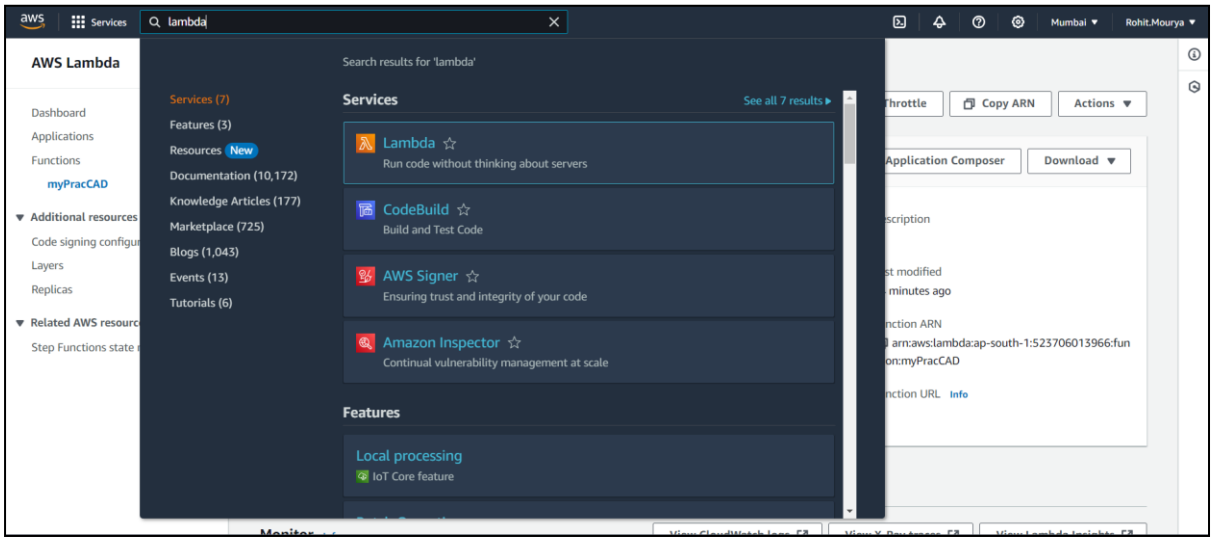
# Serverless EMI Calculator using AWS Lambda and API Gateway

**Steps to be followed:-**

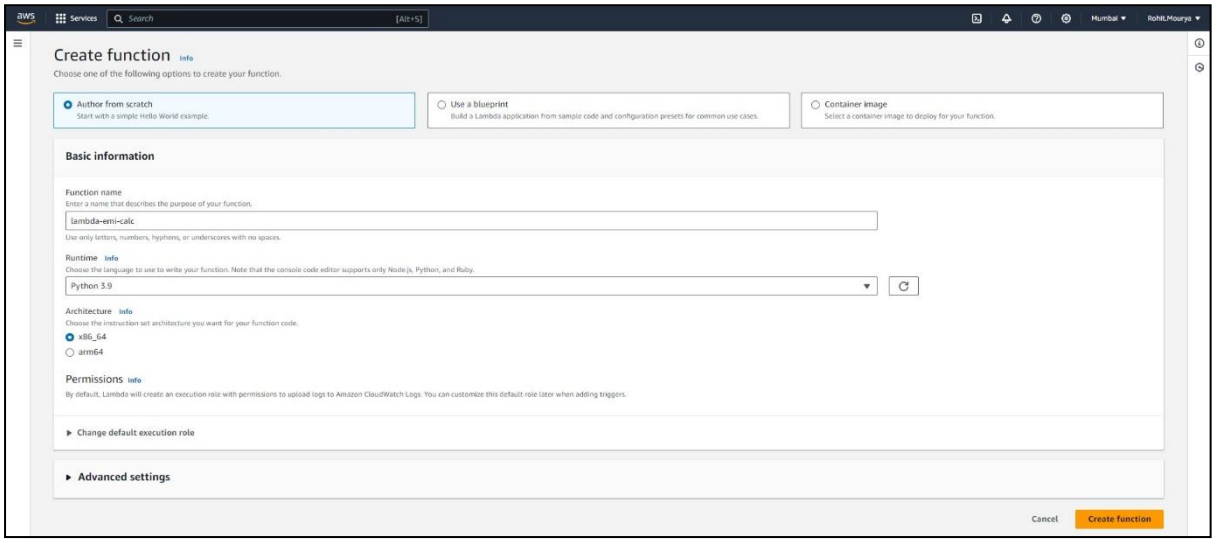
**Step: 01**

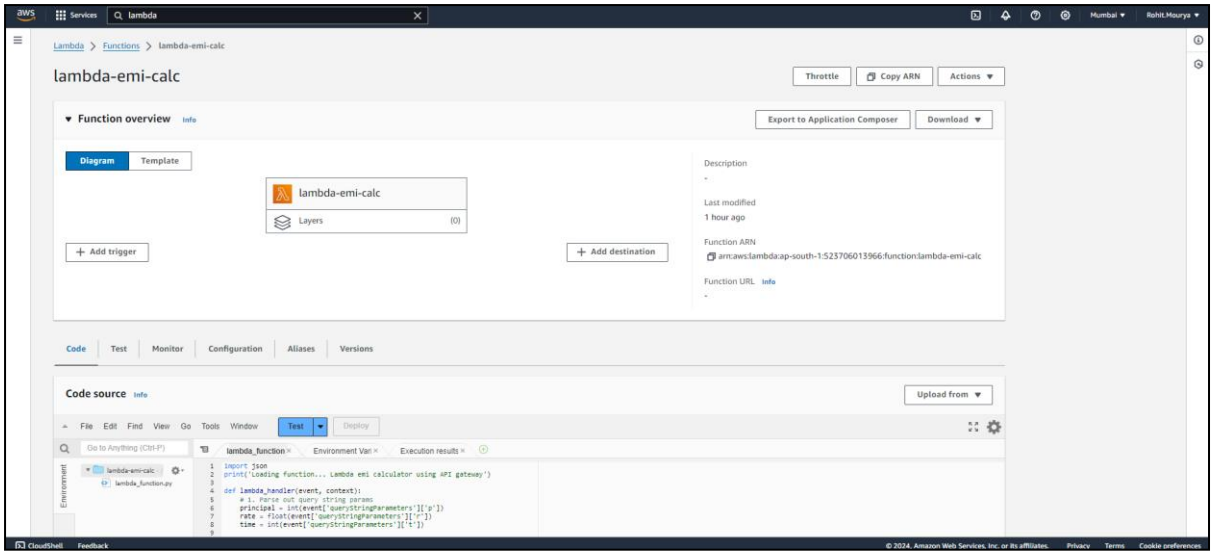
- Login into the AWS console.
- Search for lambda on the service bar.




