Capstone Project

Deployment Instruction:

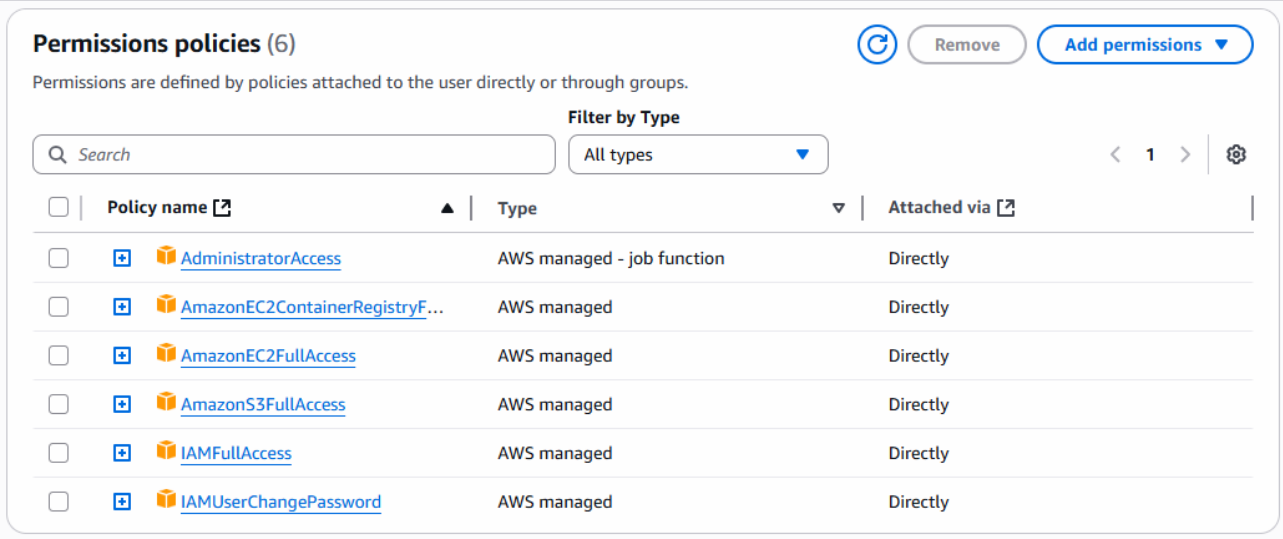
- **Create a Project With Fully Working Backend and Frontend**
- **Upload it on Github and use CI/CD or Jenkins for Automated Build**
- **Link: https://github.com/Nikunj-Java/Devops_Capstone_PW.git**

Prerequisites

- **AWS Account(With Administartor Access)**
- **AWS CLI Installed (`aws Configure` will be used)**
- **Git and Github Account**
- **Terraform V 1.2 + Above**
- **Node.js (for Future Extensibility)**
- **Python**

Set up AWS Credentials

A. **Goto AWS Console> I AM > Create User or Choose Existing USER**
B. **Create New Credentials for AWS CLI**
C. **Add the Below Permission**



D. **Configure aws cli using cmd**

```
D:\Capstone_PW_DevOps>aws configure
AWS Access Key ID [****************FSQS]: AKIA24WEXQMJMO2GDWN6
AWS Secret Access Key [****************Ls0Q]: 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
Default region name [ap-south-1]: us-east-1
Default output format [json]: json
```

If its looks empty copy paste the new credentials

2. Clone The Devops Accelerator Repository

> mkdir CapstoneProject && cd CapstoneProject

> git init

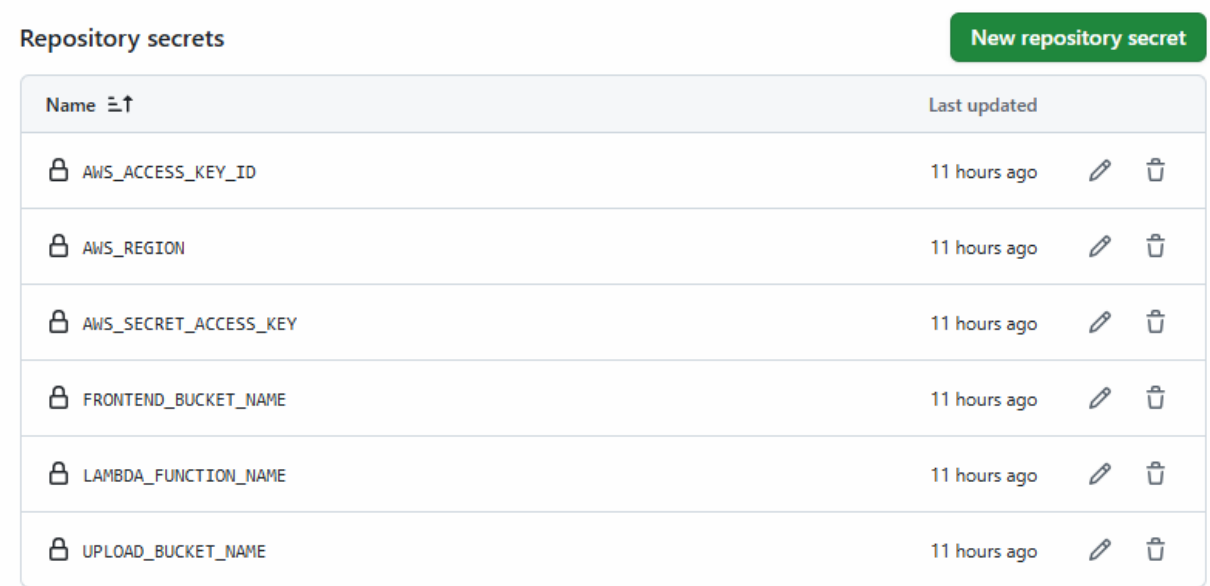
> git clone https://github.com/Nikunj-Java/Devops_Capstone_PW.git

