
  "firstName": "Shreyansh",
  "lastName": "Baidh",
  "speciality": "GENERAL_PHYSICIAN",
  "dob": "1995-05-05",
  "mobile": "1234567890",
  "emailId": "sbaid40@gmail.com",
  "pan": "ABCD1234",
  "status": "PENDING",
  "approvedBy": null,
  "approverComments": null,
  "registrationDate": "2022-04-05",
  "verificationDate": null,
  "rating": "Not Rated Yet"
}
```

Doctor Created Successfully



```
_id: "maFRWciYqwPfDS0"
firstName: "Shreyansh"
lastName: "Baidh"
speciality: "GENERAL_PHYSICIAN"
dob: "1995-05-05"
mobile: "1234567890"
emailId: "sbaid40@gmail.com"
pan: "ABCD1234"
status: "PENDING"
registrationDate: 2022-04-05T00:00:00.000+00:00
rating: "Not Rated Yet"
_class: "com.upgrad.doctorservice.model.Doctor"
```

Doctor data saved in database successfully



Amazon Web Services – Email Address Verification Request in region US East (N. Virginia)

Amazon Web Services <no-reply-aws@amazon.com>
to me
10:39 (5 minutes ago)

Dear Amazon Web Services Customer,

We have received a request to authorize this email address for use with Amazon SES and Amazon Pinpoint in region US East (N. Virginia). If you requested this verification, please go to the following URL to confirm that you are authorized to use this email address:

https://email-verification.us-east-1.amazonaws.com/?Context=449708879210&X-Amz-Date=20220405T050914Z&Identity.IdentityName=sbaid40%40gmail.com&X-Amz-Algorithm=AWS4-HMAC-SHA256&Identity.IdentityType=EmailAddress&X-Amz-SignedHeaders=host&X-Amz-Credential=AKIAVM67ZIEFRDECB3HF%2F20220405%2Fus-east-1%2Fses%2Faws4_request&Operation=ConfirmVerification&Namespace=Bacon&X-Amz-Signature=b9b572e8c965585a3b5fe63bc433dd4632f056d8da3a53b0648004248fe12f3c

Your request will not be processed unless you confirm the address using this URL. This link expires 24 hours after your original verification request.

If you did NOT request to verify this email address, do not click on the link. Please note that many times, the situation isn't a phishing attempt, but either a misunderstanding of how to use our service, or someone setting up email-sending capabilities on your behalf as part of a legitimate service, but without having fully communicated the procedure first. If you are still concerned, please forward this notification to aws-email-domain-verification@amazon.com and let us know in the forward that you did not request the verification.

To learn more about sending email from Amazon Web Services, please refer to the Amazon SES Developer Guide at http://docs.aws.amazon.com/ses/latest/DeveloperGuide/Welcome.html and Amazon Pinpoint Developer Guide at http://docs.aws.amazon.com/pinpoint/latest/userguide/welcome.html.

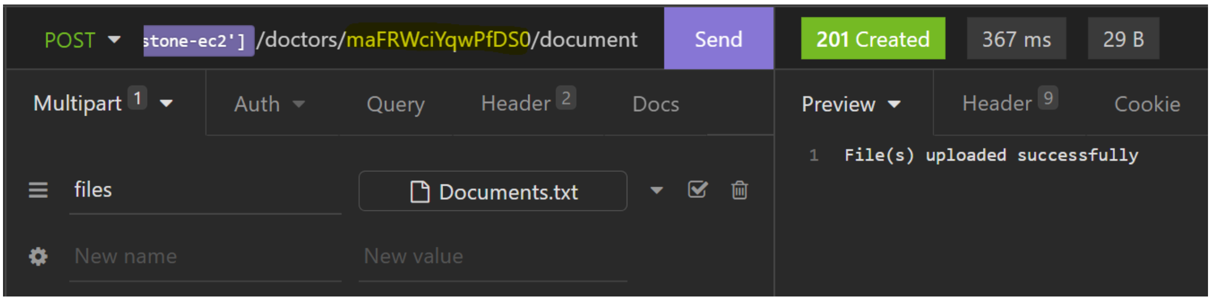
Sincerely,

The Amazon Web Services Team.

Email verification request received on passed email address

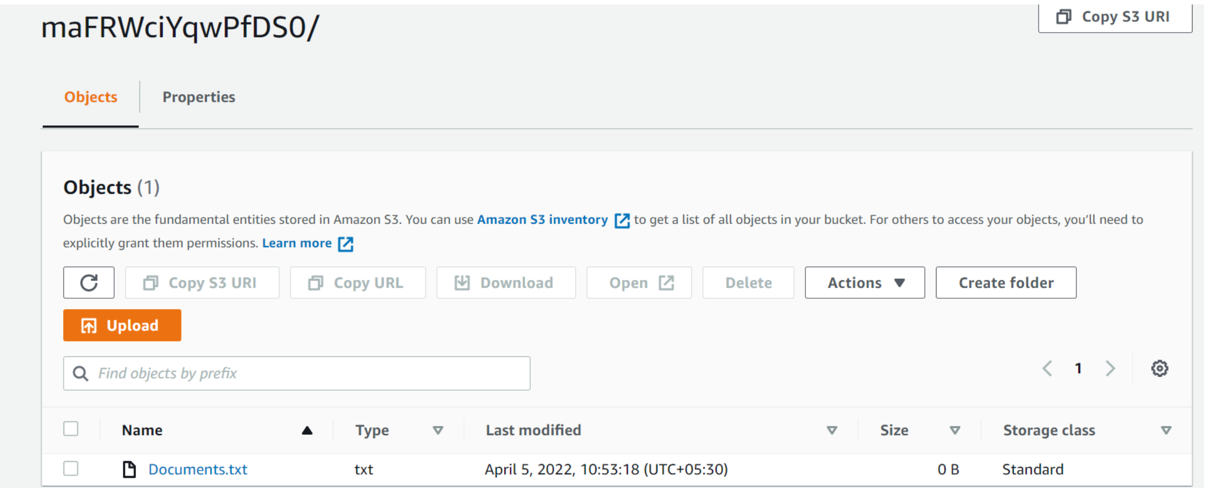
End Point 2

Upload files for Doctor to S3



```
POST  stone-ec2'] /doctors/maFRWciYqwPfDS0/document
201 Created   367 ms   29 B
files   Documents.txt
File(s) uploaded successfully
```

File uploaded for the above registered doctor



maFRWciYqwPfDS0/

Objects (1)

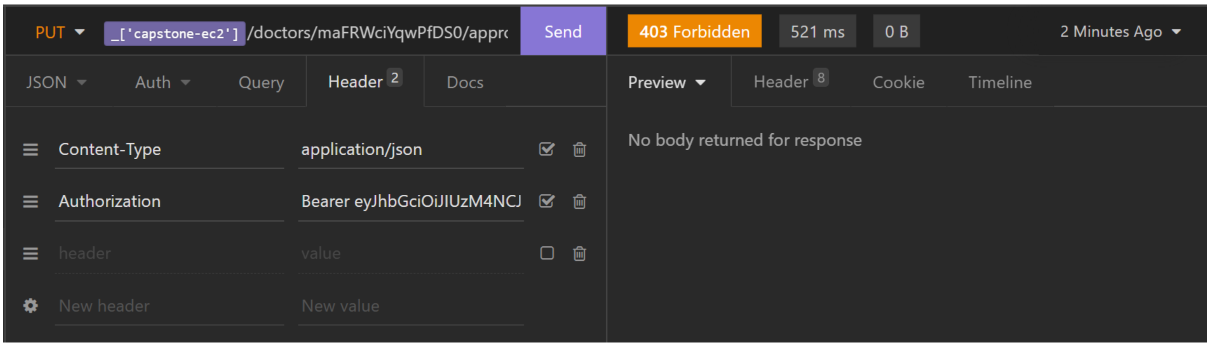
Objects are the fundamental entities stored in Amazon S3. You can use **Amazon S3 inventory** to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. **Learn more**

	Name	Type	Last modified	Size	Storage class
□	Documents.txt	txt	April 5, 2022, 10:53:18 (UTC+05:30)	0 B	Standard

File uploaded in directory created as the id generated above with the uploaded file on S3

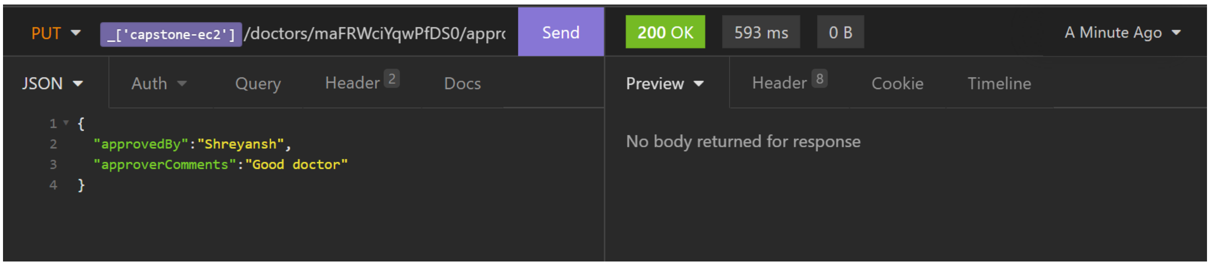
End Point 3:

Approve a doctor



```
PUT  _['capstone-ec2'] /doctors/maFRWciYqwPfDS0/appr
403 Forbidden   521 ms   0 B
Content-Type    application/json
Authorization   Bearer eyJhbGciOiJIUzM4NCJ
No body returned for response
```

Unauthorized when bad token is provided



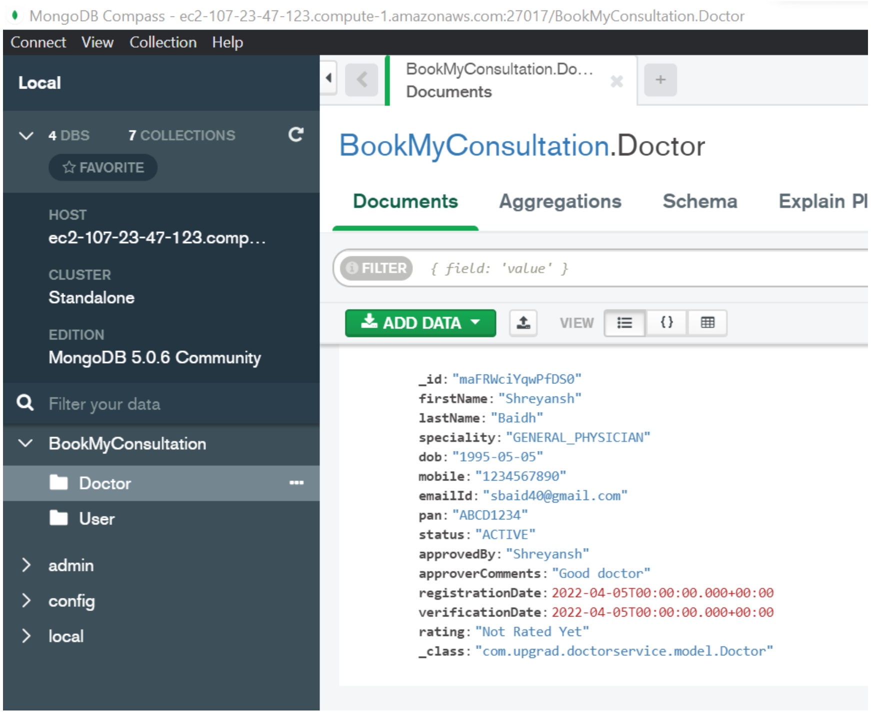
PUT _['capstone-ec2'] /doctors/maFRWciYqwPfDS0/appr

200 OK 593 ms 0 B

```
{
  "approvedBy":"Shreyansh",
  "approverComments":"Good doctor"
}
```

No body returned for response

200 OK response when good token is provided



MongoDB Compass - ec2-107-23-47-123.compute-1.amazonaws.com:27017/BookMyConsultation.Doctor

HOST
ec2-107-23-47-123.comp…

CLUSTER
Standalone

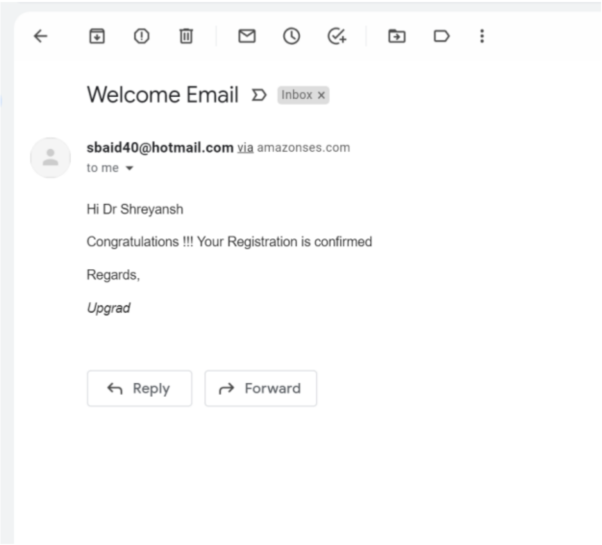
EDITION
MongoDB 5.0.6 Community

BookMyConsultation.Doctor

{ field: 'value' }