Then, create a lambda function of name **lambda-emi-calc**.

And select the Runtime of function as **Python 3.9**, then click on create function.






**Step: 02**

Next step is to clear existing code and write emi calculator python code as below :

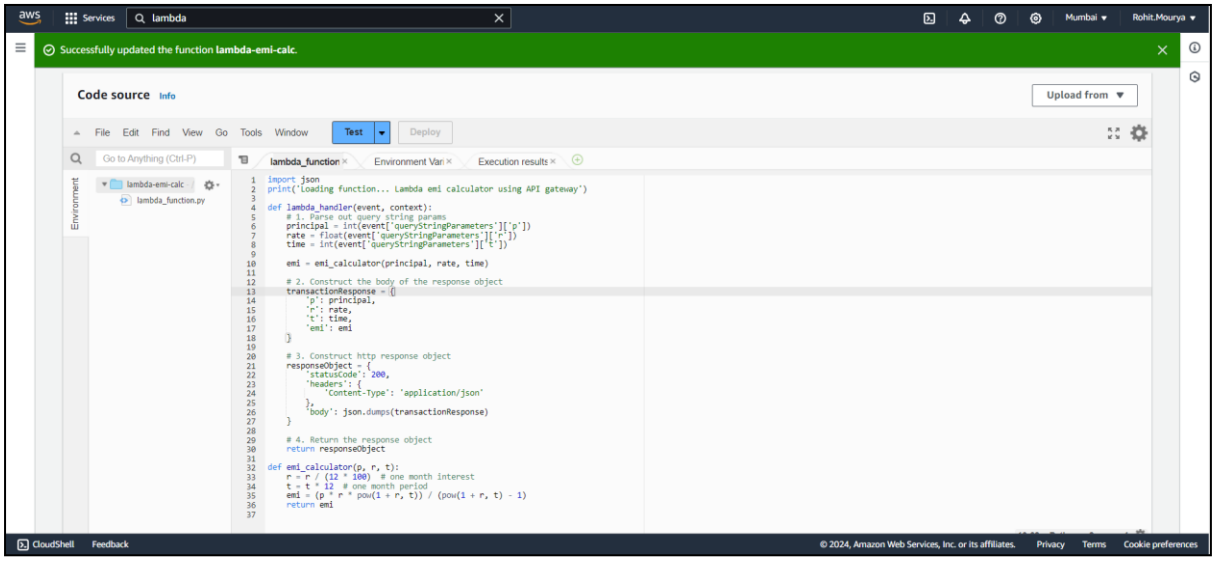
Code:

```
import json
print('Loading function... Lambda emi calculator using API gateway')


def lambda_handler(event, context):
    # 1. Parse out query string params
    principal = int(event['queryStringParameters']['p'])
    rate = float(event['queryStringParameters']['r'])
    time = int(event['queryStringParameters']['t'])
    emi = emi_calculator(principal, rate, time)
    # 2. Construct the body of the response object
    transactionResponse = {
        'p': principal,
        'r': rate,
        't': time,
        'emi': emi
    }
```

```
    # 3. Construct http response object
    responseObject = {
        'statusCode': 200,
        'headers': {
            'Content-Type': 'application/json'
        },
        'body': json.dumps(transactionResponse)
    }
    # 4. Return the response object
    return responseObject
def emi_calculator(p, r, t):
    r = r / (12 * 100)  # one month interest
    t = t * 12  # one month period
    emi = (p * r * pow(1 + r, t)) / (pow(1 + r, t) - 1)
    return emi
```