Set up Giithub Repository SECRETS

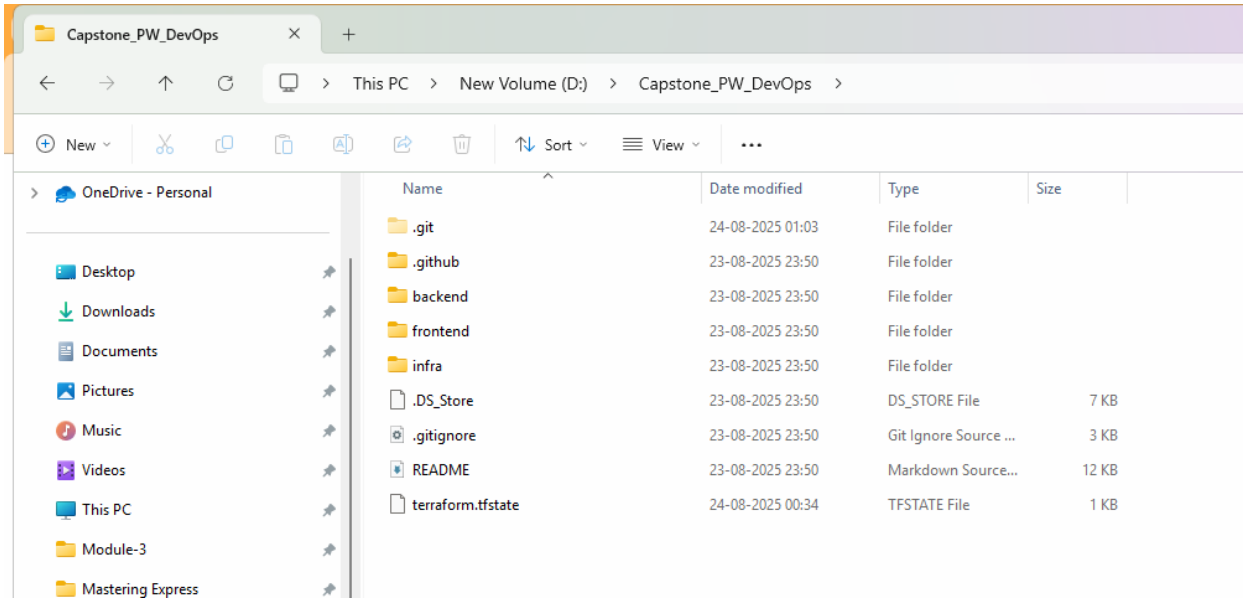
Navigate To> Github> Repo>Settings>Secrets>Actiions>New repository Secret

Add the Below Secrets in Github

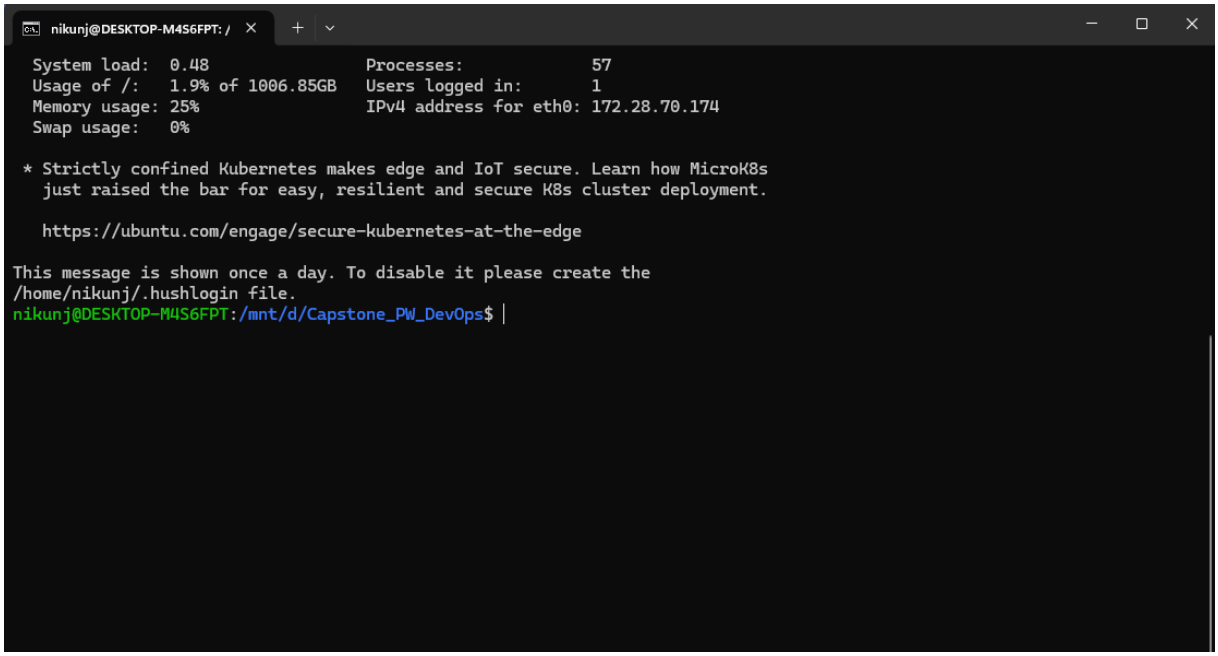
1. **AWS_ACCESS_KEY_ID= YOUR AWS IAM access key**
2. **AWS_SECRET_ACCESS_KEY= Your AWS IAM secret key**
3. **AWS_REGION= us-east-1**
4. **LAMBDA_FUNCTION= process-uploaded-file**
5. **FRONTEND_BUCKET_NAME= devops-accelerator-frontend-hosting-bucket**
6. **UPLOAD_BUCKET_NAME= devops-accelerator-upload-bucket**