```
_id: "maFRWciYqwPfDS0"
firstName: "Shreyansh"
lastName: "Baidh"
speciality: "GENERAL_PHYSICIAN"
dob: "1995-05-05"
mobile: "1234567890"
emailId: "sbaid40@gmail.com"
pan: "ABCD1234"
status: "ACTIVE"
approvedBy: "Shreyansh"
approverComments: "Good doctor"
registrationDate: 2022-04-05T00:00:00.000+00:00
verificationDate: 2022-04-05T00:00:00.000+00:00
rating: "Not Rated Yet"
_class: "com.upgrad.doctorservice.model.Doctor"
```

Database updated with active status



Welcome Email

sbaid40@hotmail.com via amazonses.com
to me

Hi Dr Shreyansh

Congratulations !!! Your Registration is confirmed

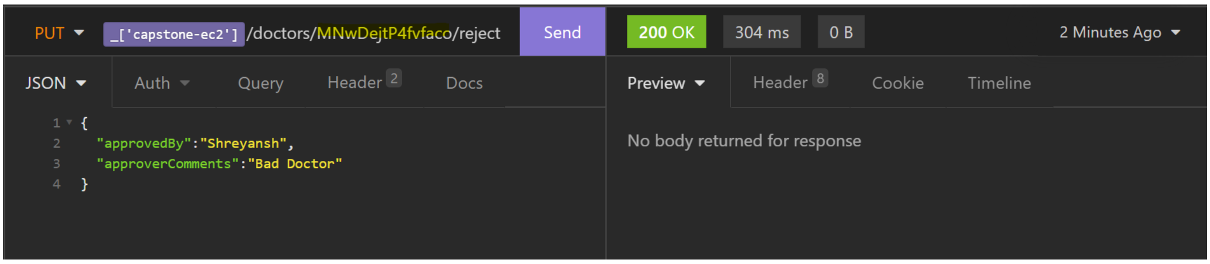
Regards,

Upgrad

Approval email received

End Point 4

Reject a Doctor



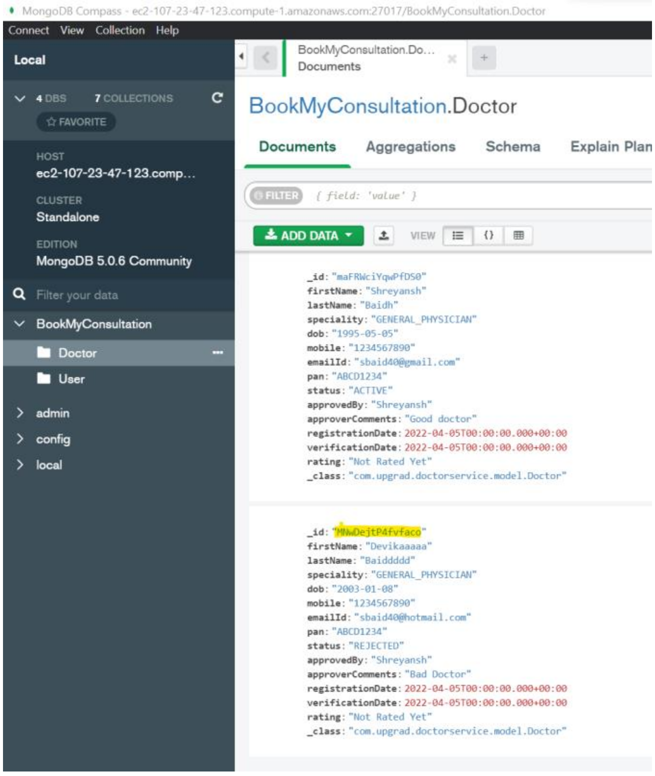
```
PUT _['capstone-ec2'] /doctors/MNwDejtP4fvfaco/reject
```

```
{
  "approvedBy":"Shreyansh",
  "approverComments":"Bad Doctor"
}
```

200 OK 304 ms 0 B

No body returned for response

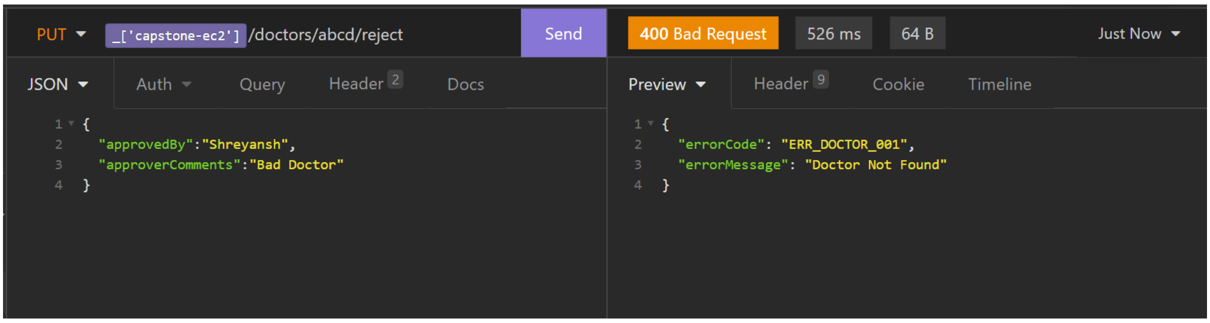
Create another doctor and reject using its ID



```
_id: "maFRWciYqwPfDS0"
firstName: "Shreyansh"
lastName: "Baidh"
speciality: "GENERAL_PHYSICIAN"
dob: "1995-05-05"
mobile: "1234567890"
emailId: "sbaid40@gmail.com"
pan: "ABCD1234"
status: "ACTIVE"
approvedBy: "Shreyansh"
approverComments: "Good doctor"
registrationDate: 2022-04-05T00:00:00.000+00:00
verificationDate: 2022-04-05T00:00:00.000+00:00
rating: "Not Rated Yet"
_class: "com.upgrad.doctorservice.model.Doctor"
```

```
_id: "MNwDejtP4fvfaco"
firstName: "Devikaaaaa"
lastName: "Baiddddd"
speciality: "GENERAL_PHYSICIAN"
dob: "2003-01-08"
mobile: "1234567890"
emailId: "sbaid40@hotmail.com"
pan: "ABCD1234"
status: "REJECTED"
approvedBy: "Shreyansh"
approverComments: "Bad Doctor"
registrationDate: 2022-04-05T00:00:00.000+00:00
verificationDate: 2022-04-05T00:00:00.000+00:00
rating: "Not Rated Yet"
_class: "com.upgrad.doctorservice.model.Doctor"
```

Status updated to REJECTED



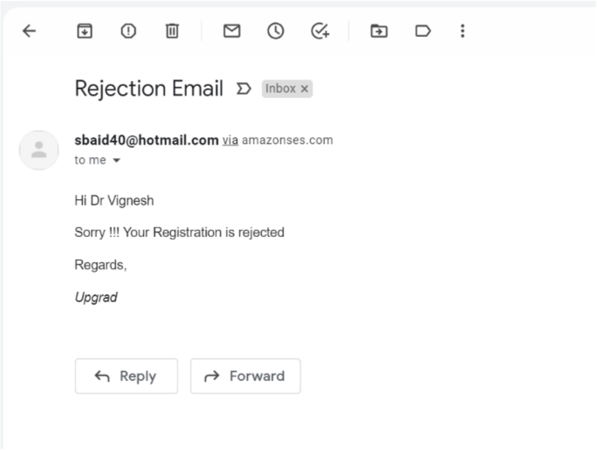
```
PUT _['capstone-ec2'] /doctors/abcd/reject
```

```
{
  "approvedBy":"Shreyansh",
  "approverComments":"Bad Doctor"
}
```

400 Bad Request 526 ms 64 B

```
{
  "errorCode": "ERR_DOCTOR_001",
  "errorMessage": "Doctor Not Found"
}
```

400 Bad Request when the Doctor id provided does not exist



Rejection Email

sbaid40@hotmail.com via amazonses.com
to me

Hi Dr Vignesh

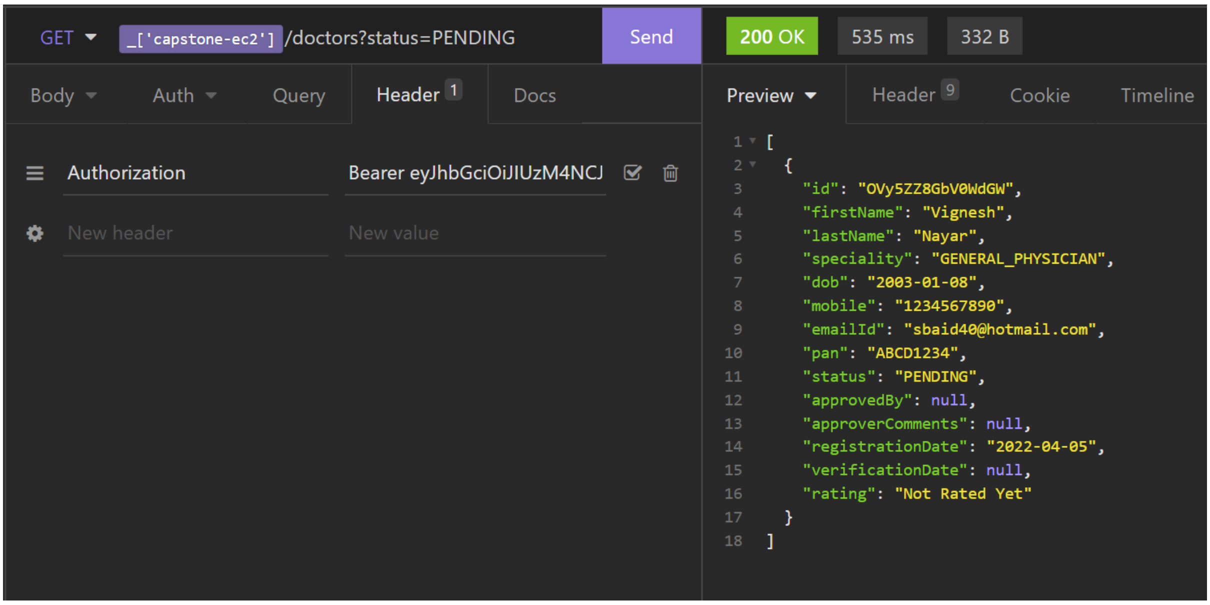
Sorry !!! Your Registration is rejected

Regards,

Upgrad

Email received for rejection

End Point 5



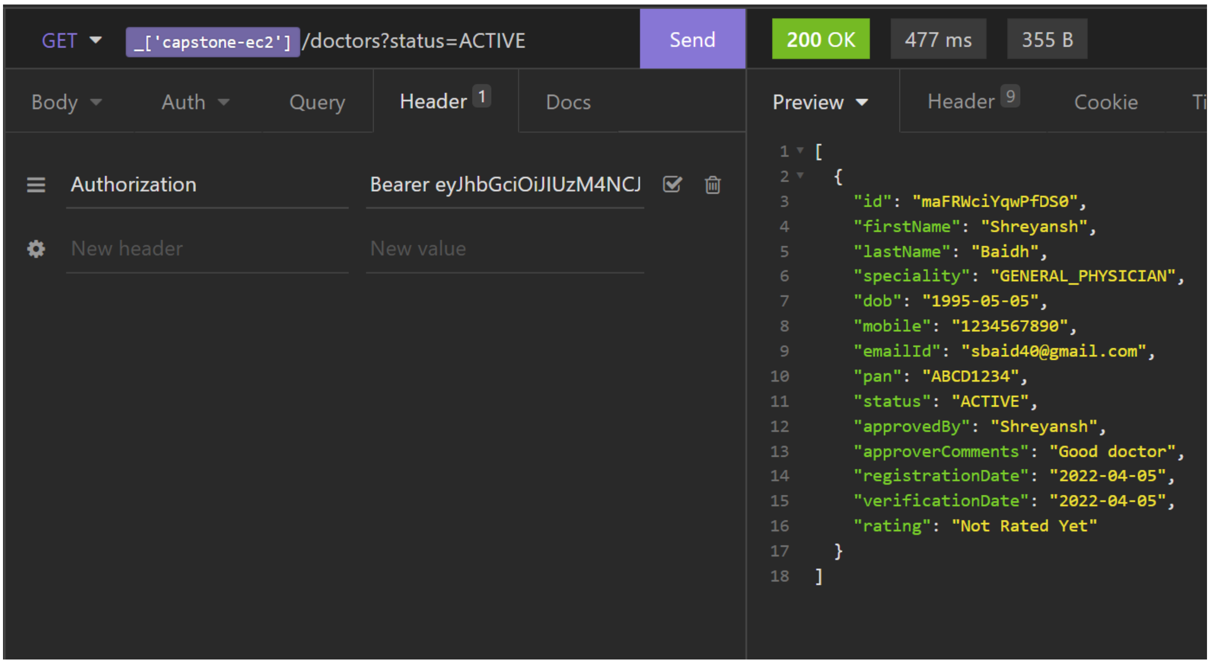
GET _['capstone-ec2'] /doctors?status=PENDING

200 OK 535 ms 332 B

Authorization: Bearer eyJhbGciOiJIUzM4NCJ