Deploy the lambda function



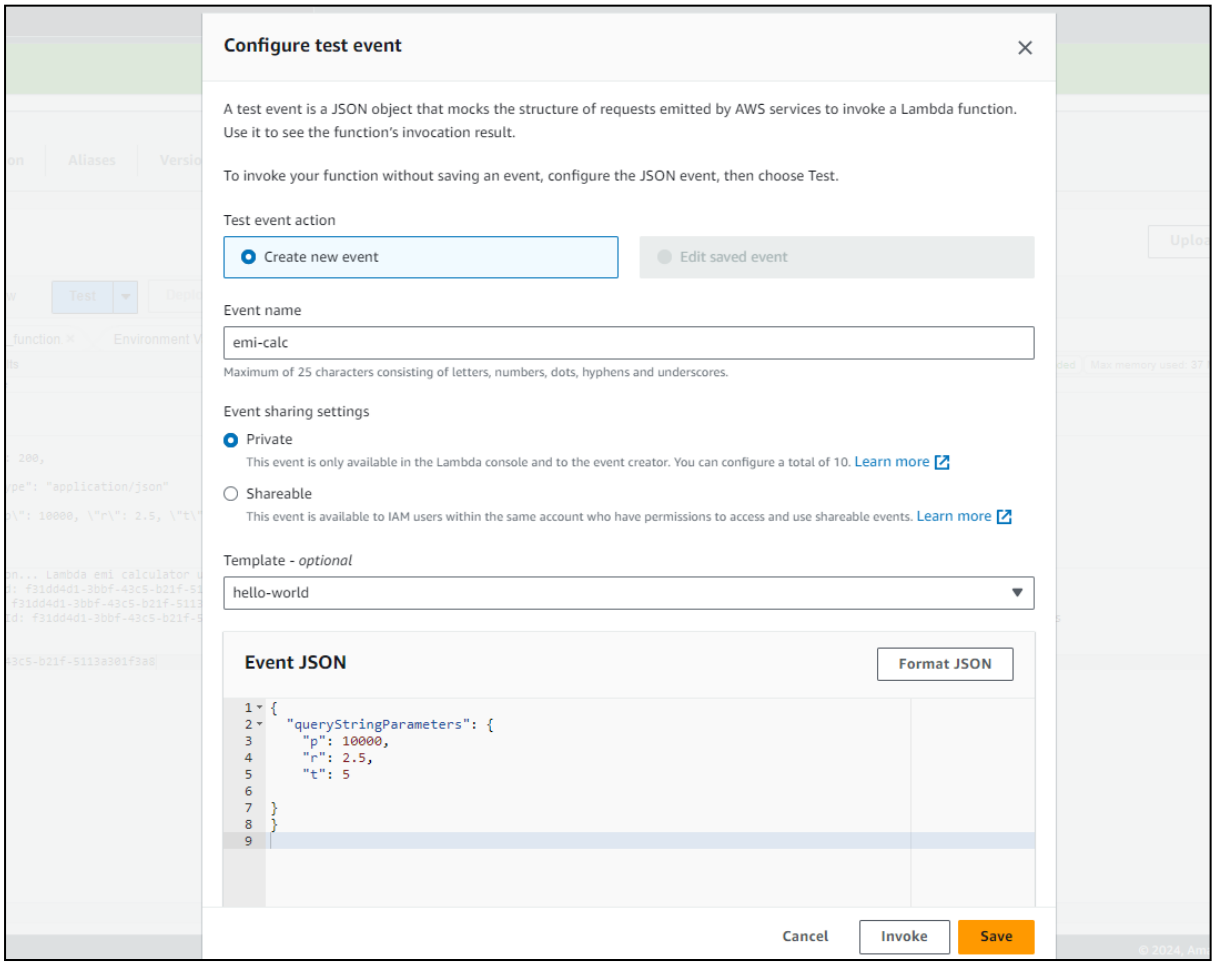

**Step: 03**

Then go to dropdown besides test and configure test event with sample input values for testing lambda function code.

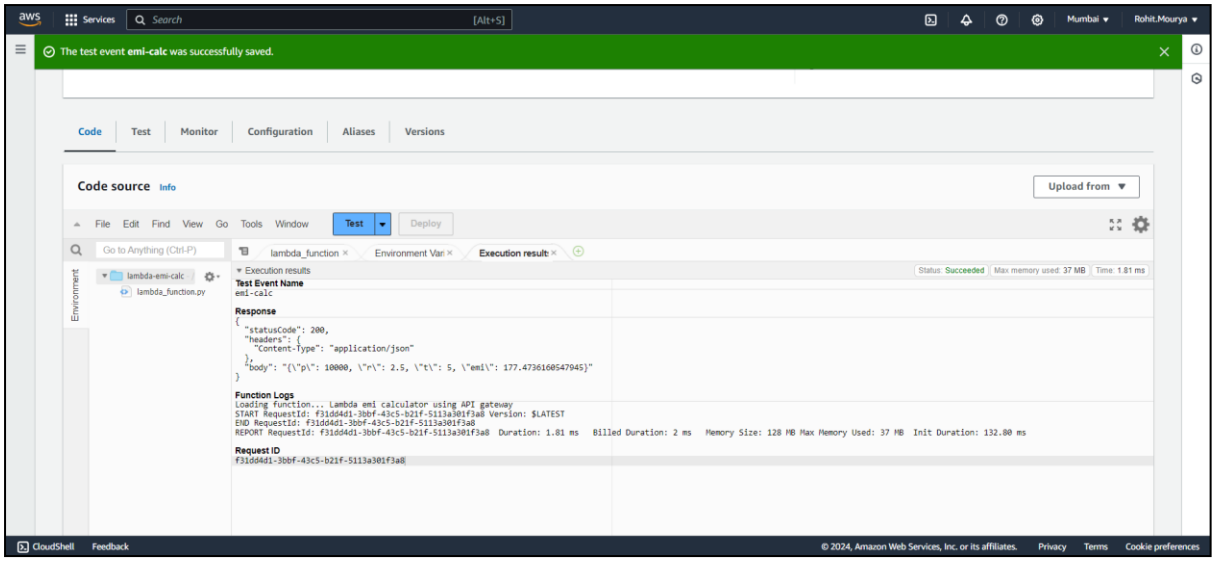
Code:

```
{
  "queryStringParameters": {
    "p": 10000,
    "r": 2.5,
    "t": 5

}
}
```

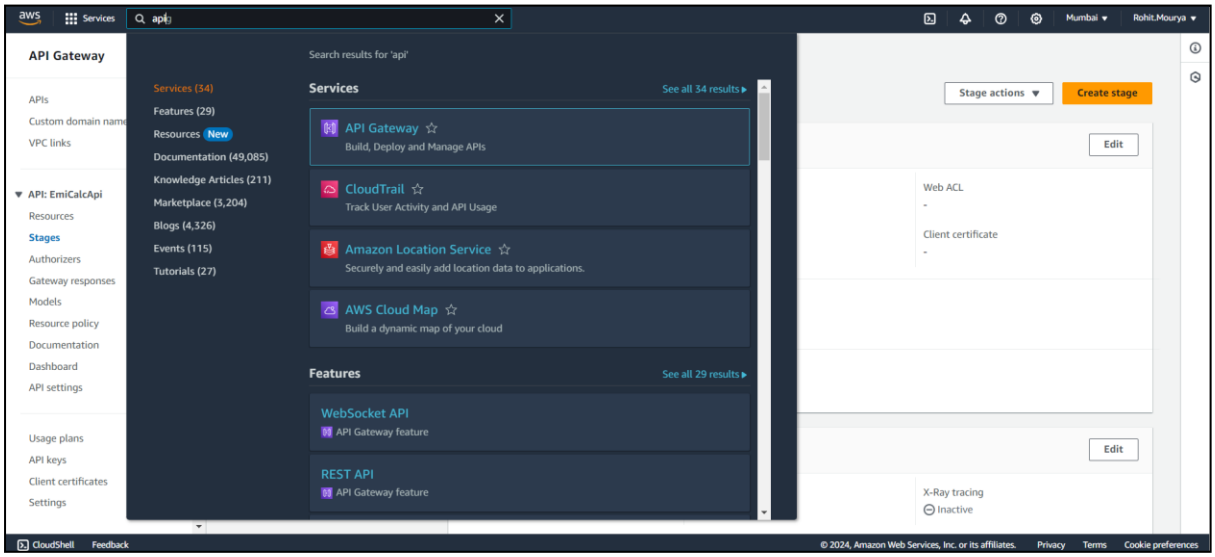



Test the code and get output without any errors.