Goto> your local repository> where the Code is Available



Open wsl terminal here



Step:1 Create Zip File

- cd backend/lambda/process-uploaded-file
- zip –r lambda.zip .
- cd ../generate-presigned-url
- zip –r lambda.zip .

check the lambda folder in backend and frontend subdirectory is prepared

now come back to the root path and shift to infra folder

- **cd ../infra**

Step:2 Create required Buckets

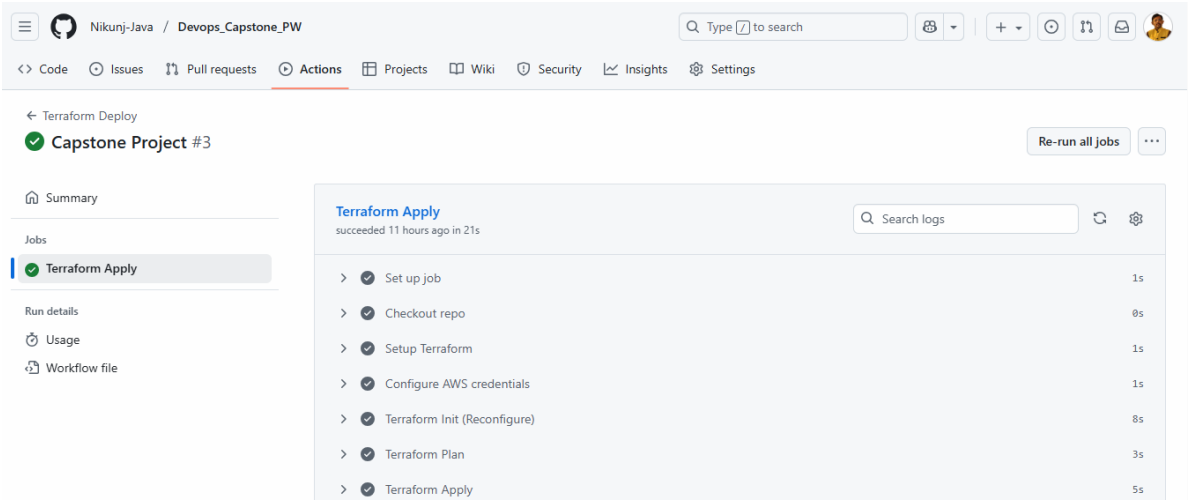
```
#s3 Bucket for state

aws s3api create-bucket \

--bucket devops-accelerator-platform-tf-state \

--region us-east-1
```

```
nikunj@DESKTOP-M4S6FPT:/mnt/d/Capstone_PW_DevOps/infra$ aws s3api create-bucket \
--bucket devops-accelerator-platform-tf-state \
--region us-east-1
{
    "Location": "/devops-accelerator-platform-tf-state"
}
nikunj@DESKTOP-M4S6FPT:/mnt/d/Capstone_PW_DevOps/infra$
```

Dynamo DB Table for Locking

```
aws dynamodb create-table \
--table-name devops-accelerator-tf-locker \
--attribute-definitions AttributeName=LockID,AttributeType=S \
--key-schema AttributeName=LockID,KeyType=HASH \
--billing-mode PAY_PER_REQUEST \
--region us-east-1
```