```
[
  {
    "id": "OVy5ZZ8GbV0WdGW",
    "firstName": "Vignesh",
    "lastName": "Nayar",
    "speciality": "GENERAL_PHYSICIAN",
    "dob": "2003-01-08",
    "mobile": "1234567890",
    "emailId": "sbaid40@hotmail.com",
    "pan": "ABCD1234",
    "status": "PENDING",
    "approvedBy": null,
    "approverComments": null,
    "registrationDate": "2022-04-05",
    "verificationDate": null,
    "rating": "Not Rated Yet"
  }
]
```

All doctors with status pending

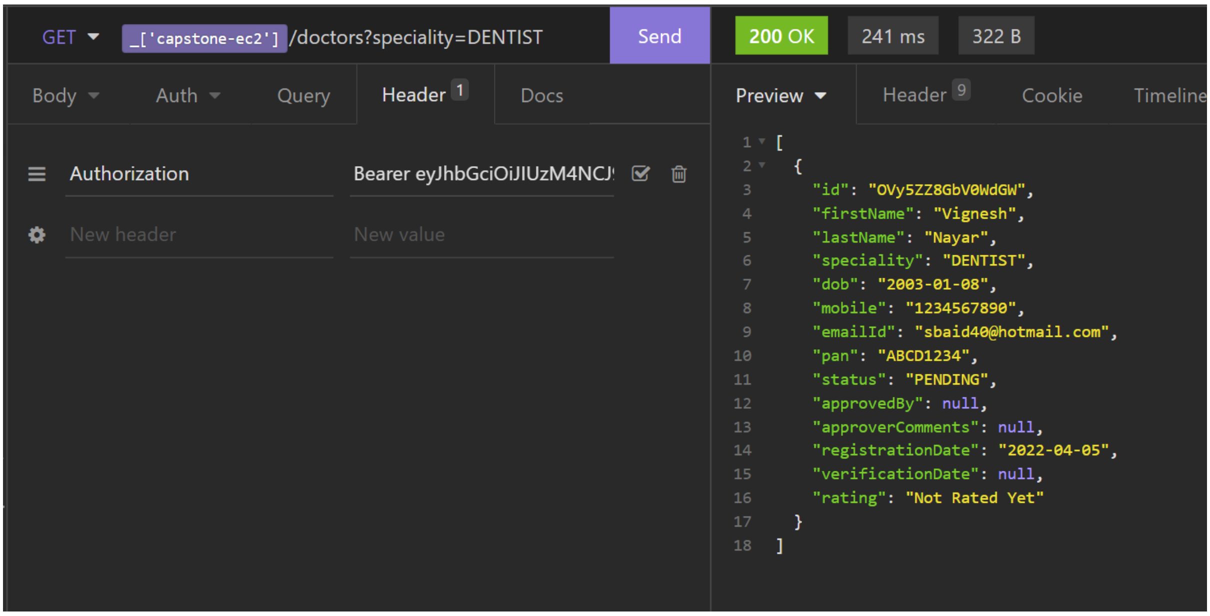


```
GET _['capstone-ec2'] /doctors?status=ACTIVE
```

Authorization: Bearer eyJhbGciOiJIUzM4NCJ

```
[
  {
    "id": "maFRWciYqwPfDS0",
    "firstName": "Shreyansh",
    "lastName": "Baidh",
    "speciality": "GENERAL_PHYSICIAN",
    "dob": "1995-05-05",
    "mobile": "1234567890",
    "emailId": "sbaid40@gmail.com",
    "pan": "ABCD1234",
    "status": "ACTIVE",
    "approvedBy": "Shreyansh",
    "approverComments": "Good doctor",
    "registrationDate": "2022-04-05",
    "verificationDate": "2022-04-05",
    "rating": "Not Rated Yet"
  }
]
```

All doctors with status active

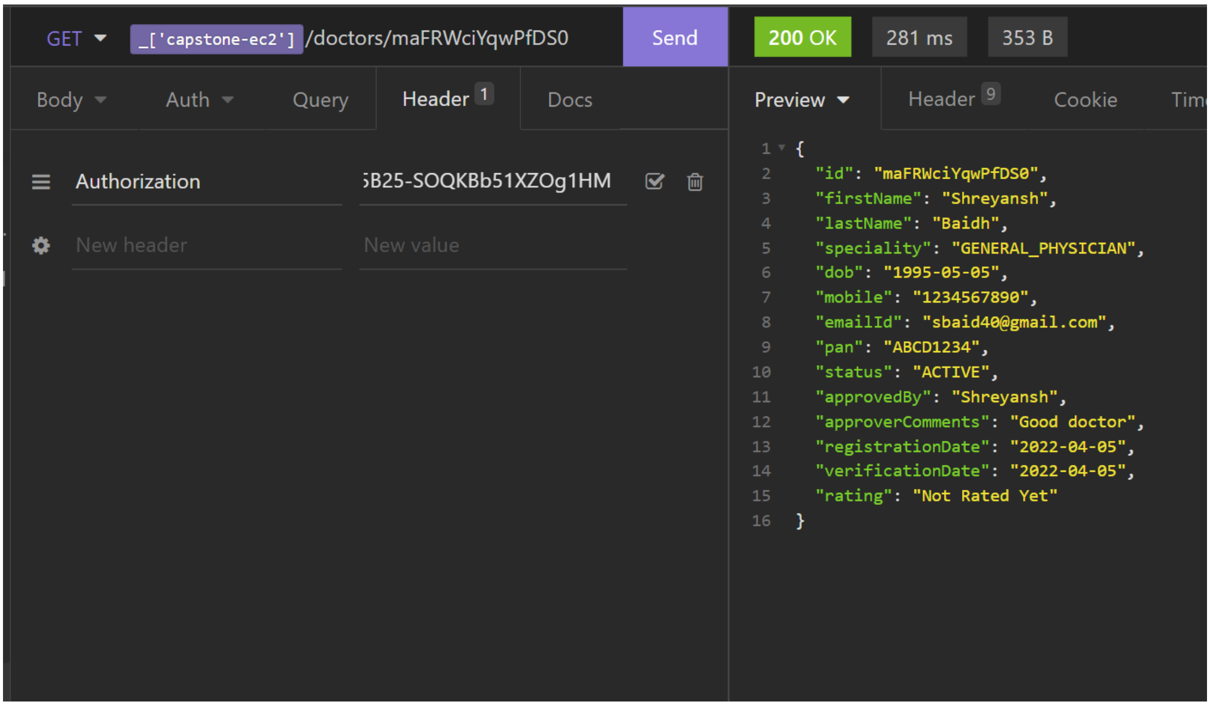


```
GET _['capstone-ec2'] /doctors?speciality=DENTIST
```

Authorization: Bearer eyJhbGciOiJIUzM4NCJ!

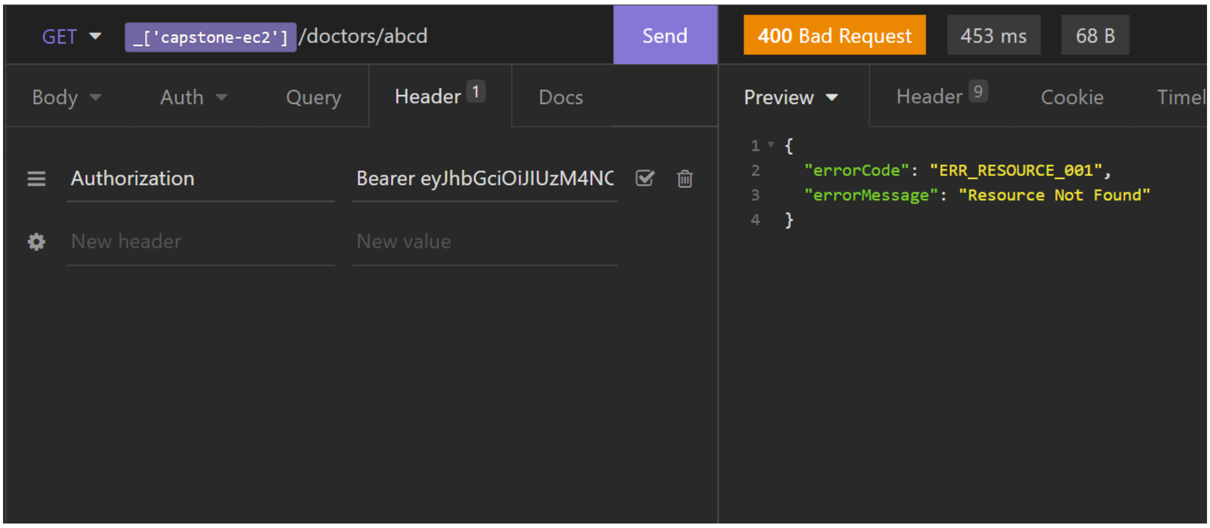
```
[
  {
    "id": "OVy5ZZ8GbV0WdGW",
    "firstName": "Vignesh",
    "lastName": "Nayar",
    "speciality": "DENTIST",
    "dob": "2003-01-08",
    "mobile": "1234567890",
    "emailId": "sbaid40@hotmail.com",
    "pan": "ABCD1234",
    "status": "PENDING",
    "approvedBy": null,
    "approverComments": null,
    "registrationDate": "2022-04-05",
    "verificationDate": null,
    "rating": "Not Rated Yet"
  }
]
```

Doctor based on speciality



```
{
  "id": "maFRWciYqwPfDS0",
  "firstName": "Shreyansh",
  "lastName": "Baidh",
  "speciality": "GENERAL_PHYSICIAN",
  "dob": "1995-05-05",
  "mobile": "1234567890",
  "emailId": "sbaid40@gmail.com",
  "pan": "ABCD1234",
  "status": "ACTIVE",
  "approvedBy": "Shreyansh",
  "approverComments": "Good doctor",
  "registrationDate": "2022-04-05",
  "verificationDate": "2022-04-05",
  "rating": "Not Rated Yet"
}
```

Doctor based on ID

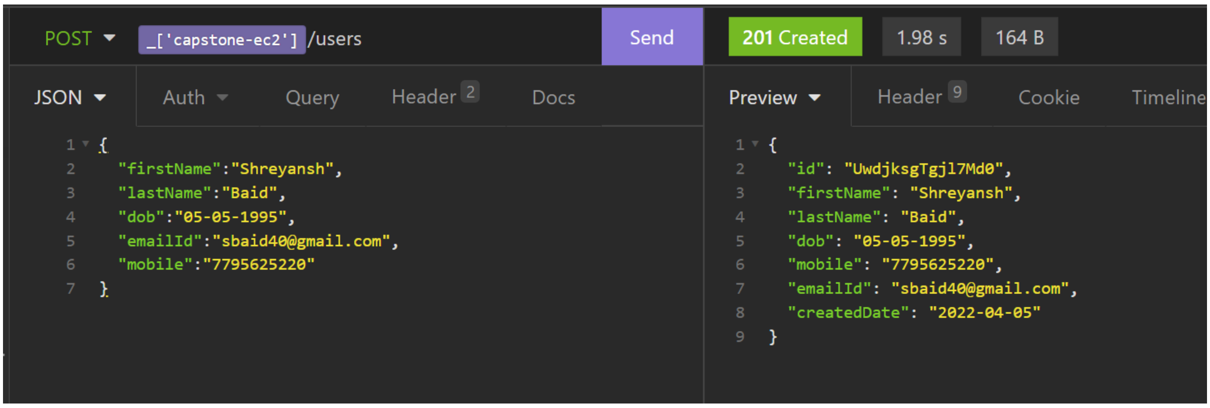


```
{
  "errorCode": "ERR_RESOURCE_001",
  "errorMessage": "Resource Not Found"
}
```

Bad request when bad doctor ID is provided

User Service

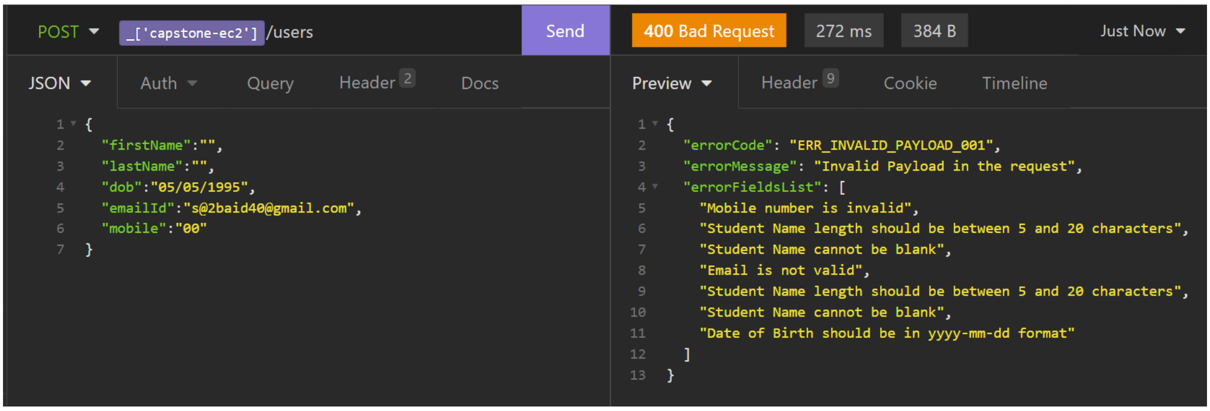
End Point 1



```
{
  "firstName":"Shreyansh",
  "lastName":"Baid",
  "dob":"05-05-1995",
  "emailId":"sbaid40@gmail.com",
  "mobile":"7795625220"
}
```