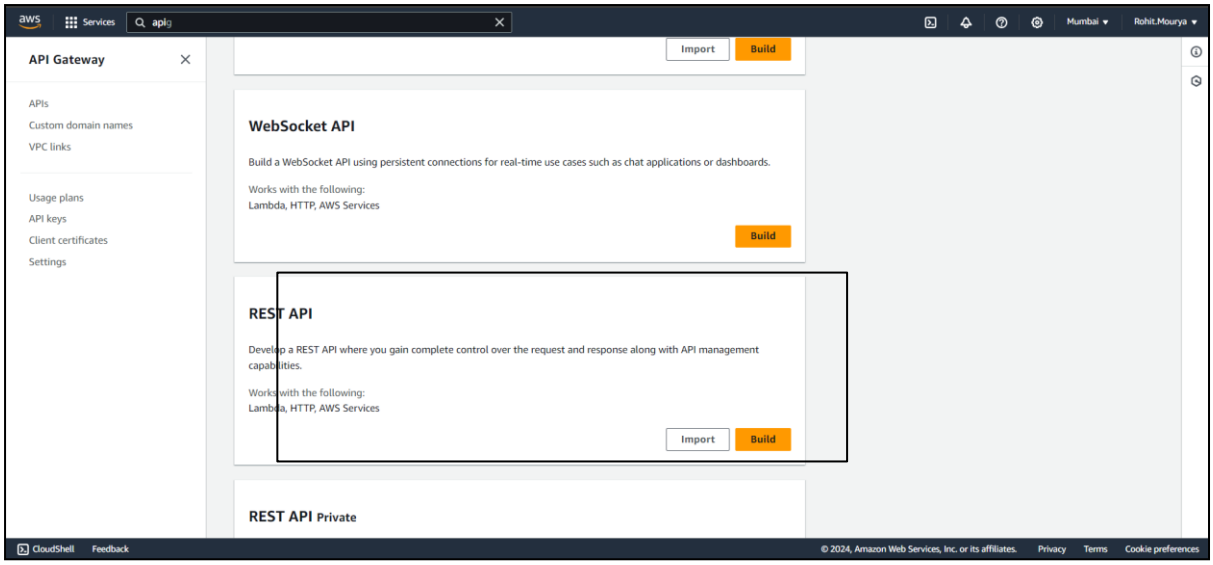



**Step: 04**

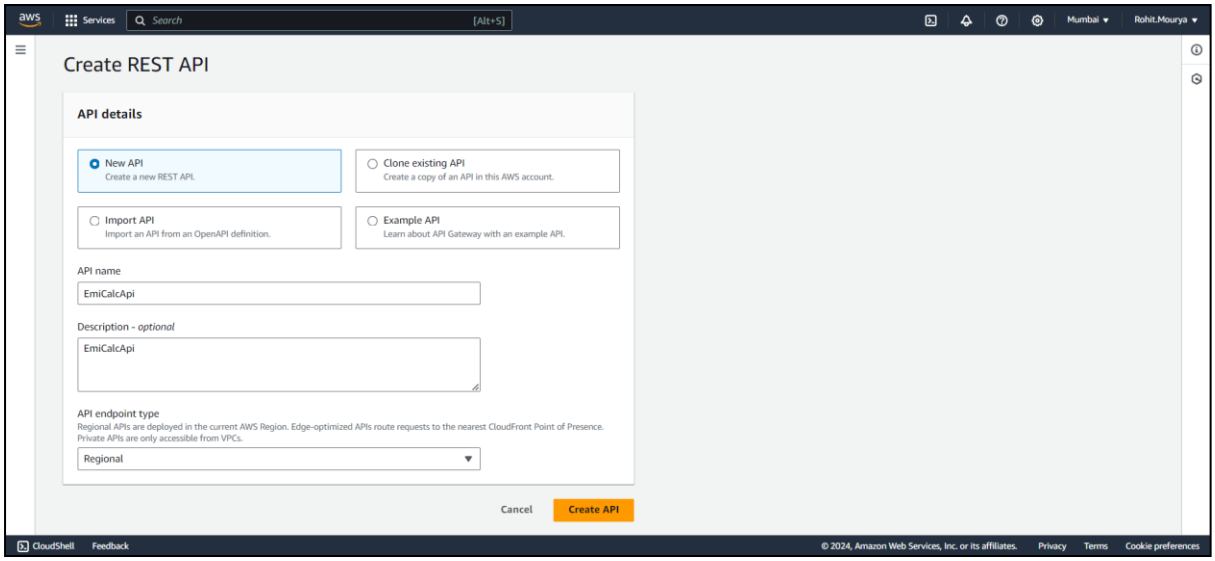
Go above and search for API gateway on the service bar and open it.




- Click on create API gateway
- Choose Rest API
- Click on import

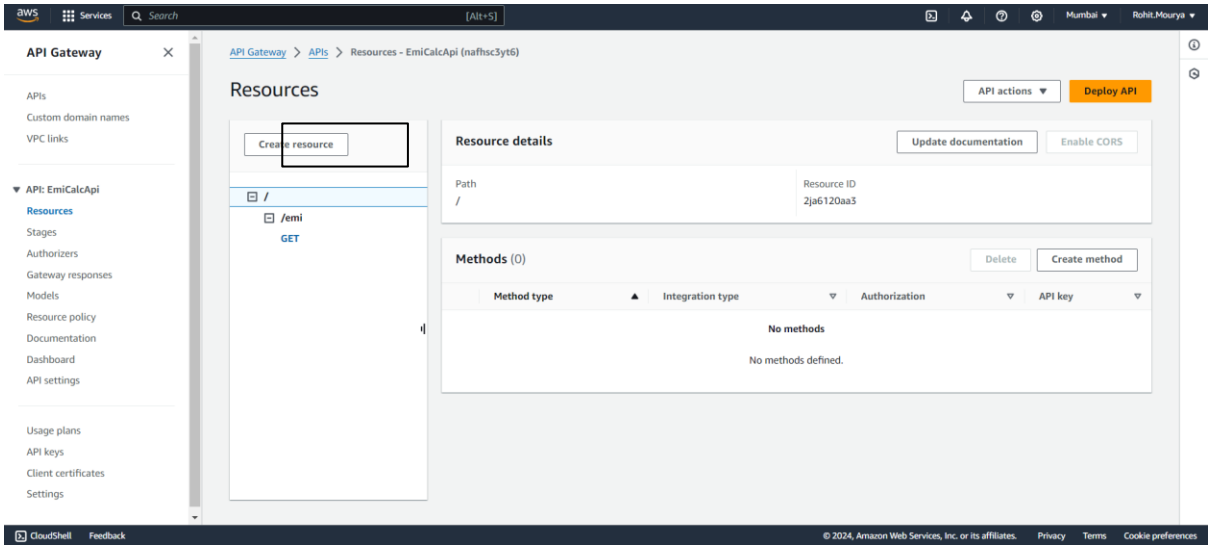



- Create new API
- API name = EmiCalcApi
- Description = EmiCalcApi
- Endpoint type = Regional
- Click on create tab

