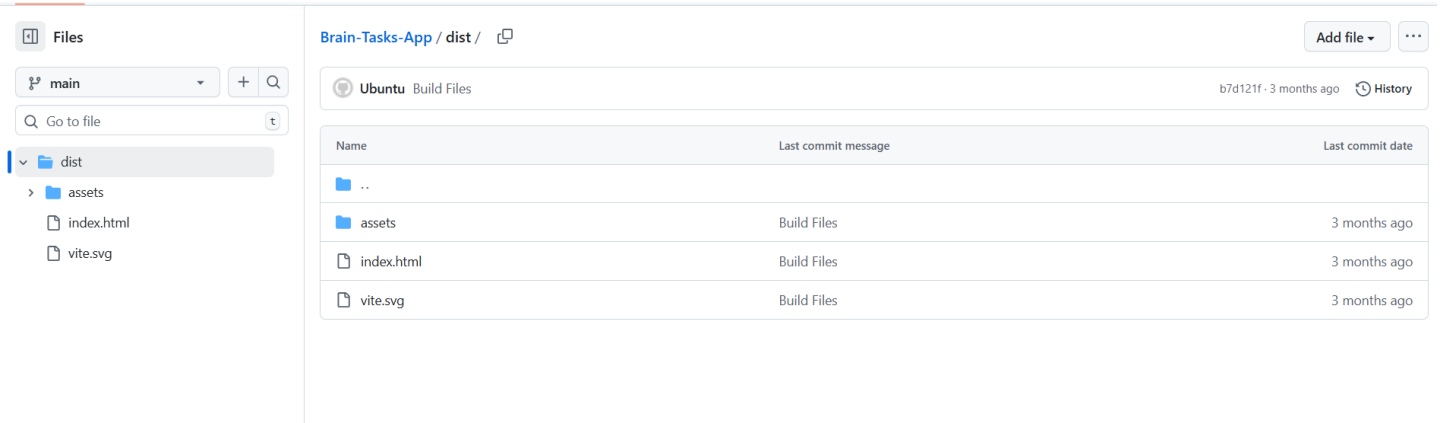
Project: Brain-Tasks-App

➔ **Step 1: Clone the repo and Dockerize the app**



➔ **Step 2: Create ECR repo and push the image**

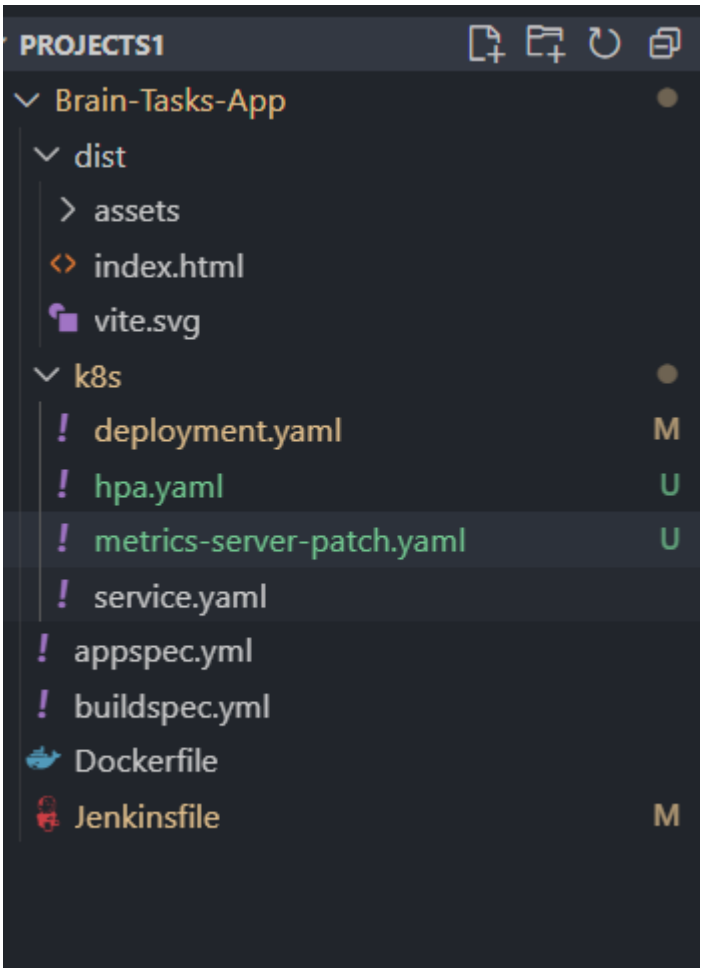
```
aws ecr get-login-password --region ap-south-1 \
  | docker login --username AWS --password-stdin 907969929387.dkr.ecr.ap-south-1.amazonaws.com

docker tag brain-tasks-app:latest \
  907969929387.dkr.ecr.ap-south-1.amazonaws.com/brain-tasks-app:latest

docker push 907969929387.dkr.ecr.ap-south-1.amazonaws.com/brain-tasks-app:latest
```

➔ **Step 3: Create EKS Cluster**

```
eksctl create cluster \
  --name brain-tasks-cluster \
  --region ap-south-1 \
  --nodegroup-name standard-workers \
  --node-type t3.medium \
  --nodes 2 \
  --nodes-min 1 \
  --nodes-max 3 \
  --managed
```

➔ **Step 4: Kubernetes manifest – Deploy the app**

Create k8s folder with deployment.yaml and service.yaml.