Step:3 Push the changes to Git hub so that github/action will be performed



- After successfully build move to the next step

Step:4 Run Terraform Commands

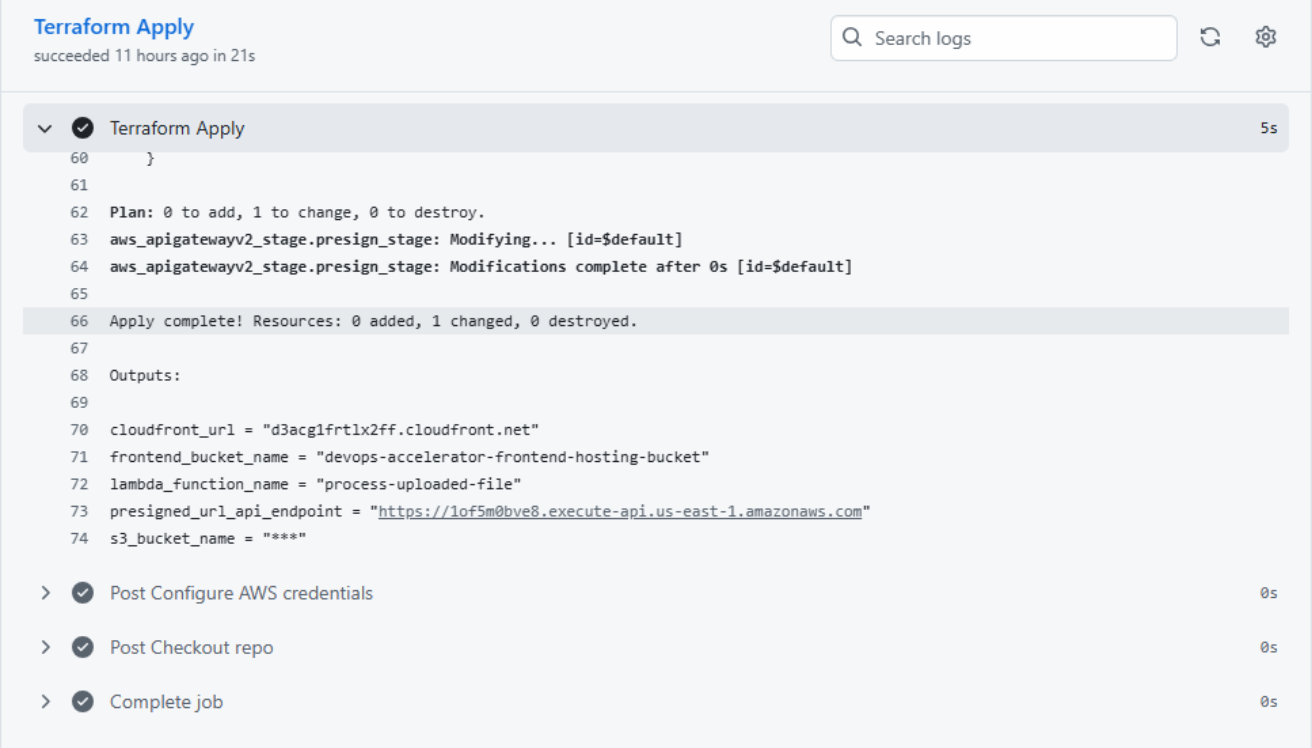
- cd infra/terraform
- terraform init
- terraform validate
- terraform plan

```
nikunj@DESKTOP-M4S6FPT:/mnt/d/Capstone_PW_DevOps/infra$ cd terraform/
nikunj@DESKTOP-M4S6FPT:/mnt/d/Capstone_PW_DevOps/infra/terraform$ terraform init
```