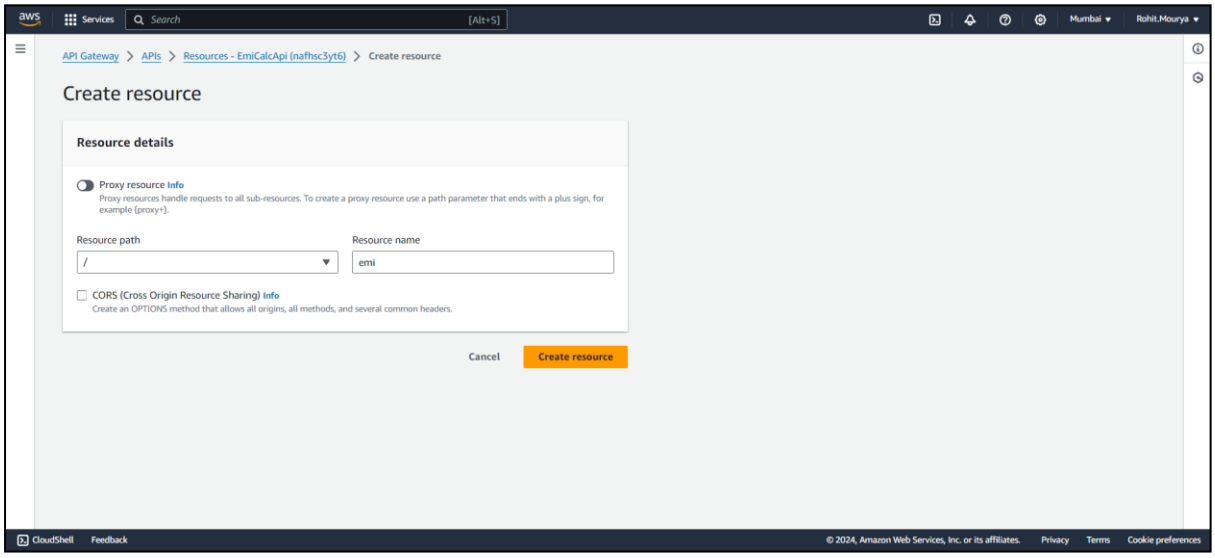



**Step: 05**

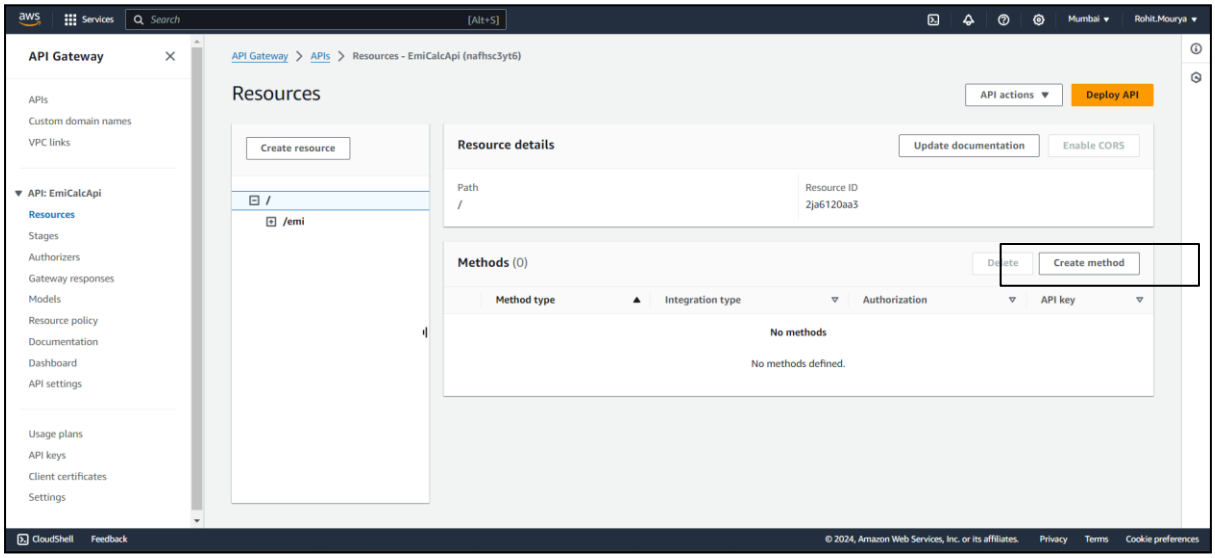
Next step click on actions then create resource