➔ **Step 5: Metrics and HPA and Monitoring**

```
ip-192-168-80-77.ap-south-1.compute.internal    37m          1%       483Mi           14%
PS C:\Users\91866\projects1\Brain-Tasks-App\k8s> kubectl top pods
NAME                                       CPU(cores)   MEMORY(bytes)
brain-tasks-deployment-8474b78b5d-g52ch    0m           3Mi
brain-tasks-deployment-8474b78b5d-pbdqh    0m           3Mi
PS C:\Users\91866\projects1\Brain-Tasks-App\k8s> kubectl get hpa
NAME              REFERENCE                           TARGETS       MINPODS   MAXPODS   REPLICAS   AGE
brain-tasks-hpa   Deployment/brain-tasks-deployment   cpu: 0%/30%   2         6         2          36m
```

➔ **Step 6: Build Jenkins and deploy to EKS.**

Console Output

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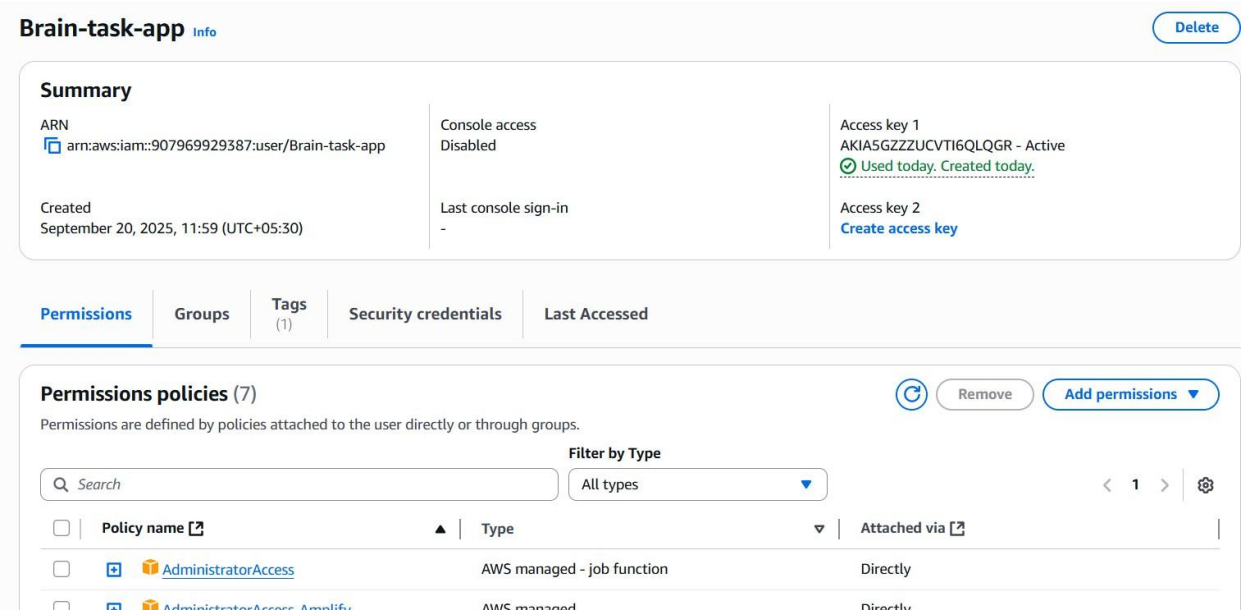
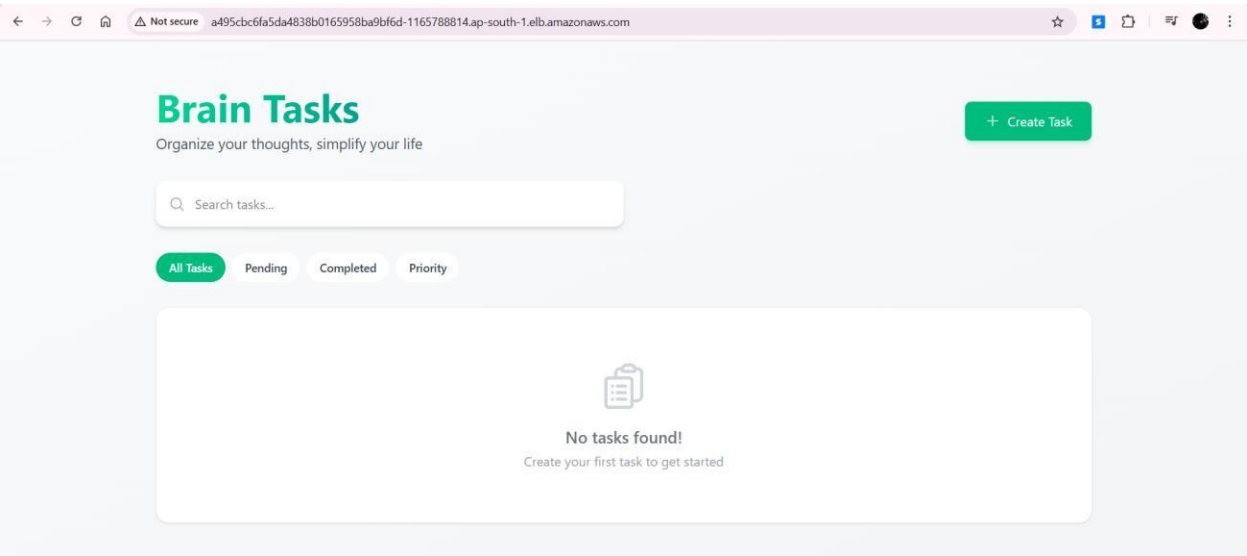
```
Started by user pranit pisal
Obtained Jenkinsfile from git https://github.com/Wanted162/brain-task-app.git
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/brain-tasks-pipeline
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Checkout SCM)
[Pipeline] checkout
Selected Git installation does not exist. Using Default
The recommended git tool is: NONE
No credentials specified
 > git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/brain-tasks-pipeline/.git # timeout=10
Fetching changes from the remote Git repository
 > git config remote.origin.url https://github.com/Wanted162/brain-task-app.git # timeout=10
Fetching upstream changes from https://github.com/Wanted162/brain-task-app.git
 > git --version # timeout=10
 > git --version # 'git version 2.43.0'
 > git fetch --tags --force --progress -- https://github.com/Wanted162/brain-task-app.git +refs/heads/*:refs/remotes/origin/* # timeout=10
 > git rev-parse refs/remotes/origin/main^{commit} # timeout=10