```
{
  "id": "UwdjksgTgjl7Md0",
  "firstName": "Shreyansh",
  "lastName": "Baid",
  "dob": "05-05-1995",
  "mobile": "7795625220",
  "emailId": "sbaid40@gmail.com",
  "createdDate": "2022-04-05"
}
```

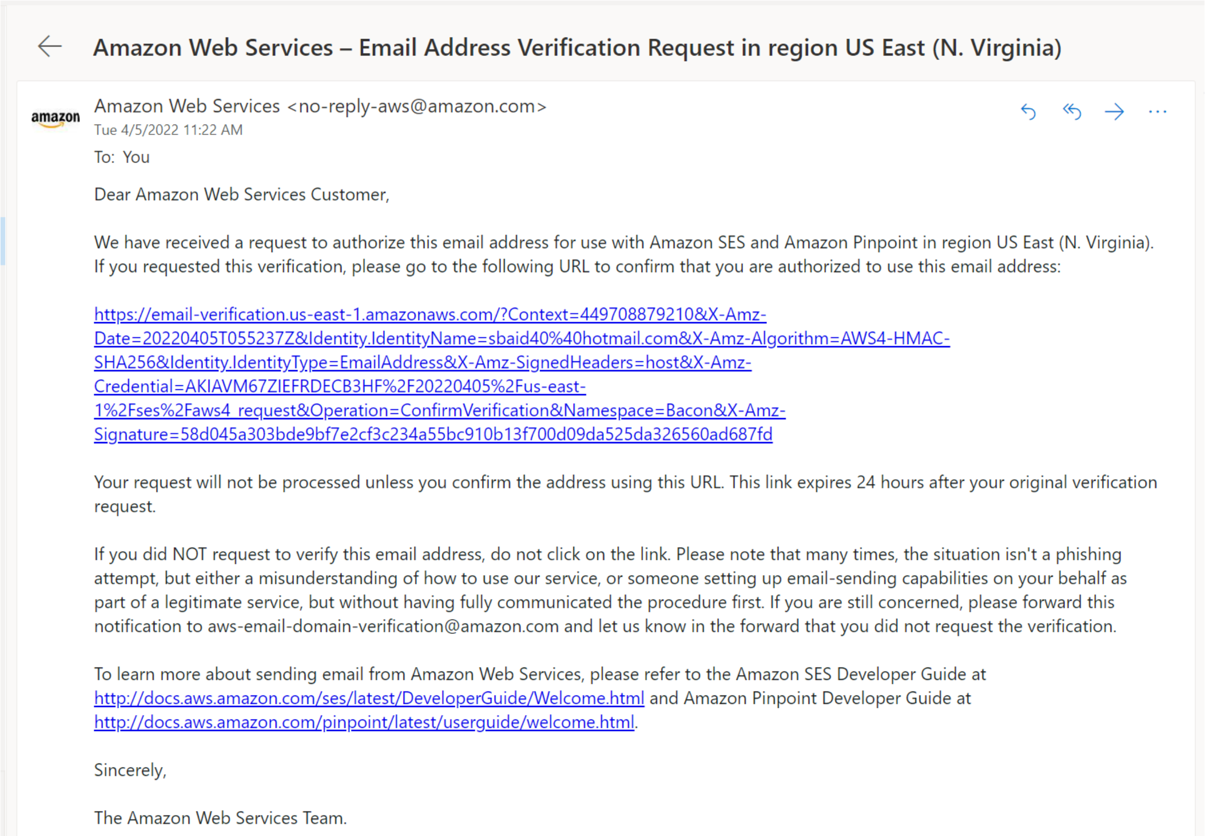
User registered with 201 status



```
{
  "firstName":"",
  "lastName":"",
  "dob":"05/05/1995",
  "emailId":"s@2baid40@gmail.com",
  "mobile":"00"
}
```

```
{
  "errorCode": "ERR_INVALID_PAYLOAD_001",
  "errorMessage": "Invalid Payload in the request",
  "errorFieldsList": [
    "Mobile number is invalid",
    "Student Name length should be between 5 and 20 characters",
    "Student Name cannot be blank",
    "Email is not valid",
    "Student Name length should be between 5 and 20 characters",
    "Student Name cannot be blank",
    "Date of Birth should be in yyyy-mm-dd format"
  ]
}
```

400 Bad request when bad data is provided



Amazon Web Services – Email Address Verification Request in region US East (N. Virginia)

Amazon Web Services <no-reply-aws@amazon.com>
Tue 4/5/2022 11:22 AM
To: You

Dear Amazon Web Services Customer,

We have received a request to authorize this email address for use with Amazon SES and Amazon Pinpoint in region US East (N. Virginia). If you requested this verification, please go to the following URL to confirm that you are authorized to use this email address:

https://email-verification.us-east-1.amazonaws.com/?Context=449708879210&X-Amz-Date=20220405T055237Z&Identity.IdentityName=sbaid40%40hotmail.com&X-Amz-Algorithm=AWS4-HMAC-SHA256&Identity.IdentityType=EmailAddress&X-Amz-SignedHeaders=host&X-Amz-Credential=AKIAVM67ZIEFRDECB3HF%2F20220405%2Fus-east-1%2Fses%2Faws4_request&Operation=ConfirmVerification&Namespace=Bacon&X-Amz-Signature=58d045a303bde9bf7e2cf3c234a55bc910b13f700d09da525da326560ad687fd

Your request will not be processed unless you confirm the address using this URL. This link expires 24 hours after your original verification request.

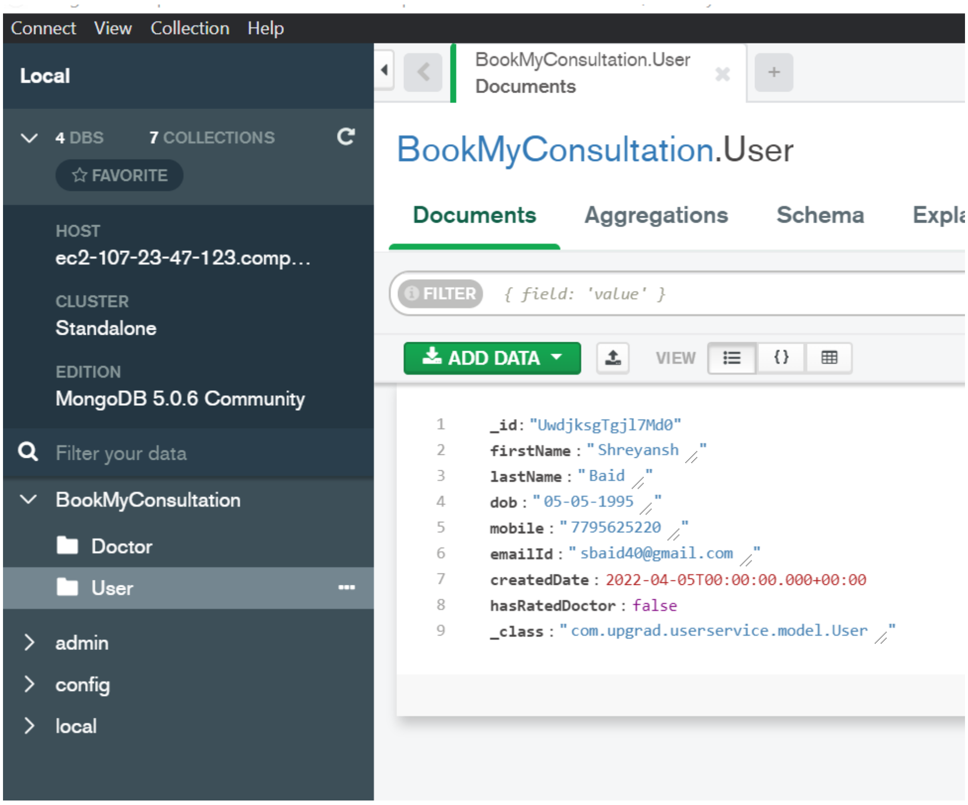
If you did NOT request to verify this email address, do not click on the link. Please note that many times, the situation isn't a phishing attempt, but either a misunderstanding of how to use our service, or someone setting up email-sending capabilities on your behalf as part of a legitimate service, but without having fully communicated the procedure first. If you are still concerned, please forward this notification to aws-email-domain-verification@amazon.com and let us know in the forward that you did not request the verification.

To learn more about sending email from Amazon Web Services, please refer to the Amazon SES Developer Guide at http://docs.aws.amazon.com/ses/latest/DeveloperGuide/Welcome.html and Amazon Pinpoint Developer Guide at http://docs.aws.amazon.com/pinpoint/latest/userguide/welcome.html.

Sincerely,

The Amazon Web Services Team.

Verification mail received when user is created successfully



HOST
ec2-107-23-47-123.comp…

CLUSTER
Standalone

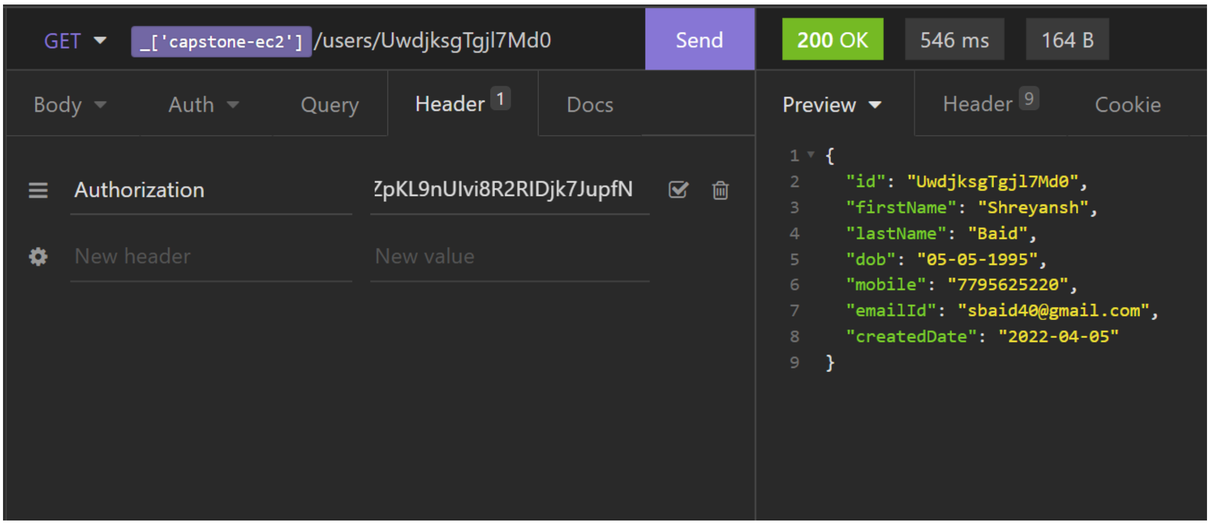
EDITION
MongoDB 5.0.6 Community

BookMyConsultation.User

```
_id: "UwdjksgTgjl7Md0"
firstName : "Shreyansh "
lastName : "Baid "
dob : "05-05-1995 "
mobile : "7795625220 "
emailId : "sbaid40@gmail.com "
createdDate : 2022-04-05T00:00:00.000+00:00
hasRatedDoctor : false
_class : "com.upgrad.userservice.model.User "
```

Data is successfully saved in the database

End Point 2



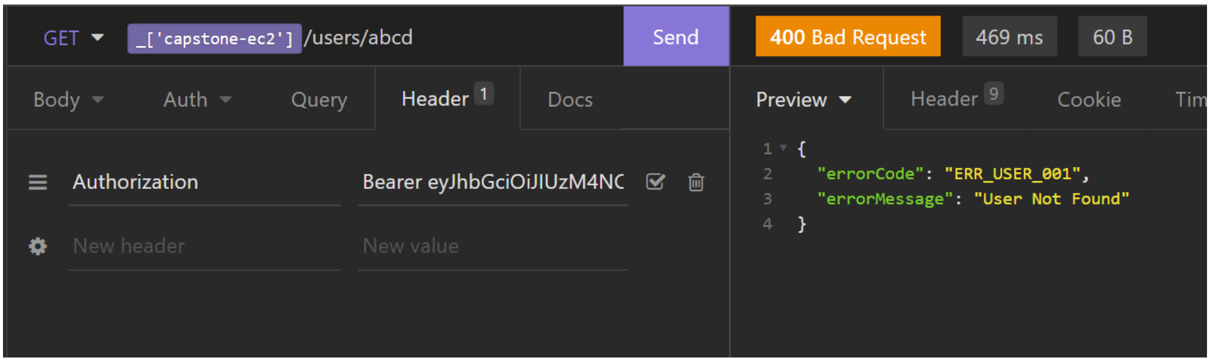
GET _['capstone-ec2'] /users/UwdjksgTgjl7Md0

200 OK 546 ms 164 B

Authorization ZpKL9nUlvi8R2RIDjk7JupfN