Now Again Push the Code to Github

Check the Github>action>terraform>TerraformApply>

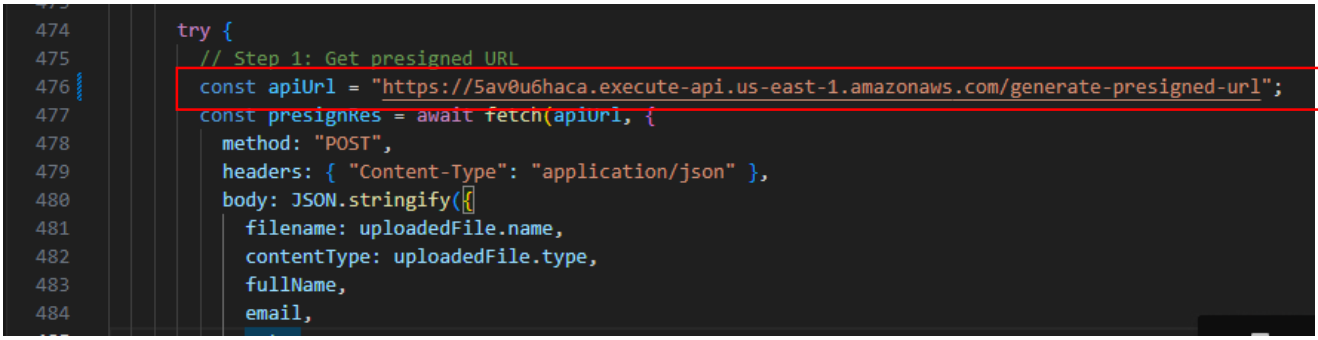
Check the output



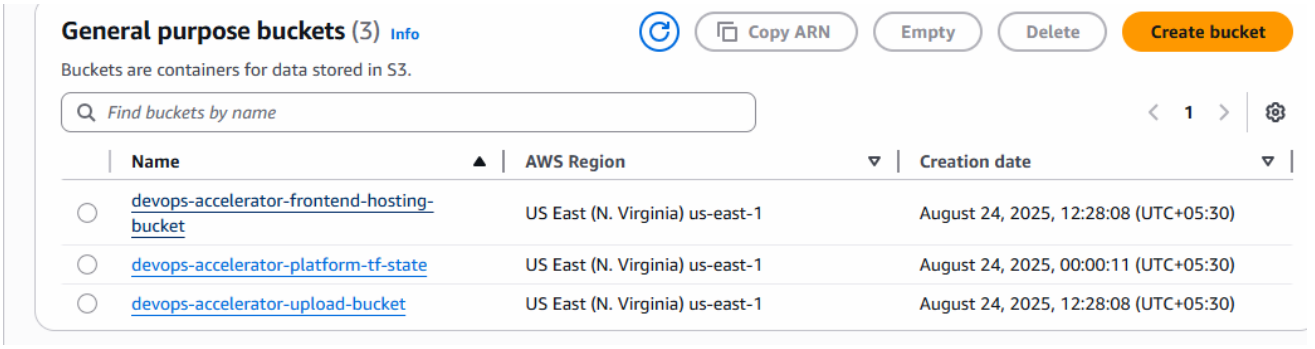
Now once it is ready:

Copy presigned_url_api_endpoint and paste in index.html file

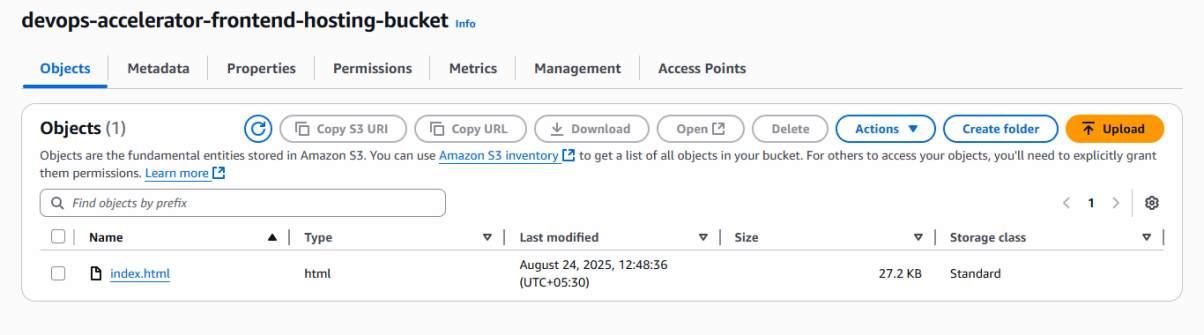
apiURL: <your presignedurl>/generate-presigned-url



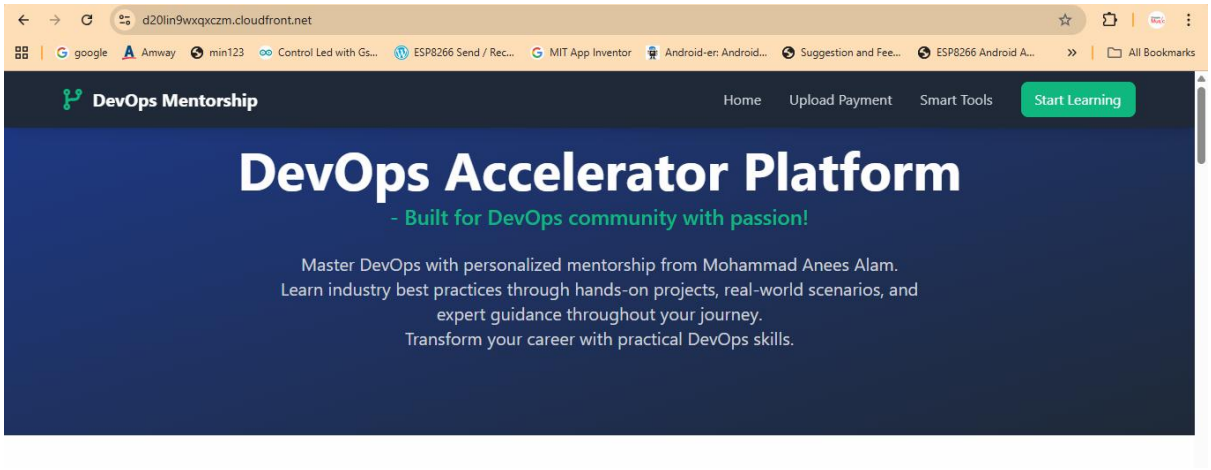
Now upload this index.html file to s3 bucket