Checking out Revision f6549d367634d087525c737953c2934664535bce (refs/remotes/origin/main)
 > git config core.sparsecheckout # timeout=10
 > git checkout -f f6549d367634d087525c737953c2934664535bce # timeout=10
Commit message: "Initial commit with chnages in Jenkinsfile"
 > git rev-list --no-walk f6549d367634d087525c737953c2934664535bce # timeout=10
```

```
latest: digest: sha256:8a8a9c20af554a6ffbdb45a4f47e94dbe823b8981ab2337430823464744a3b4b size: 2406
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Deploy to EKS)
[Pipeline] sh
+ aws eks update-kubeconfig --region ap-south-1 --name brain-tasks-cluster
Updated context arn:aws:eks:ap-south-1:907969929387:cluster/brain-tasks-cluster in /var/lib/jenkins/.kube/config
[Pipeline] sh
+ kubectl apply -f k8s/deployment.yaml --validate=false
deployment.apps/brain-tasks-deployment unchanged
[Pipeline] sh
+ kubectl apply -f k8s/service.yaml --validate=false
service/brain-tasks-service unchanged
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

➔ Step 7: Verifications and Monitoring






```
91866@LAPTOP-I9TPEN7J MINGW64 ~/projects1/Brain-Tasks-App (main)
$ kubectl top nodes
NAME                                          CPU(cores)   CPU(%)   MEMORY(bytes)   MEMORY(%)
ip-192-168-90-130.ap-south-1.compute.internal   40m          2%       680Mi           47%

91866@LAPTOP-I9TPEN7J MINGW64 ~/projects1/Brain-Tasks-App (main)
$ kubectl top pods
NAME                                      CPU(cores)   MEMORY(bytes)
brain-tasks-deployment-bd49c7b95-n24rf    1m           3Mi
brain-tasks-deployment-bd49c7b95-n9whj    1m           3Mi

91866@LAPTOP-I9TPEN7J MINGW64 ~/projects1/Brain-Tasks-App (main)
$ kubectl get pods -n kube-system -l k8s-app=metrics-server
NAME                              READY   STATUS    RESTARTS   AGE
metrics-server-7c7855dd75-rf6mx   1/1     Running   0          10m
metrics-server-7c7855dd75-t76jn   1/1     Running   0          10m
```