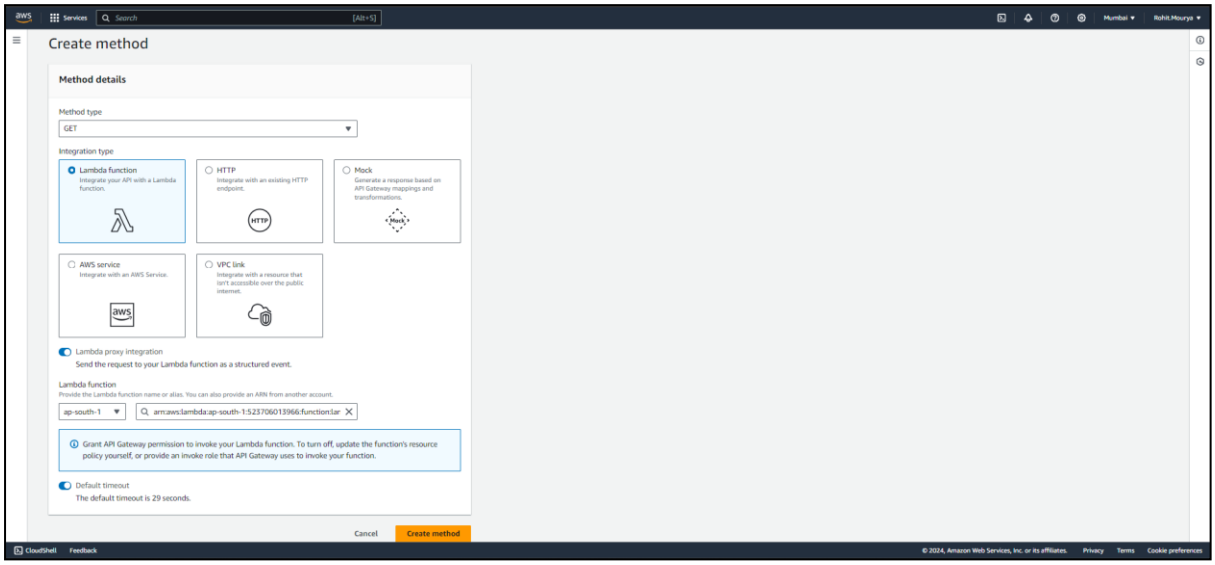

Enter resource name as **emi** and click create resource



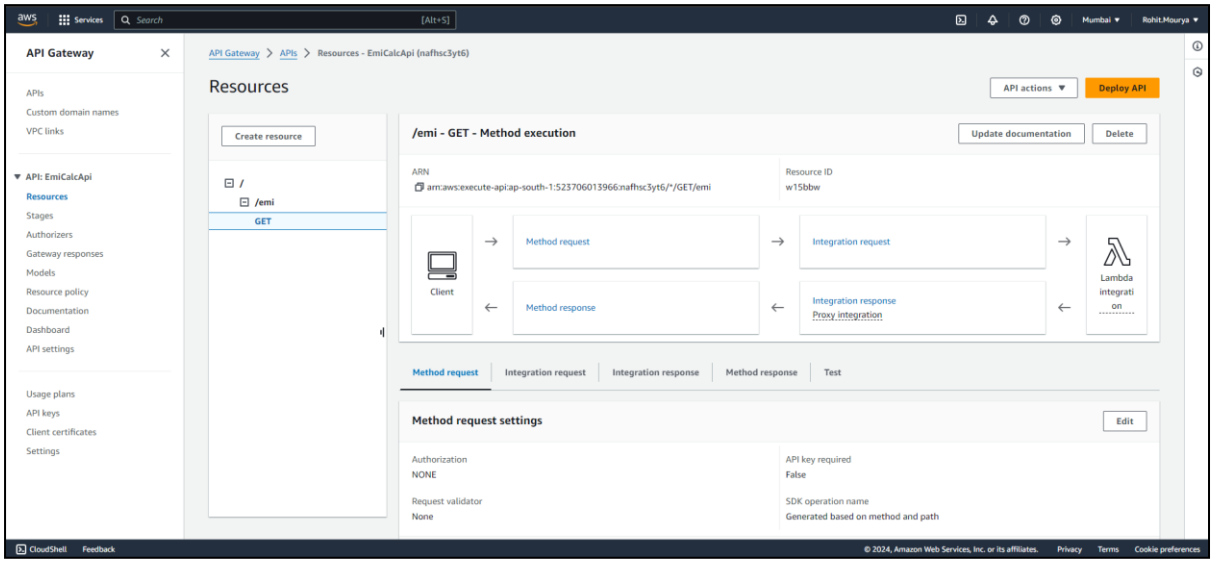

Now click on create method.



- Select Method as GET.
- Integration type as Lambda Function.
- Enable the Lambda proxy integration.
- Then, select the Lambda function which we have created previously.
- And click on create method.

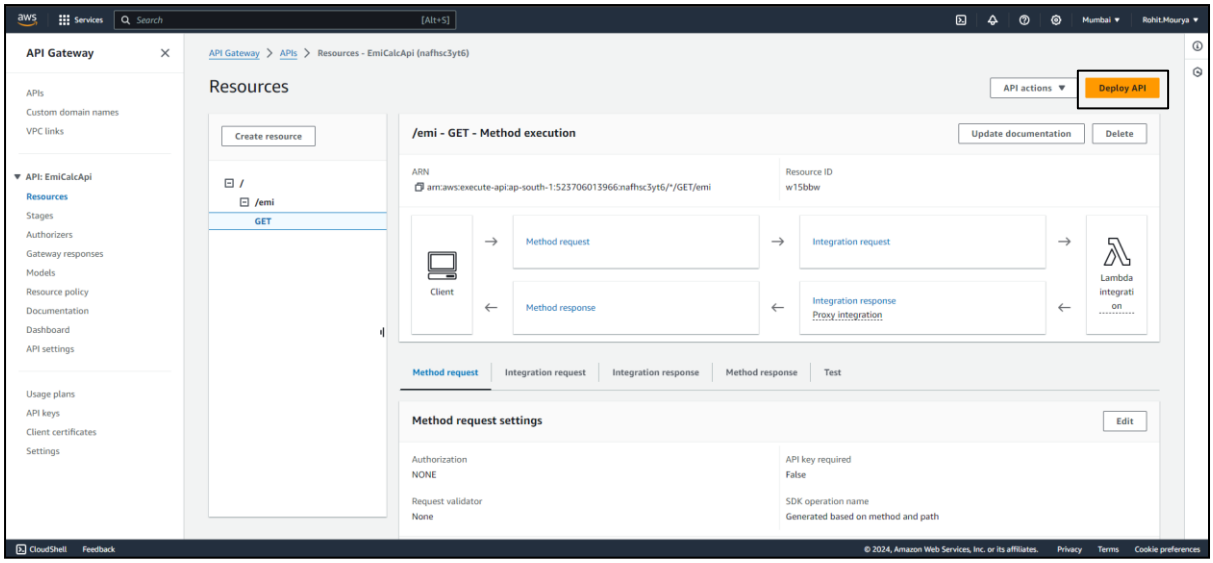



The GET method will look below.