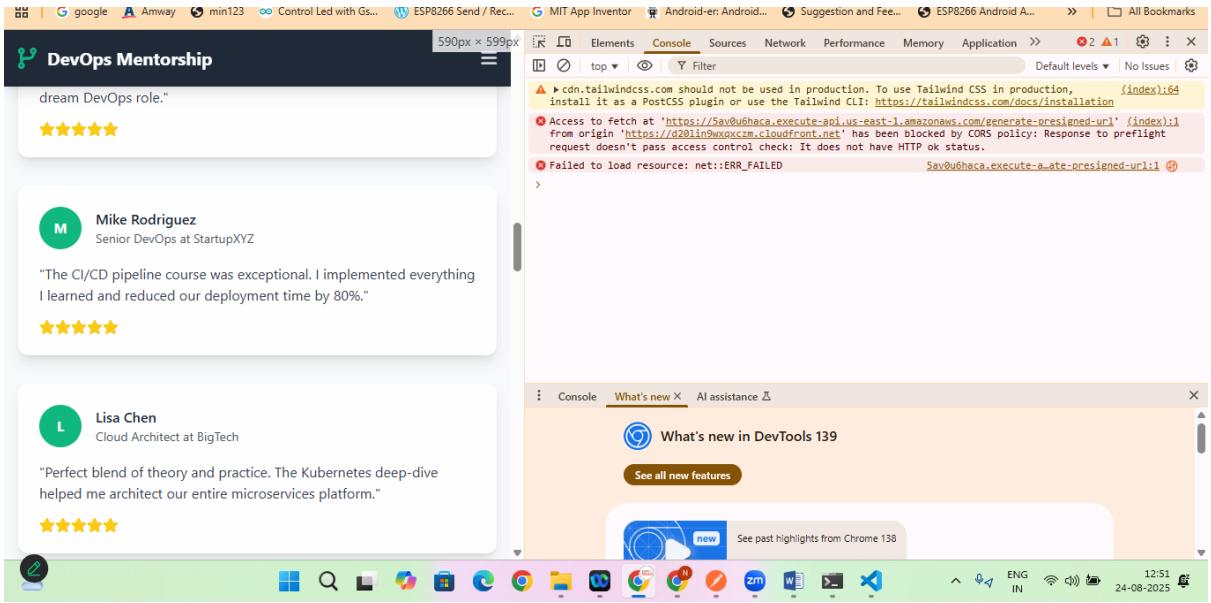


Choose devops-accelerator-frontend-hosting-bucket and upload index.html file here



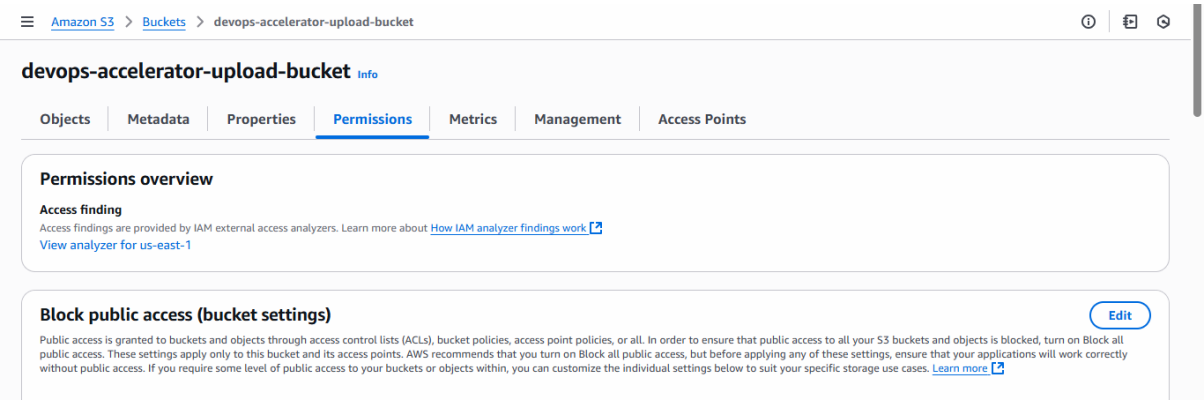
Now copy the cloudfront_url from github/actions add https://cloudfront_url in browser

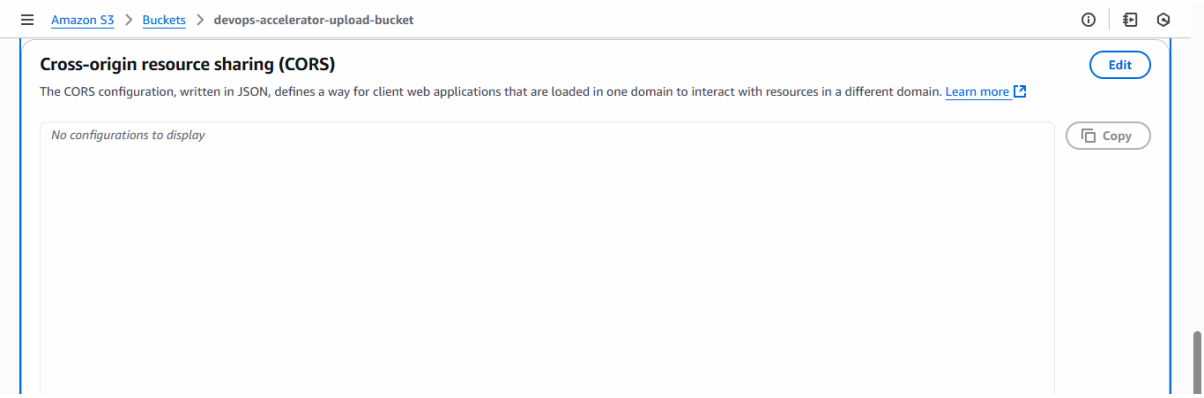




But if you will try to upload something it will cause Cross-Origin Policy Error

So lets goto> s3 bucket>devops-accelerator-upload-bucket> permissions> cross-origin resource sharing