```
{
  "id": "UwdjksgTgjl7Md0",
  "firstName": "Shreyansh",
  "lastName": "Baid",
  "dob": "05-05-1995",
  "mobile": "7795625220",
  "emailId": "sbaid40@gmail.com",
  "createdDate": "2022-04-05"
}
```

User data retrieved based on user id



GET _['capstone-ec2'] /users/abcd

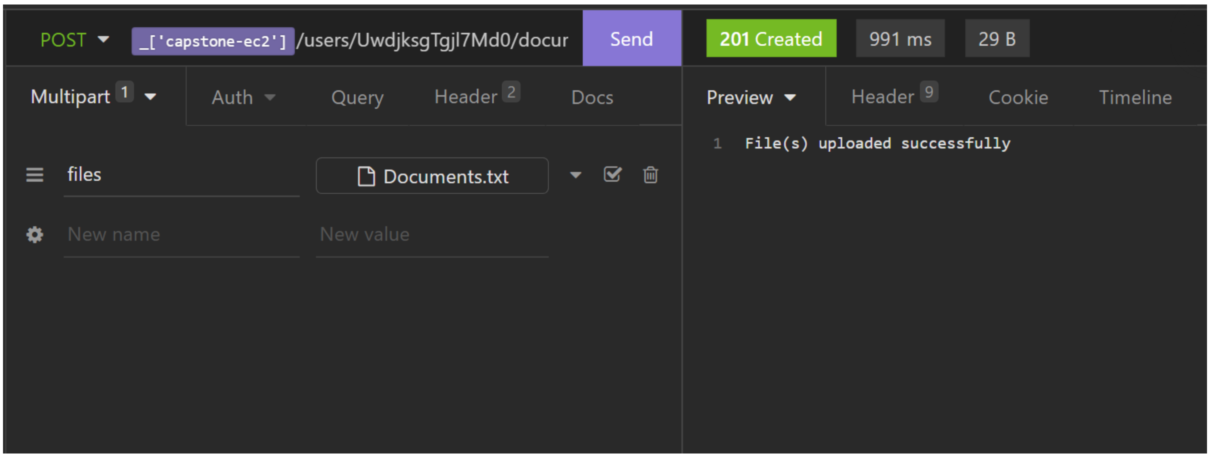
400 Bad Request 469 ms 60 B

Authorization Bearer eyJhbGciOiJIUzM4NC

```
{
  "errorCode": "ERR_USER_001",
  "errorMessage": "User Not Found"
}
```

400 Bad request when unknown user id is passed

End Point 3



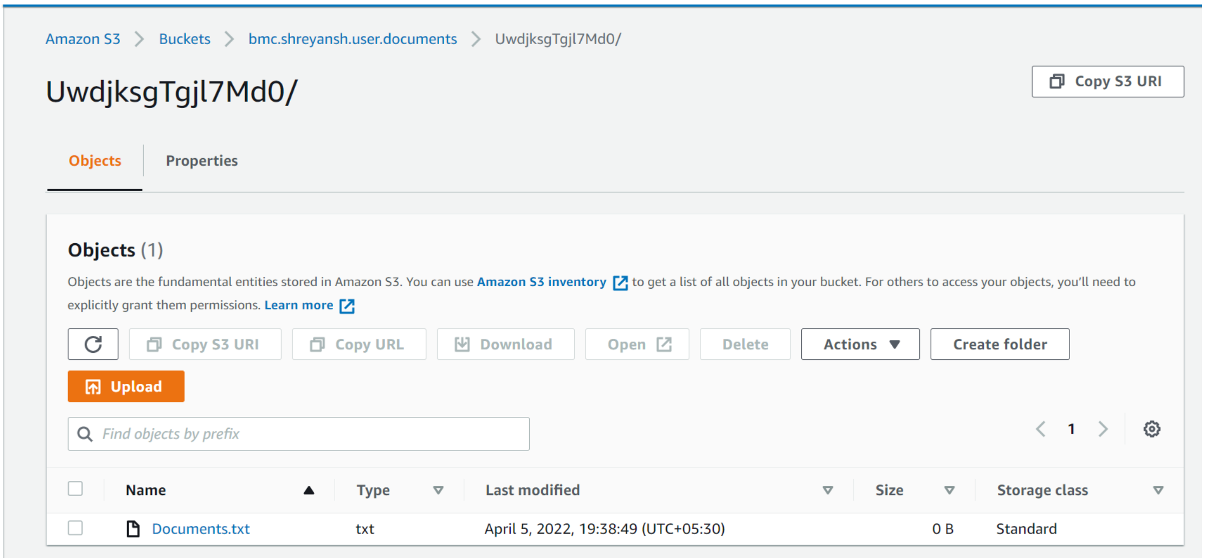
POST _['capstone-ec2'] /users/UwdjksgTgjl7Md0/docur

201 Created 991 ms 29 B

files Documents.txt

```
File(s) uploaded successfully
```

File is uploaded successfully for the user



UwdjksgTgjl7Md0/

Objects (1)

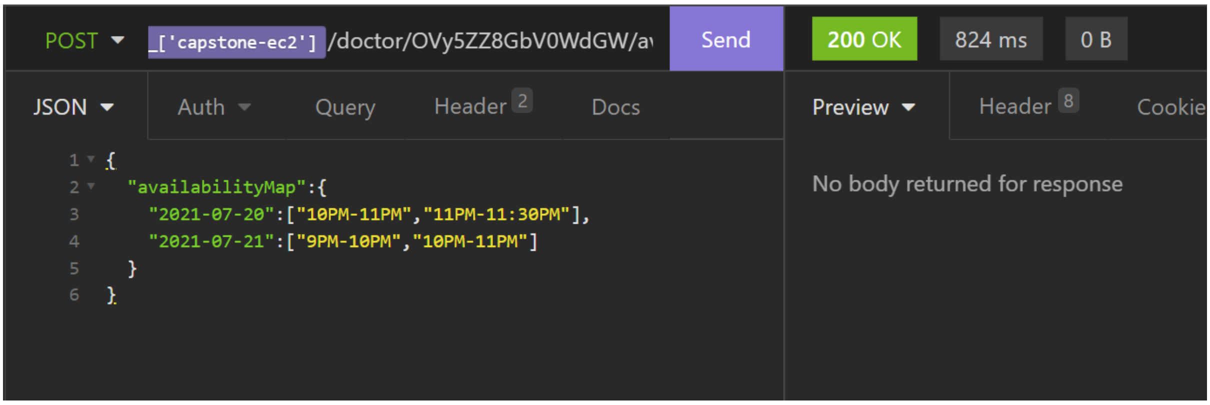
Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

□	Name	Type	Last modified	Size	Storage class
□	Documents.txt	txt	April 5, 2022, 19:38:49 (UTC+05:30)	0 B	Standard

Files successfully uploaded to S3

Appointment Service

End Point 1

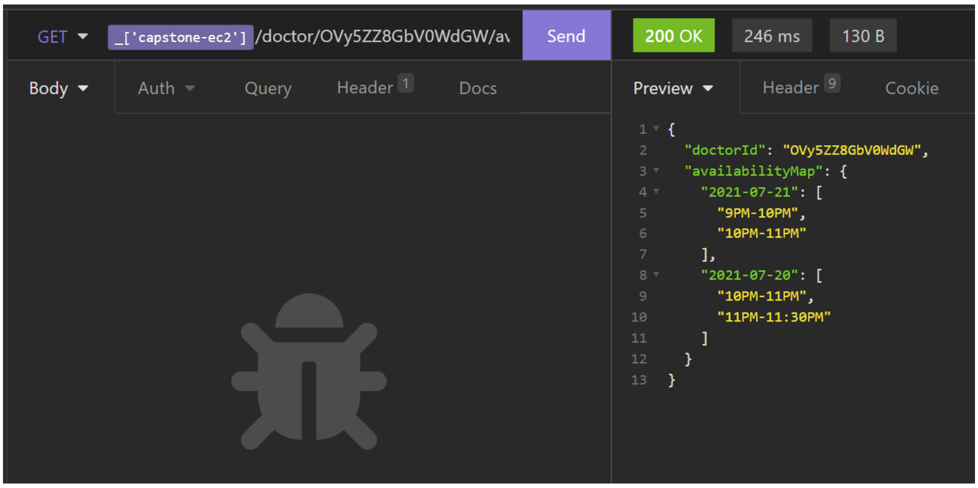


```
{
  "availabilityMap":{
    "2021-07-20":["10PM-11PM","11PM-11:30PM"],
    "2021-07-21":["9PM-10PM","10PM-11PM"]
  }
}
```

No body returned for response

Availability updated for existing doctor

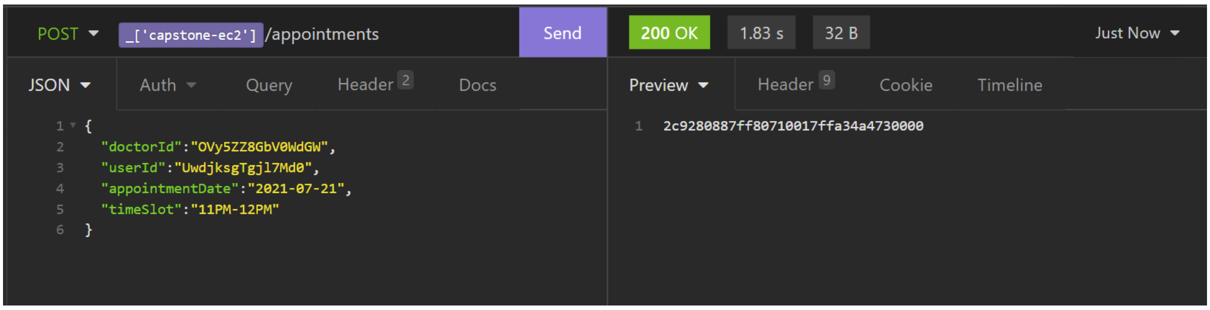
End Point 2



```
{
  "doctorId": "OVy5ZZ8GbV0WdGW",
  "availabilityMap": {
    "2021-07-21": [
      "9PM-10PM",
      "10PM-11PM"
    ],
    "2021-07-20": [
      "10PM-11PM",
      "11PM-11:30PM"
    ]
  }
}
```

Availability map retieved for doctor id

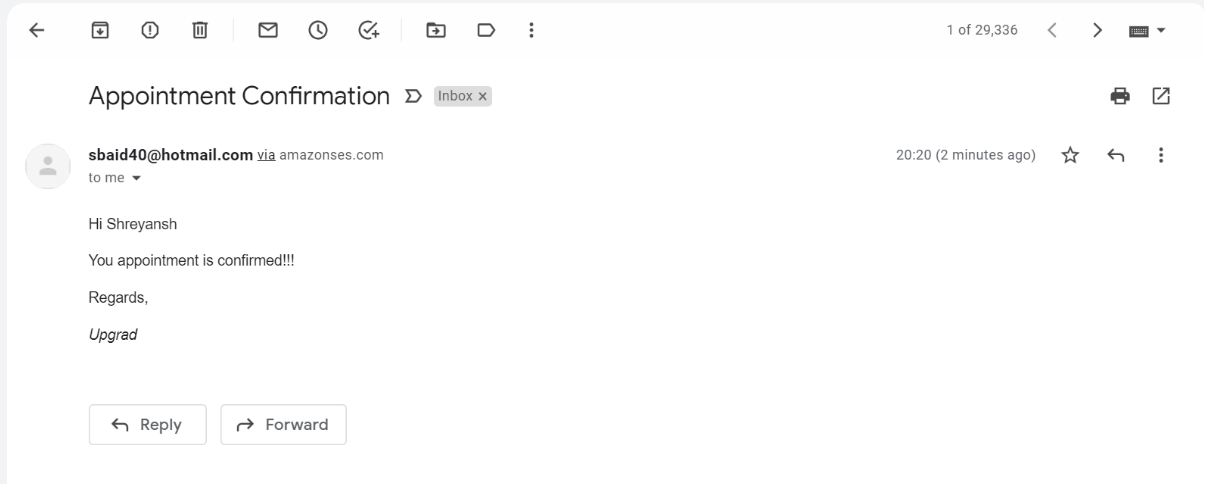
End Point 3



```
{
  "doctorId":"OVy5ZZ8GbV0WdGW",
  "userId":"UwdjksgTgjl7Md0",
  "appointmentDate":"2021-07-21",
  "timeSlot":"11PM-12PM"
}
```