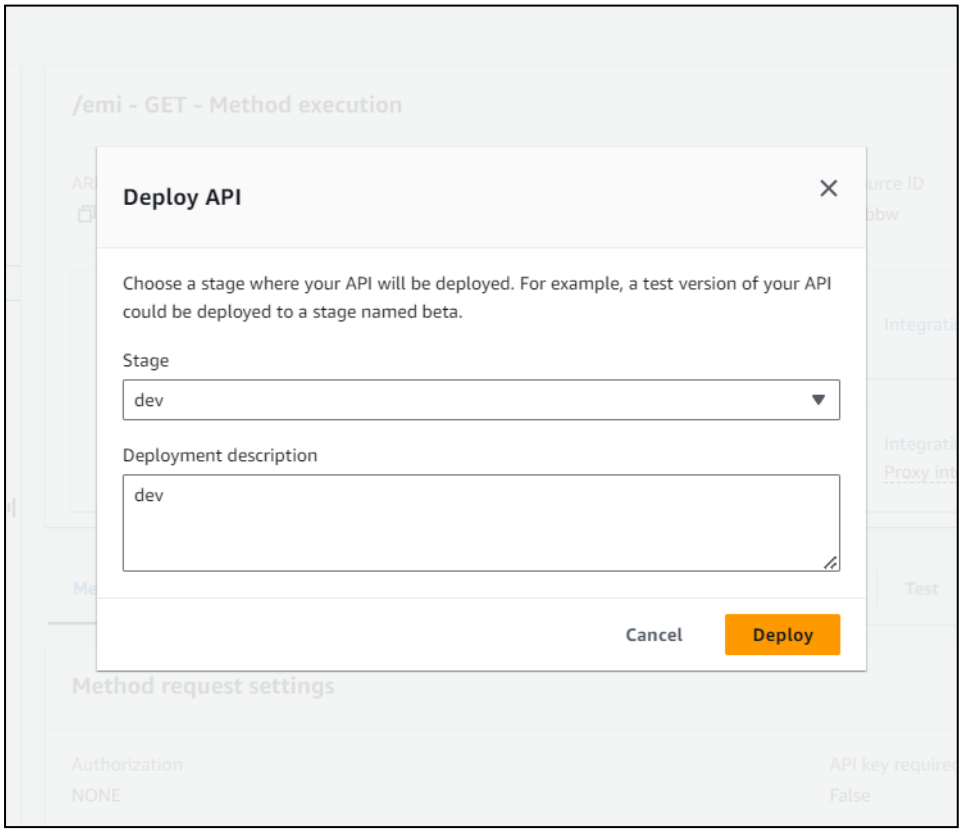

**Step: 06**

Now deploy the method by click on **Deploy API** button

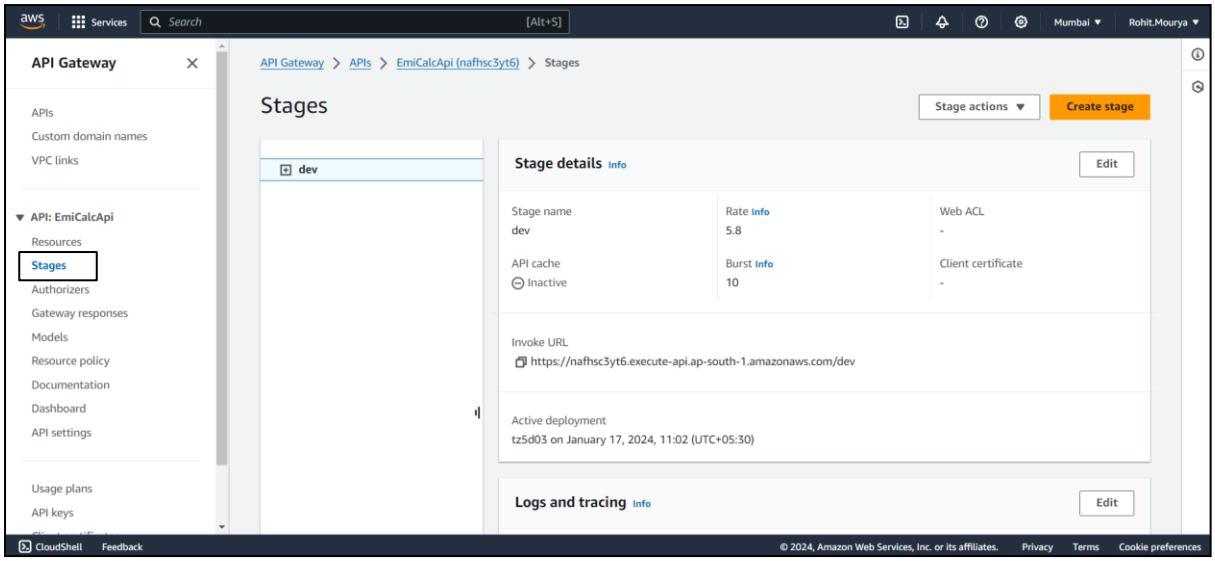



Enter stage name as **dev**.

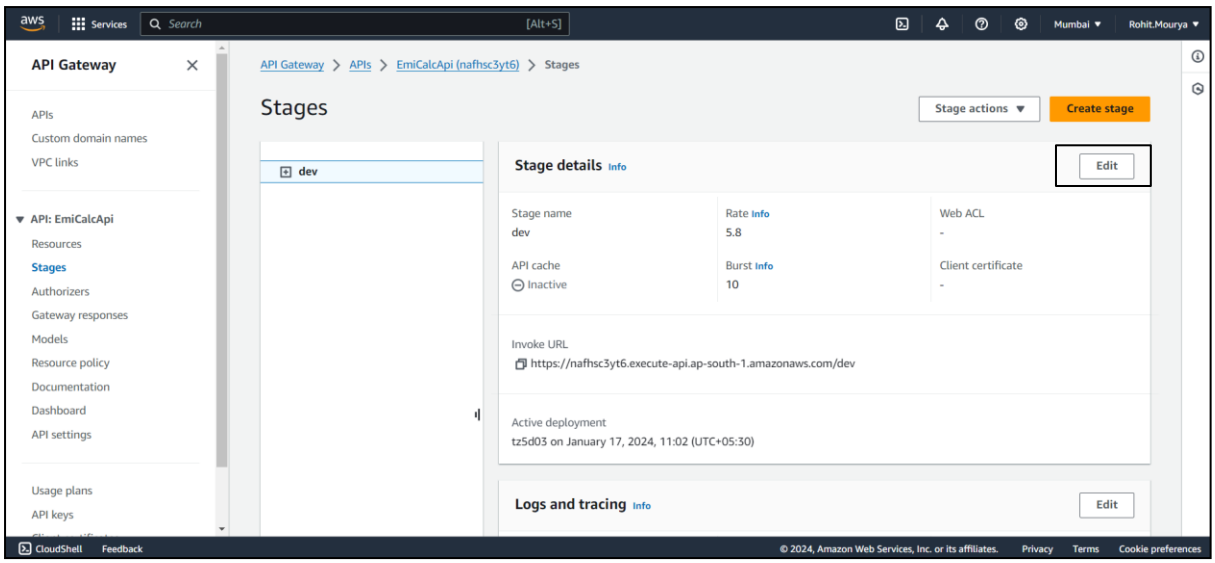
Deployment description as **dev**.