Click on EDIT and

Add the CORS Policy

```
[
  {
    "AllowedHeaders": [
      "*"
    ],
    "AllowedMethods": [
      "GET",
      "PUT",
      "POST",
      "DELETE",
```

```
            "HEAD"
        ],
        "AllowedOrigins": [
            "*"
        ],
        "ExposeHeaders": []
    }
]
```

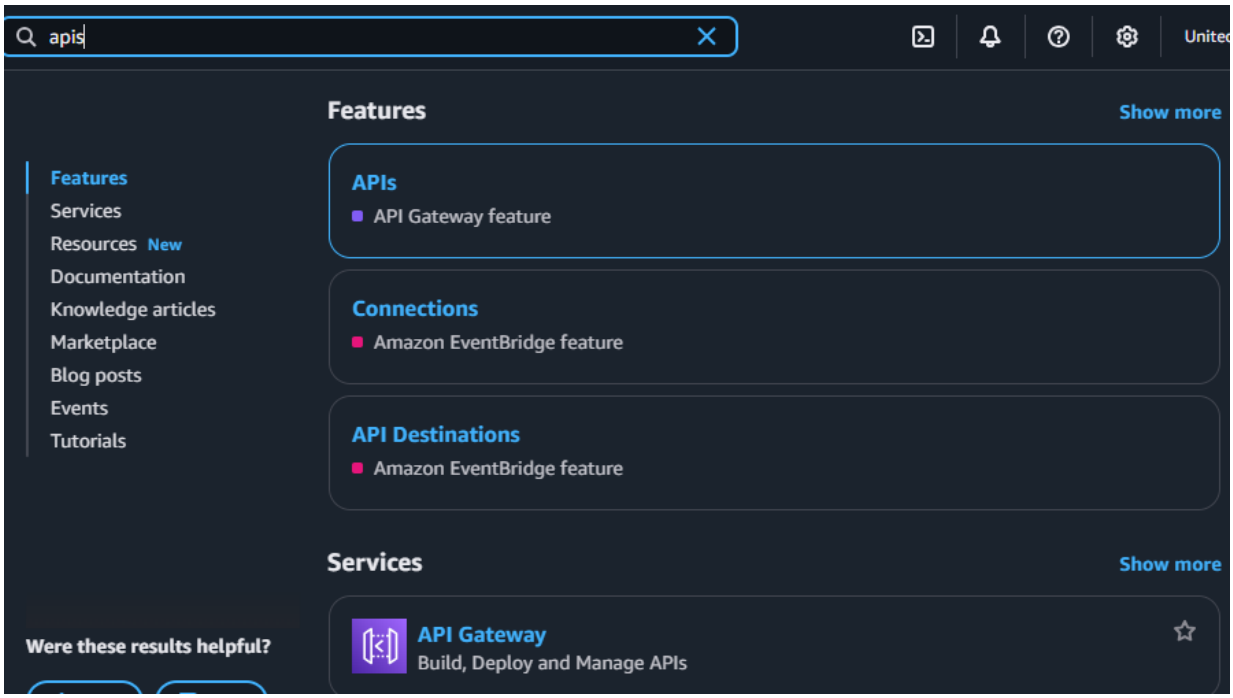
Save it

All Done !