```
2c9280887ff80710017ffa34a4730000
```

Appointment ID generated



Appointment Confirmation

sbaid40@hotmail.com via amazonses.com
to me
20:20 (2 minutes ago)

Hi Shreyansh

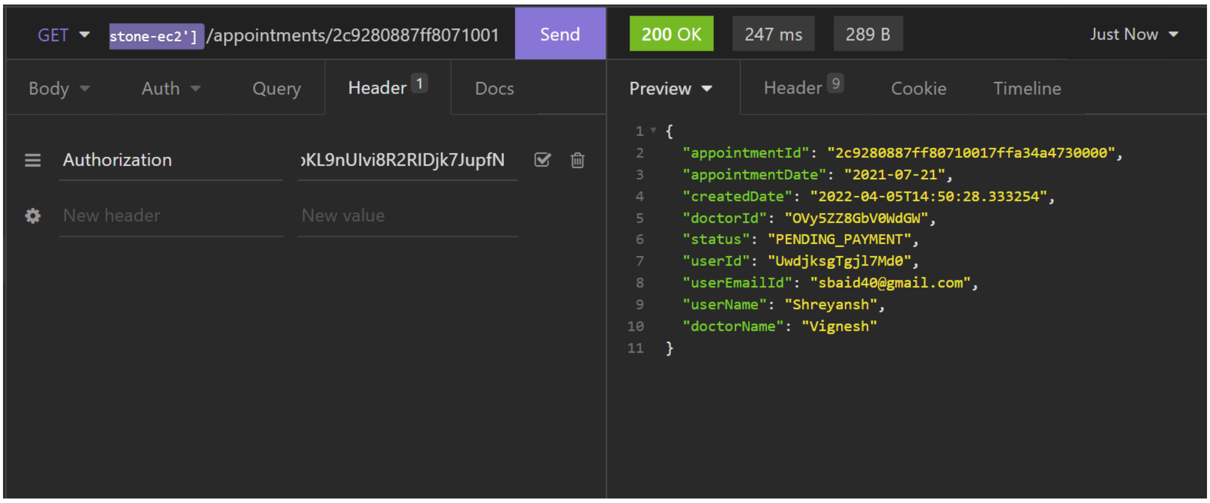
You appointment is confirmed!!!

Regards,

Upgrad

Appointment confirmation email received

End Point 4



GET stone-ec2'] /appointments/2c9280887ff8071001

200 OK 247 ms 289 B

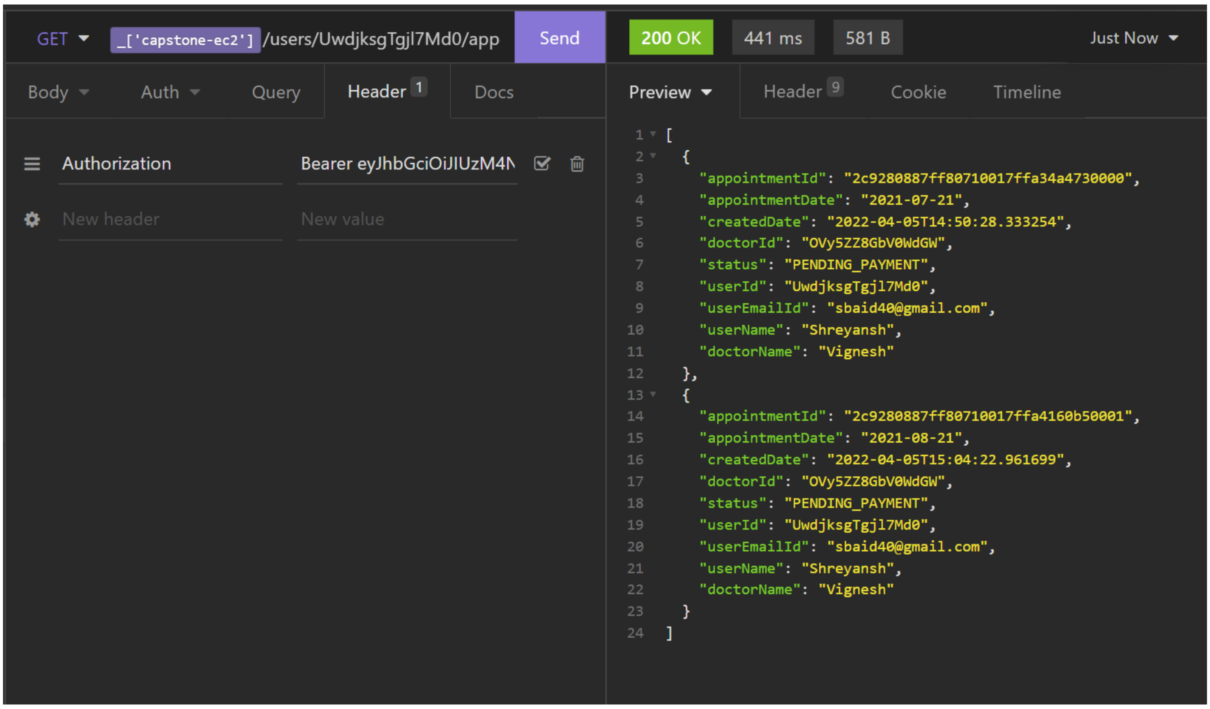
Authorization ›KL9nUlvi8R2RIDjk7JupfN

New header New value

```
{
  "appointmentId": "2c9280887ff80710017ffa34a4730000",
  "appointmentDate": "2021-07-21",
  "createdDate": "2022-04-05T14:50:28.333254",
  "doctorId": "OVy5ZZ8GbV0WdGW",
  "status": "PENDING_PAYMENT",
  "userId": "UwdjksgTgjl7Md0",
  "userEmailId": "sbaid40@gmail.com",
  "userName": "Shreyansh",
  "doctorName": "Vignesh"
}
```

Appointment retrieved using appointment id with payment status pending

End Point 5



GET _['capstone-ec2'] /users/UwdjksgTgjl7Md0/app

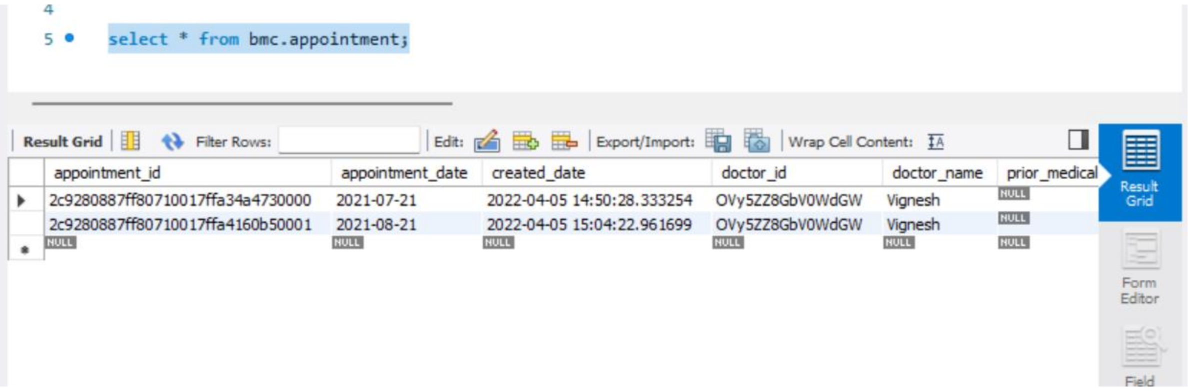
200 OK 441 ms 581 B

Authorization Bearer eyJhbGciOiJIUzM4N

New header New value

```
[
  {
    "appointmentId": "2c9280887ff80710017ffa34a4730000",
    "appointmentDate": "2021-07-21",
    "createdDate": "2022-04-05T14:50:28.333254",
    "doctorId": "OVy5ZZ8GbV0WdGW",
    "status": "PENDING_PAYMENT",
    "userId": "UwdjksgTgjl7Md0",
    "userEmailId": "sbaid40@gmail.com",
    "userName": "Shreyansh",
    "doctorName": "Vignesh"
  },
  {
    "appointmentId": "2c9280887ff80710017ffa4160b50001",
    "appointmentDate": "2021-08-21",
    "createdDate": "2022-04-05T15:04:22.961699",
    "doctorId": "OVy5ZZ8GbV0WdGW",
    "status": "PENDING_PAYMENT",
    "userId": "UwdjksgTgjl7Md0",
    "userEmailId": "sbaid40@gmail.com",
    "userName": "Shreyansh",
    "doctorName": "Vignesh"
  }
]
```

All the appointment information retrieved for the particular user id

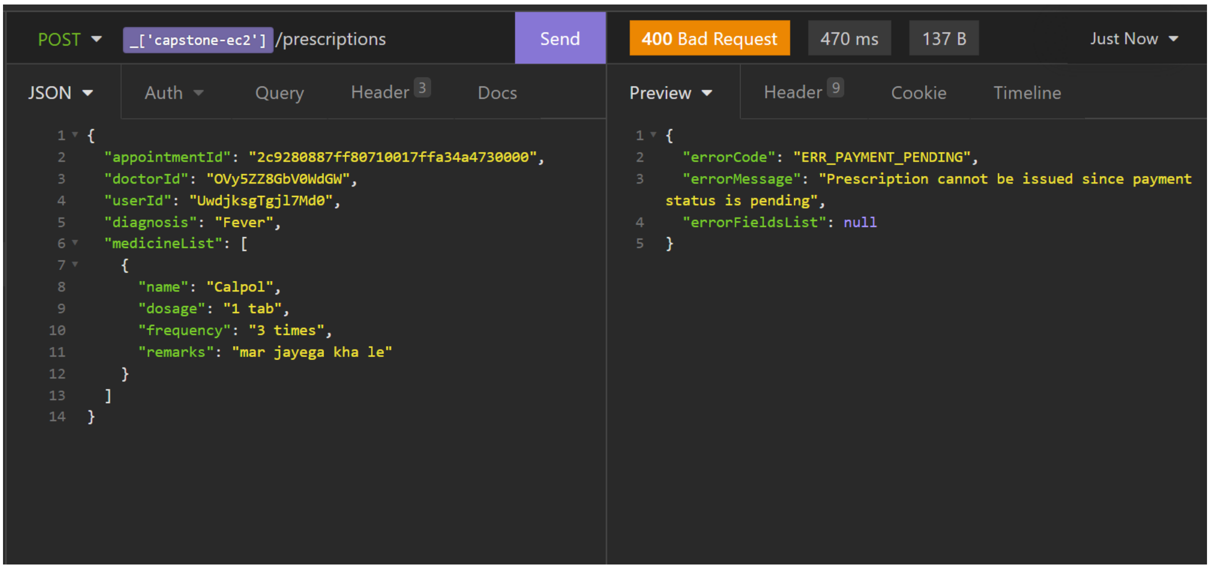


```sql
select * from bmc.appointment;
```

appointment_id	appointment_date	created_date	doctor_id	doctor_name	prior_medical
2c9280887ff80710017ffa34a4730000	2021-07-21	2022-04-05 14:50:28.333254	OVy5ZZ8GbV0WdGW	Vignesh	NULL
2c9280887ff80710017ffa4160b50001	2021-08-21	2022-04-05 15:04:22.961699	OVy5ZZ8GbV0WdGW	Vignesh	NULL
NULL	NULL	NULL	NULL	NULL	NULL

Appointment data is saved in the database

End Point 6



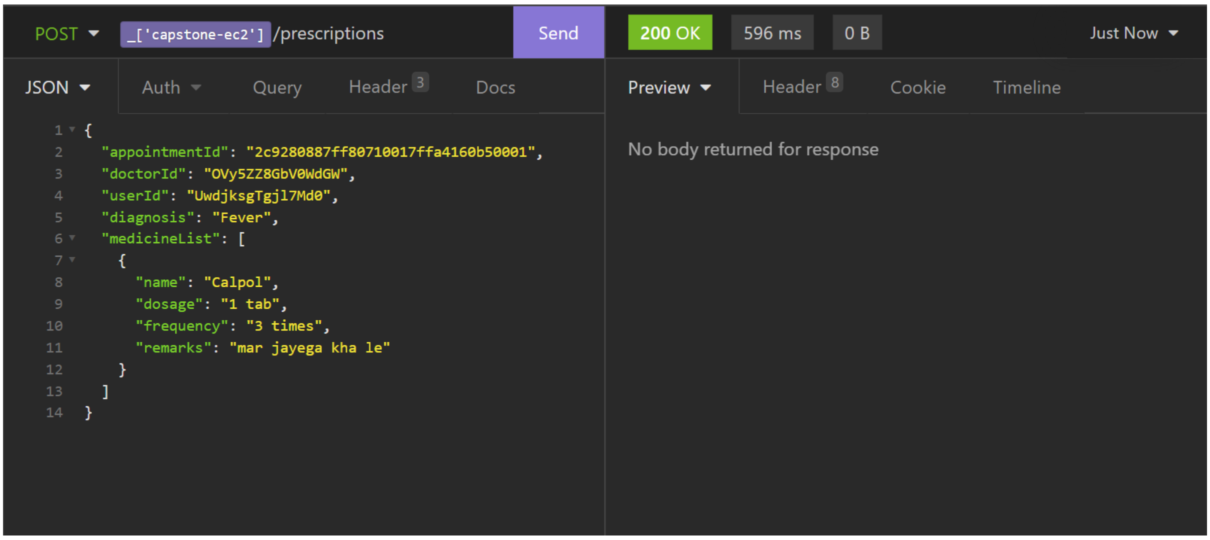
_['capstone-ec2'] /prescriptions

400 Bad Request 470 ms 137 B

```json
{
  "appointmentId": "2c9280887ff80710017ffa34a4730000",
  "doctorId": "OVy5ZZ8GbV0WdGW",
  "userId": "UwdjksgTgjl7Md0",
  "diagnosis": "Fever",
  "medicineList": [
    {
      "name": "Calpol",
      "dosage": "1 tab",
      "frequency": "3 times",
      "remarks": "mar jayega kha le"
    }
  ]
}
```