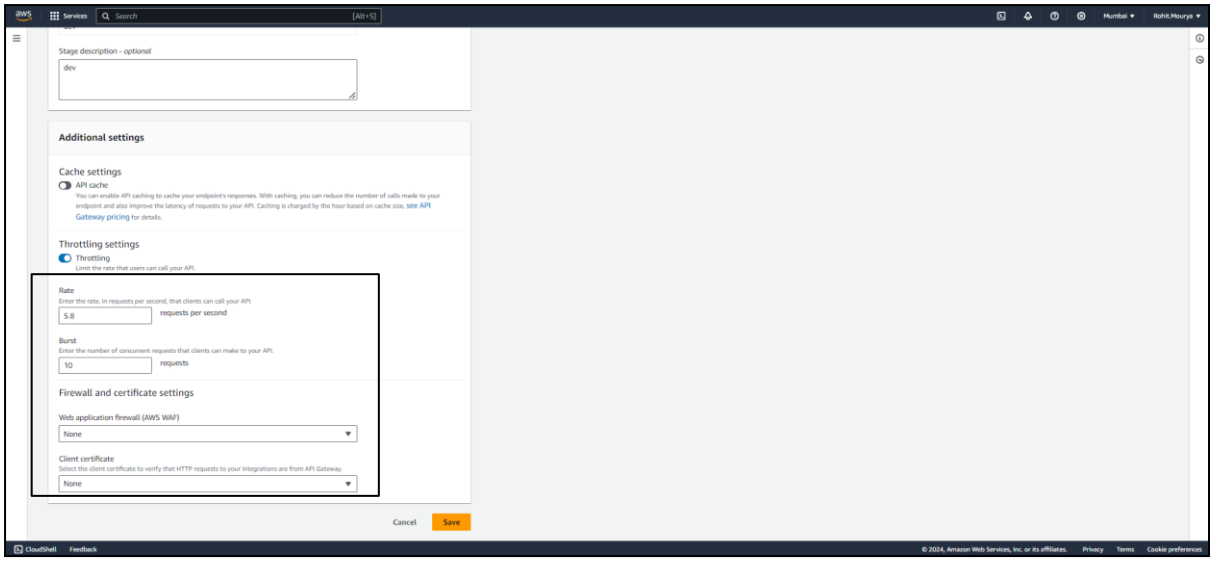

After deploying go to the Stage option from Api gateway column.




Then click on the edit button from the stage details tab.

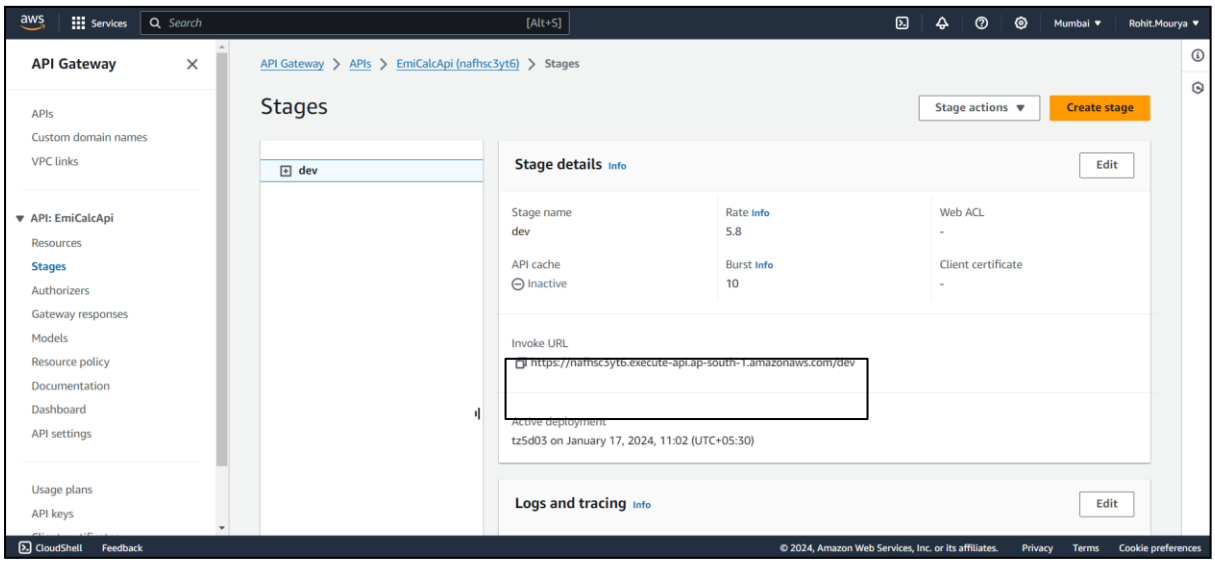



- After clicking on edit now we have to chage the rate and burst for calculating EMI.
- To calculate the EMI we have to place valid parameters
- Principle = p , Rate = r  and Time = t
- Then add rate (r) as certain value 5.8 and the final value time as 10




Then copy the Invoke URL form the stage details and paste it in the browser.

Need to add after url - /emi?p=10000&r=5.8&t=10




Now copy and paste the whole url in the browser and you will have the required EMI.

**OUTPUT:-**