Now check the output and try uploading the image

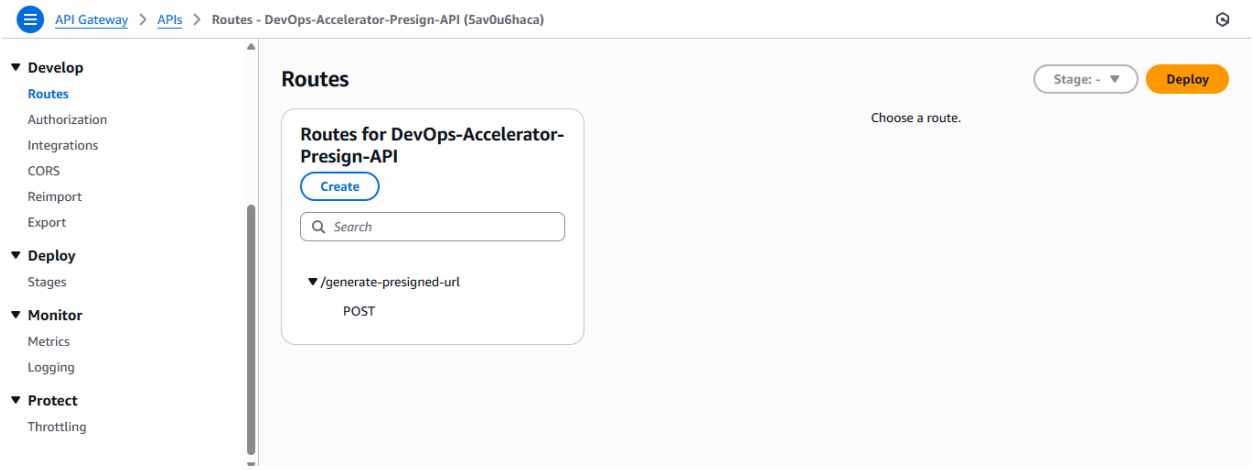
If still error is there

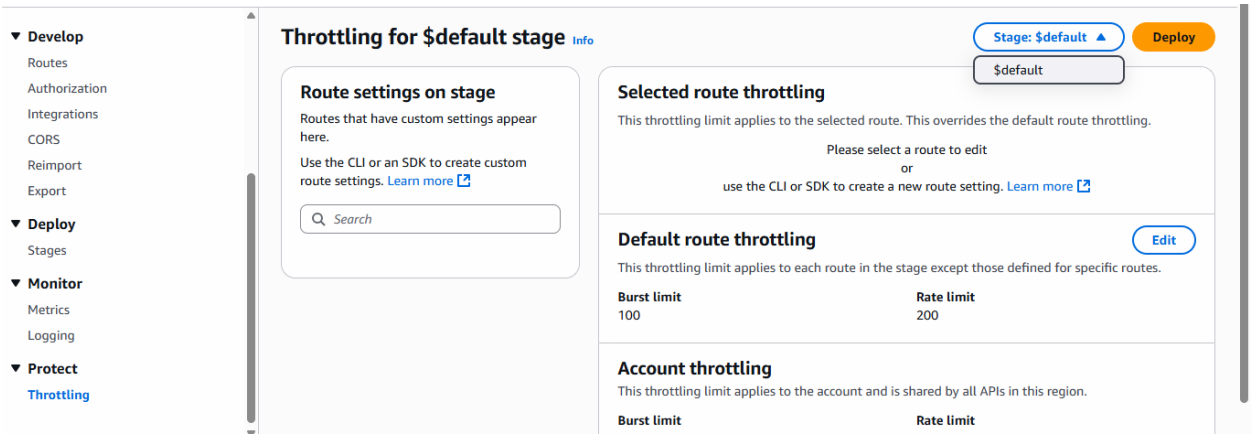
Goto> aws> apis>devops-accelerator-api> click on it



On the left side scroll to bottom you will see **Protect>Throttling**

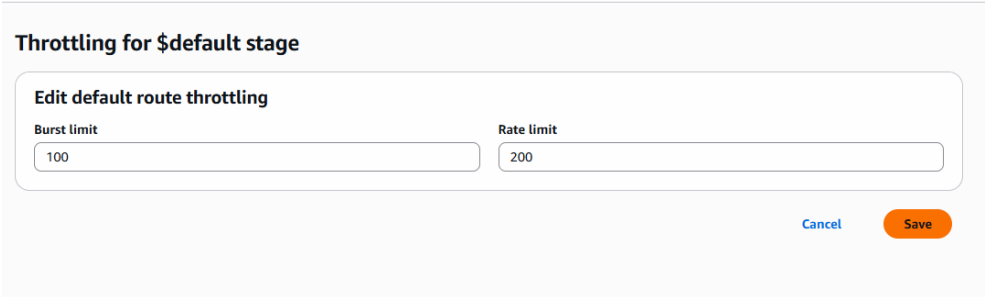
Select $default





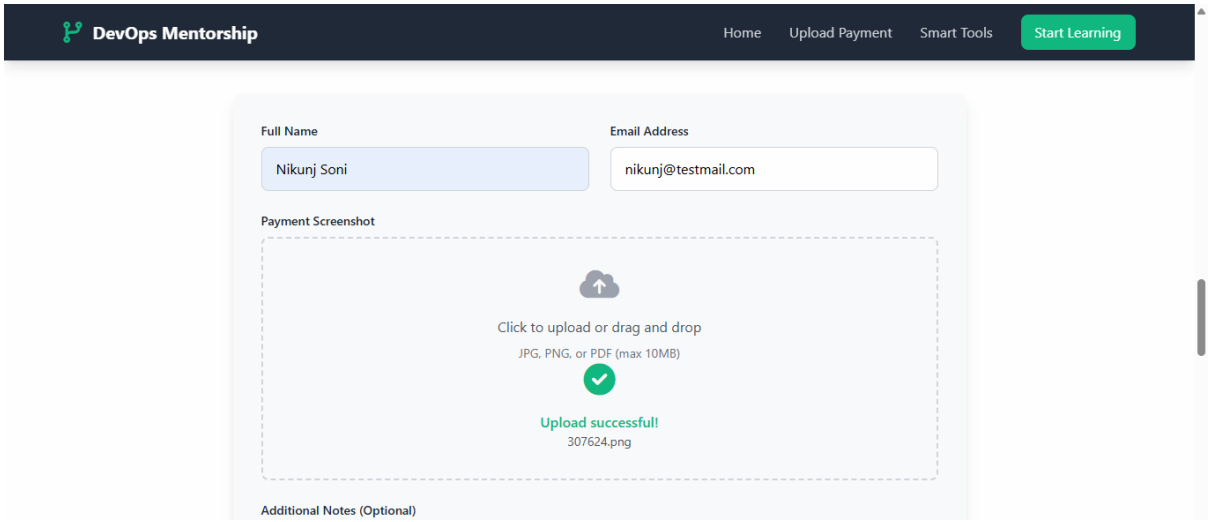
Choose default throttling >EDIT

And set this values



Save it and all set to go!

Now if you will upload anything it will be Uploaded to the server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Payment Screenshot
Click to upload or drag and drop
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Additional Notes (Optional)