```json
{
  "errorCode": "ERR_PAYMENT_PENDING",
  "errorMessage": "Prescription cannot be issued since payment status is pending",
  "errorFieldsList": null
}
```

Prescription created for an appointment with pending payment status



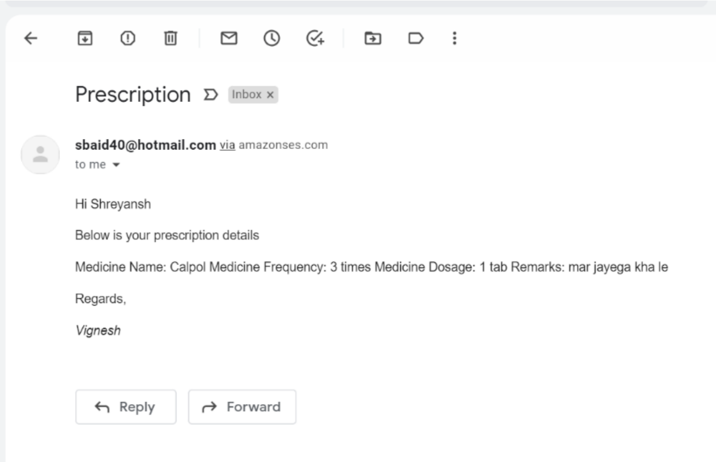
_['capstone-ec2'] /prescriptions

200 OK 596 ms 0 B

```json
{
  "appointmentId": "2c9280887ff80710017ffa4160b50001",
  "doctorId": "OVy5ZZ8GbV0WdGW",
  "userId": "UwdjksgTgjl7Md0",
  "diagnosis": "Fever",
  "medicineList": [
    {
      "name": "Calpol",
      "dosage": "1 tab",
      "frequency": "3 times",
      "remarks": "mar jayega kha le"
    }
  ]
}
```

No body returned for response

Prescription created for appointment status with Confirmed



sbaid40@hotmail.com via amazonses.com
to me

Hi Shreyansh

Below is your prescription details

Medicine Name: Calpol Medicine Frequency: 3 times Medicine Dosage: 1 tab Remarks: mar jayega kha le

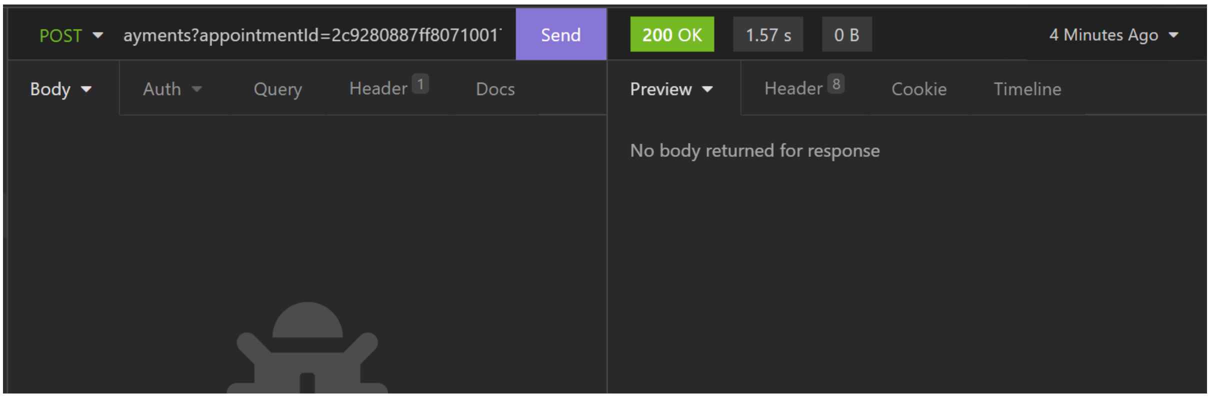
Regards,

Vignesh

Prescription sent to the user with confirmed payment status

Payment Service

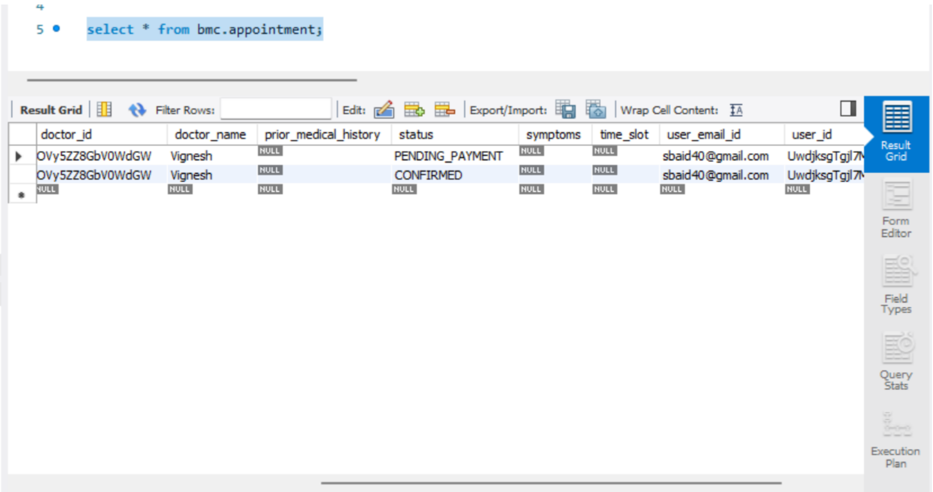
End Point 1



```
ayments?appointmentId=2c9280887ff8071001
```

No body returned for response

Payment done for the provided appointment id



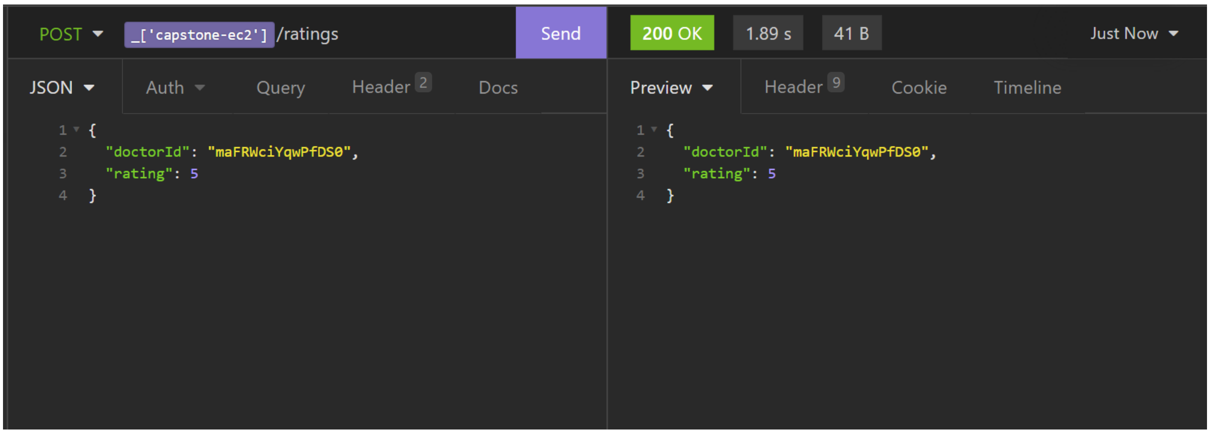
```
select * from bmc.appointment;
```

doctor_id	doctor_name	prior_medical_history	status	symptoms	time_slot	user_email_id	user_id
OVy5ZZ8GbV0WdGW	Vignesh	NULL	PENDING_PAYMENT	NULL	NULL	sbaid40@gmail.com	UwdjksgTgjl7
OVy5ZZ8GbV0WdGW	Vignesh	NULL	CONFIRMED	NULL	NULL	sbaid40@gmail.com	UwdjksgTgjl7
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Payment status is updated in the database

Rating Service

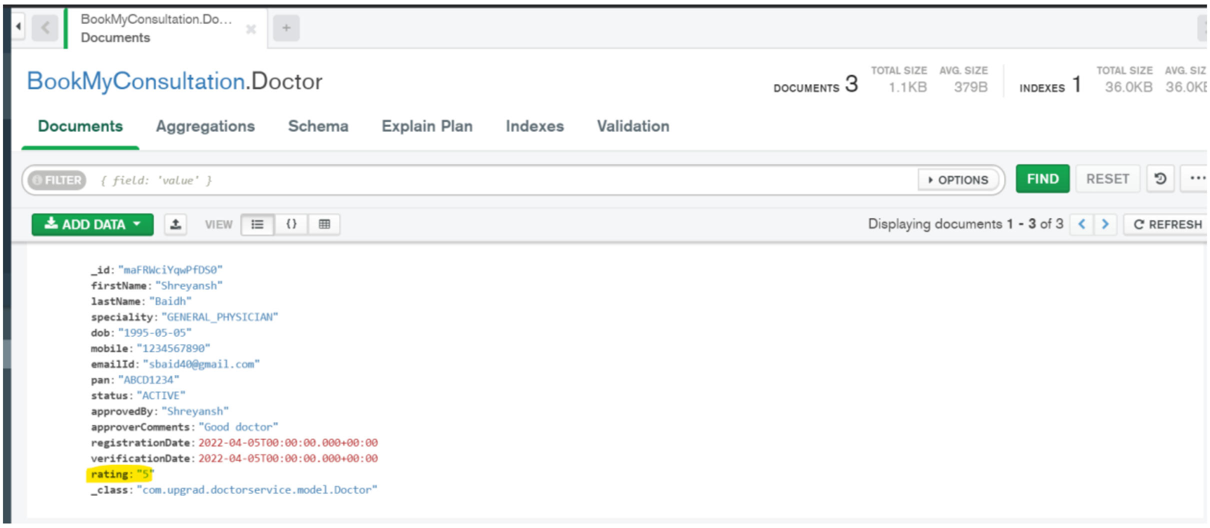
End Point 1



```
{
  "doctorId": "maFRWciYqwPfDS0",
  "rating": 5
}
```

```
{
  "doctorId": "maFRWciYqwPfDS0",
  "rating": 5
}
```

Rating done for the doctor id passed



```
_id: "maFRWciYqwPfDS0"
firstName: "Shreyansh"
lastName: "Baidh"
speciality: "GENERAL_PHYSICIAN"
dob: "1995-05-05"
mobile: "1234567890"
emailId: "sbaid40@gmail.com"
pan: "ABCD1234"
status: "ACTIVE"
approvedBy: "Shreyansh"
approverComments: "Good doctor"
registrationDate: 2022-04-05T00:00:00.000+00:00
verificationDate: 2022-04-05T00:00:00.000+00:00
rating: "5"
_class: "com.upgrad.doctorservice.model.Doctor"
```

Rating updated in the database listening to the kafka topic RATING

Notification Service

All the verification email for user and doctor, doctor approval ,doctor rejection, appointment and prescription emails attached above are sent by the notification service that is listening to the respective microservices.

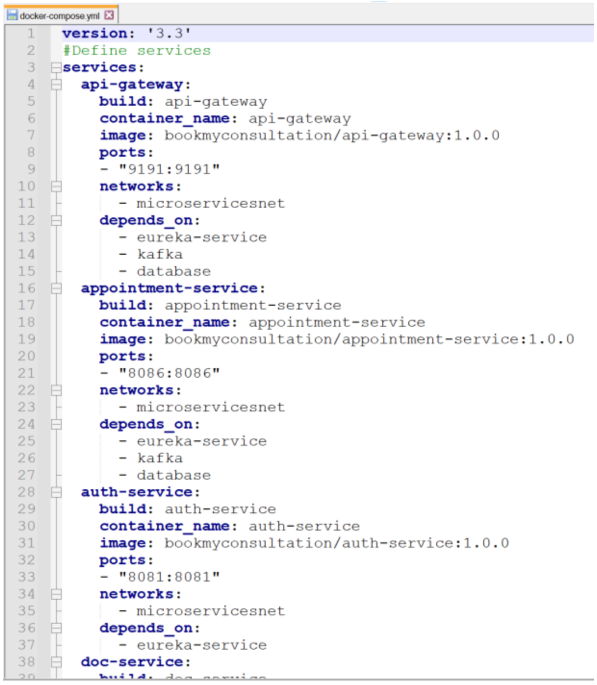
API Gateway Service

All the services can be access via API Gateway on 9191 port.

Auth Service

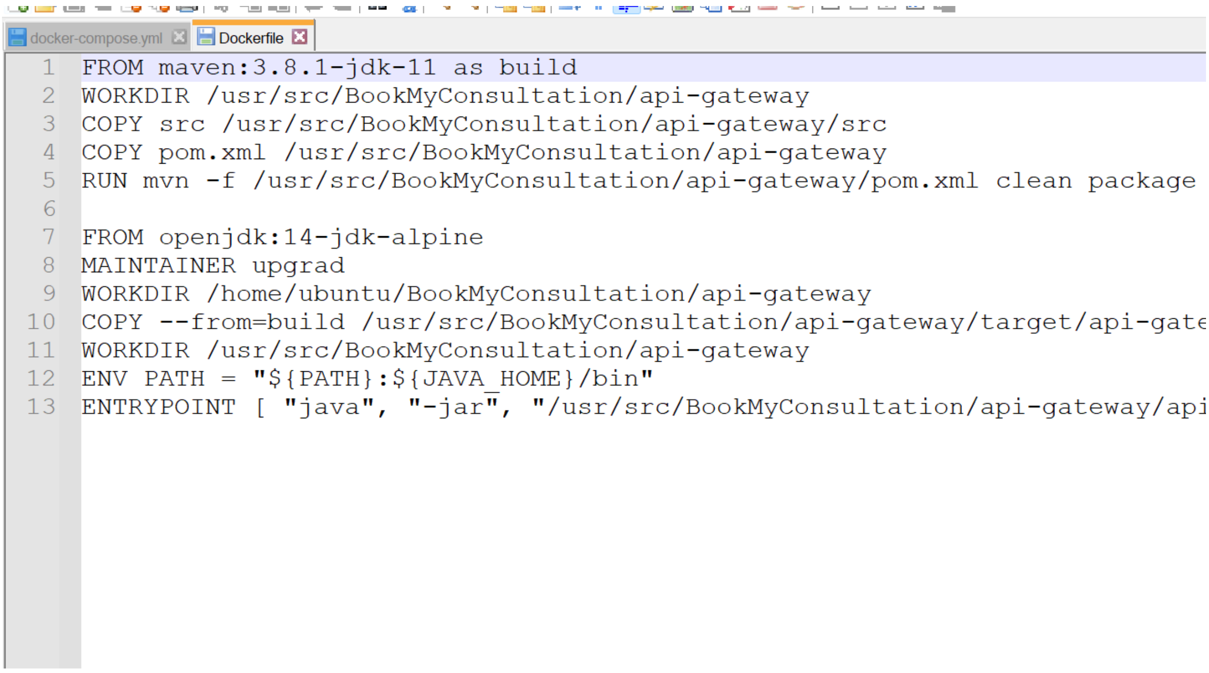
This micro-service can be used to get the token on /oauth/token URL

Docker



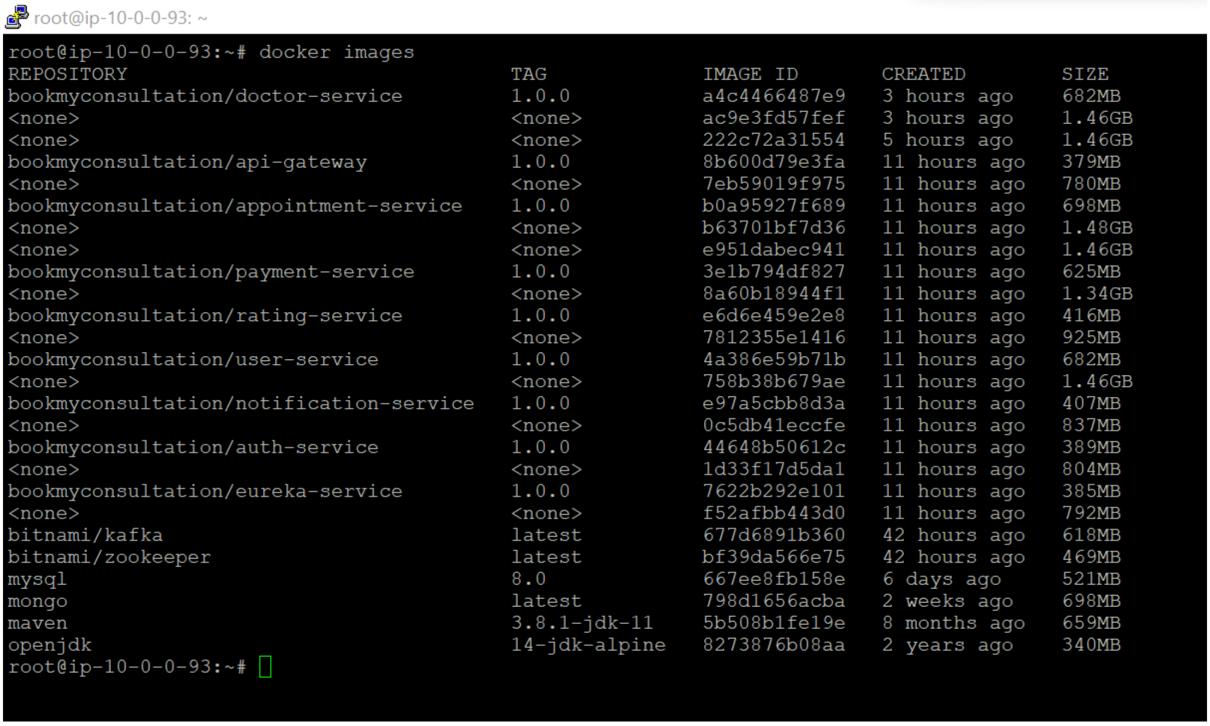
```
version: '3.3'
#Define services
services:
  api-gateway:
    build: api-gateway
    container_name: api-gateway
    image: bookmyconsultation/api-gateway:1.0.0
    ports:
    - "9191:9191"
    networks:
      - microservicesnet
    depends_on:
      - eureka-service
      - kafka
      - database
  appointment-service:
    build: appointment-service
    container_name: appointment-service
    image: bookmyconsultation/appointment-service:1.0.0
    ports:
    - "8086:8086"
    networks:
      - microservicesnet
    depends_on:
      - eureka-service
      - kafka
      - database
  auth-service:
    build: auth-service
    container_name: auth-service
    image: bookmyconsultation/auth-service:1.0.0
    ports:
    - "8081:8081"
    networks:
      - microservicesnet
    depends_on:
      - eureka-service
  doc-service:
    build: doc-service
```

Snapshot of docker compose file



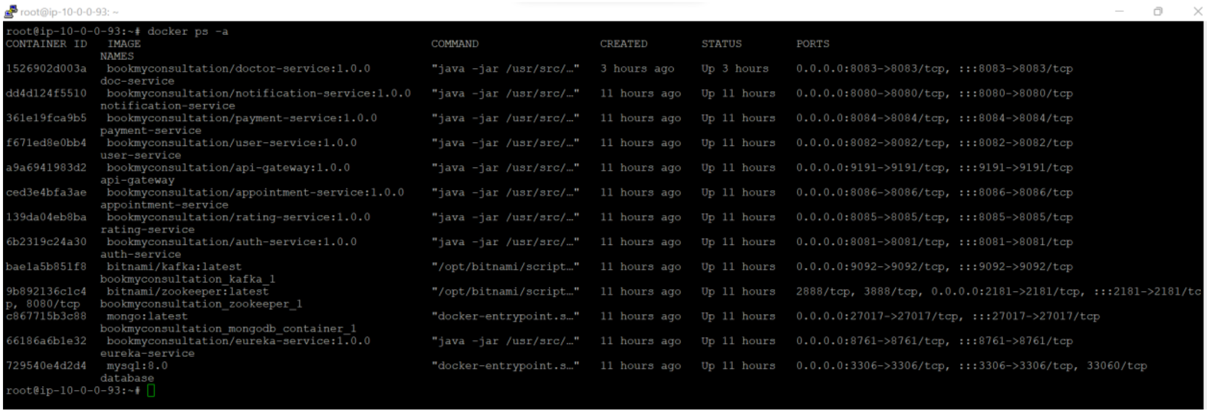
```
FROM maven:3.8.1-jdk-11 as build
WORKDIR /usr/src/BookMyConsultation/api-gateway
COPY src /usr/src/BookMyConsultation/api-gateway/src
COPY pom.xml /usr/src/BookMyConsultation/api-gateway
RUN mvn -f /usr/src/BookMyConsultation/api-gateway/pom.xml clean package

FROM openjdk:14-jdk-alpine
MAINTAINER upgrad
WORKDIR /home/ubuntu/BookMyConsultation/api-gateway
COPY --from=build /usr/src/BookMyConsultation/api-gateway/target/api-gate
WORKDIR /usr/src/BookMyConsultation/api-gateway
ENV PATH = "${PATH}:${JAVA_HOME}/bin"
ENTRYPOINT [ "java", "-jar", "/usr/src/BookMyConsultation/api-gateway/api
```

Snapshot of the multi-stage Docker file for API-Gateway



```
root@ip-10-0-0-93:~# docker images
REPOSITORY                                TAG             IMAGE ID       CREATED        SIZE
bookmyconsultation/doctor-service         1.0.0           a4c4466487e9   3 hours ago    682MB
<none>                                    <none>          ac9e3fd57fef   3 hours ago    1.46GB
<none>                                    <none>          222c72a31554   5 hours ago    1.46GB
bookmyconsultation/api-gateway            1.0.0           8b600d79e3fa   11 hours ago   379MB
<none>                                    <none>          7eb59019f975   11 hours ago   780MB
bookmyconsultation/appointment-service    1.0.0           b0a95927f689   11 hours ago   698MB
<none>                                    <none>          b63701bf7d36   11 hours ago   1.48GB
<none>                                    <none>          e951dabec941   11 hours ago   1.46GB
bookmyconsultation/payment-service        1.0.0           3e1b794df827   11 hours ago   625MB
<none>                                    <none>          8a60b18944f1   11 hours ago   1.34GB
bookmyconsultation/rating-service         1.0.0           e6d6e459e2e8   11 hours ago   416MB
<none>                                    <none>          7812355e1416   11 hours ago   925MB
bookmyconsultation/user-service           1.0.0           4a386e59b71b   11 hours ago   682MB
<none>                                    <none>          758b38b679ae   11 hours ago   1.46GB
bookmyconsultation/notification-service   1.0.0           e97a5cbb8d3a   11 hours ago   407MB
<none>                                    <none>          0c5db41eccfe   11 hours ago   837MB
bookmyconsultation/auth-service           1.0.0           44648b50612c   11 hours ago   389MB
<none>                                    <none>          1d33f17d5da1   11 hours ago   804MB
bookmyconsultation/eureka-service         1.0.0           7622b292e101   11 hours ago   385MB
<none>                                    <none>          f52afbb443d0   11 hours ago   792MB
bitnami/kafka                             latest          677d6891b360   42 hours ago   618MB
bitnami/zookeeper                         latest          bf39da566e75   42 hours ago   469MB
mysql                                     8.0             667ee8fb158e   6 days ago     521MB
mongo                                     latest          798d1656acba   2 weeks ago    698MB
maven                                     3.8.1-jdk-11    5b508b1fe19e   8 months ago   659MB
openjdk                                   14-jdk-alpine   8273876b08aa   2 years ago    340MB
root@ip-10-0-0-93:~# 
```

Screenshot of the docker images created on EC2



root@ip-10-0-0-93: ~

```
root@ip-10-0-0-93:~# docker ps -a
CONTAINER ID   IMAGE                                          COMMAND                  CREATED         STATUS          PORTS
              NAMES
1526902d003a   bookmyconsultation/doctor-service:1.0.0        "java -jar /usr/src/…"   3 hours ago     Up 3 hours      0.0.0.0:8083->8083/tcp, :::8083->8083/tcp
              doc-service
dd4d124f5510   bookmyconsultation/notification-service:1.0.0  "java -jar /usr/src/…"   11 hours ago    Up 11 hours     0.0.0.0:8080->8080/tcp, :::8080->8080/tcp
              notification-service
361e19fca9b5   bookmyconsultation/payment-service:1.0.0       "java -jar /usr/src/…"   11 hours ago    Up 11 hours     0.0.0.0:8084->8084/tcp, :::8084->8084/tcp
              payment-service
f671ed8e0bb4   bookmyconsultation/user-service:1.0.0          "java -jar /usr/src/…"   11 hours ago    Up 11 hours     0.0.0.0:8082->8082/tcp, :::8082->8082/tcp
              user-service
a9a6941983d2   bookmyconsultation/api-gateway:1.0.0           "java -jar /usr/src/…"   11 hours ago    Up 11 hours     0.0.0.0:9191->9191/tcp, :::9191->9191/tcp
              api-gateway
ced3e4bfa3ae   bookmyconsultation/appointment-service:1.0.0   "java -jar /usr/src/…"   11 hours ago    Up 11 hours     0.0.0.0:8086->8086/tcp, :::8086->8086/tcp
              appointment-service
139da04eb8ba   bookmyconsultation/rating-service:1.0.0        "java -jar /usr/src/…"   11 hours ago    Up 11 hours     0.0.0.0:8085->8085/tcp, :::8085->8085/tcp
              rating-service
6b2319c24a30   bookmyconsultation/auth-service:1.0.0          "java -jar /usr/src/…"   11 hours ago    Up 11 hours     0.0.0.0:8081->8081/tcp, :::8081->8081/tcp
              auth-service
bae1a5b851f8   bitnami/kafka:latest                           "/opt/bitnami/script…"   11 hours ago    Up 11 hours     0.0.0.0:9092->9092/tcp, :::9092->9092/tcp
              bookmyconsultation_kafka_1
9b892136c1c4   bitnami/zookeeper:latest                       "/opt/bitnami/script…"   11 hours ago    Up 11 hours     2888/tcp, 3888/tcp, 0.0.0.0:2181->2181/tcp, :::2181->2181/tc
p, 8080/tcp   bookmyconsultation_zookeeper_1
c867715b3c88   mongo:latest                                   "docker-entrypoint.s…"   11 hours ago    Up 11 hours     0.0.0.0:27017->27017/tcp, :::27017->27017/tcp
              bookmyconsultation_mongodb_container_1
66186a6b1e32   bookmyconsultation/eureka-service:1.0.0        "java -jar /usr/src/…"   11 hours ago    Up 11 hours     0.0.0.0:8761->8761/tcp, :::8761->8761/tcp
              eureka-service
729540e4d2d4   mysql:8.0                                      "docker-entrypoint.s…"   11 hours ago    Up 11 hours     0.0.0.0:3306->3306/tcp, :::3306->3306/tcp, 33060/tcp
              database
root@ip-10-0-0-93:~#
```

Screenshot of all the docker containers created