



**Ganpat
University**

॥ विद्यया समाजोत्कर्षः ॥

**Institute of
Computer
Technology**

Name: Tushar Panchal

En.No: 21162101014

Sub: EADC (Enterprise Application Development for Cloud)

Branch: CBA

Batch:61

PRACTICAL 03

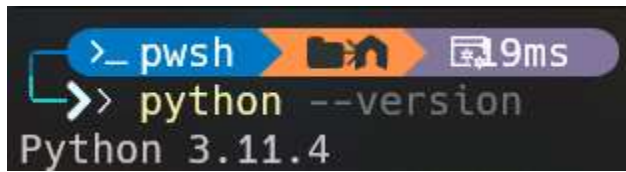
❖ Question :

You are a developer working on a Node.js application that you need to deploy to AWS Elastic Beanstalk (EB) using the EB CLI. Your application utilizes Express.js for the backend and HTML CSS for the frontend. You want to ensure a smooth deployment process with minimal downtime for your users. Additionally, you want to configure environment variables specific to your deployment environment.

» Below I provided step by step solution for above practical .

» 1. Make sure that your python version is 3.11.4 :

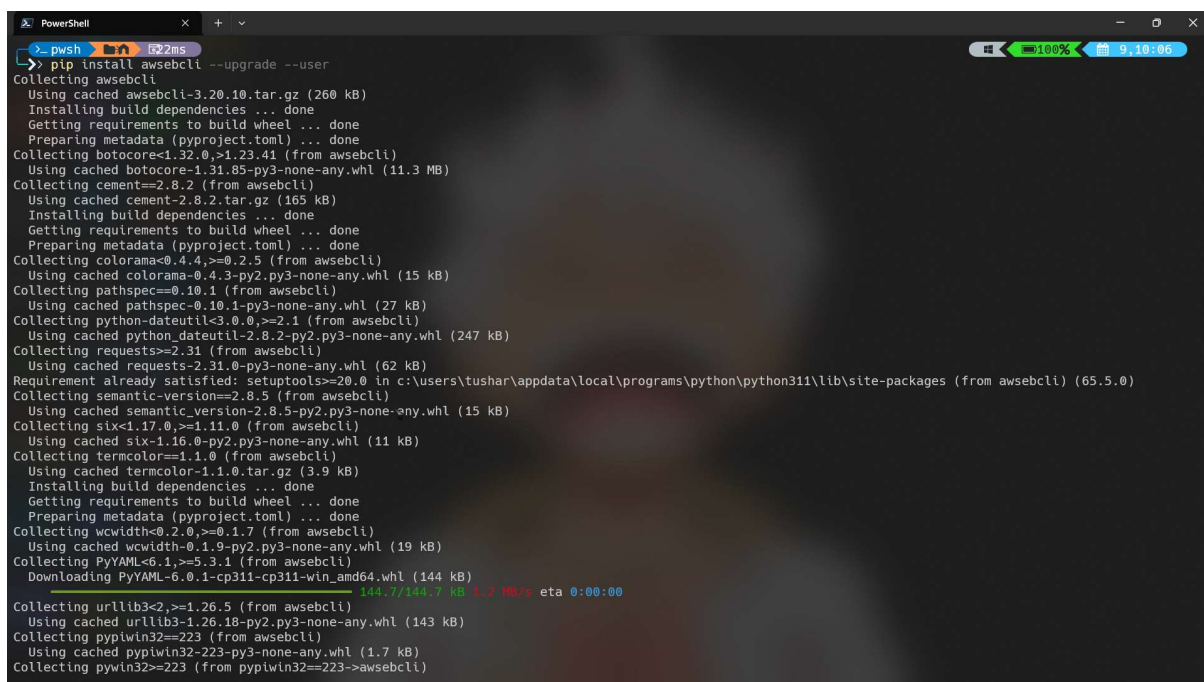
Command: `python -version`



```
>_ pwsh
>> python --version
Python 3.11.4
```

» 2. Then install EB CLI using pip:

Command: `pip install awsebcli --upgrade --user`

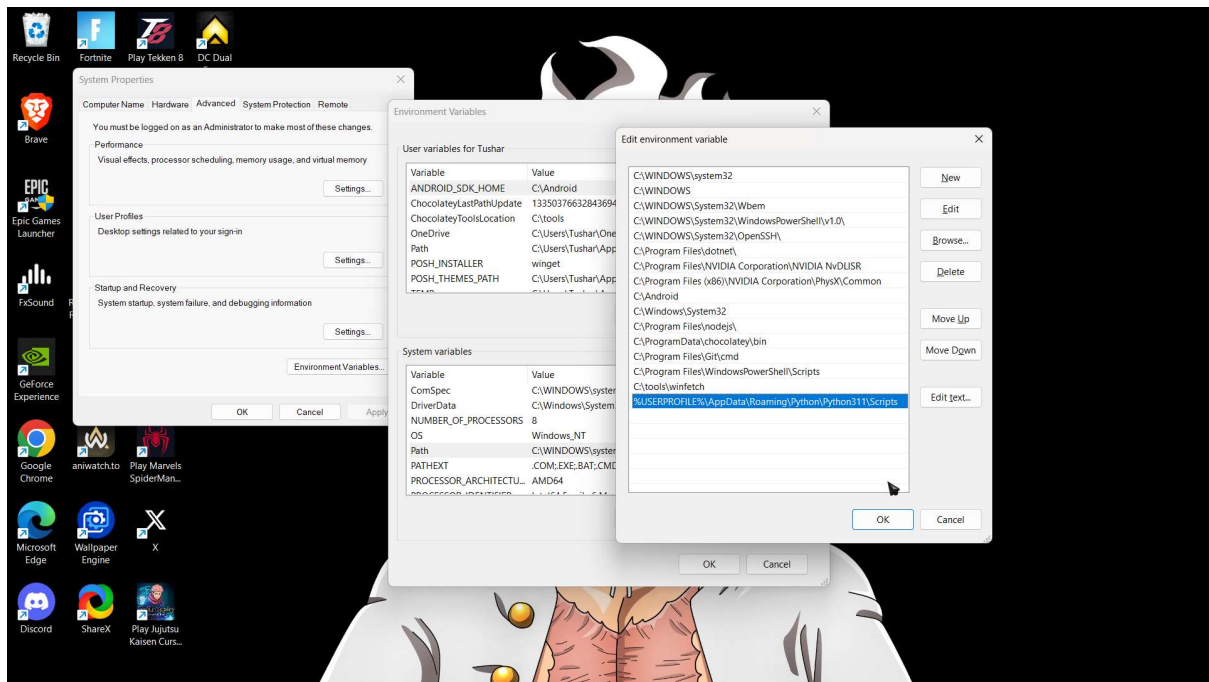


```
PowerShell
>_ pwsh
>> pip install awsebcli --upgrade --user
Collecting awsebcli
  Using cached awsebcli-3.20.10.tar.gz (260 kB)
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
  Preparing metadata (pyproject.toml) ... done
Collecting botocore<1.32.0, >=1.23.41 (from awsebcli)
  Using cached botocore-1.31.85-py3-none-any.whl (11.3 MB)
Collecting cement==2.8.2 (from awsebcli)
  Using cached cement-2.8.2.tar.gz (165 kB)
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
  Preparing metadata (pyproject.toml) ... done
Collecting colorama<0.4.4, >=0.2.5 (from awsebcli)
  Using cached colorama-0.4.3-py2.py3-none-any.whl (15 kB)
Collecting pathspec==0.10.1 (from awsebcli)
  Using cached pathspec-0.10.1-py3-none-any.whl (27 kB)
Collecting python-dateutil<3.0.0, >=2.1 (from awsebcli)
  Using cached python_dateutil-2.8.2-py2.py3-none-any.whl (247 kB)
Collecting requests>=2.31 (from awsebcli)
  Using cached requests-2.31.0-py3-none-any.whl (62 kB)
Requirement already satisfied: setuptools>=20.0 in c:\users\tushar\appdata\local\programs\python\python311\lib\site-packages (from awsebcli) (65.5.0)
Collecting semantic-version==2.8.5 (from awsebcli)
  Using cached semantic_version-2.8.5-py2.py3-none-any.whl (15 kB)
Collecting six<1.17.0, >=1.11.0 (from awsebcli)
  Using cached six-1.16.0-py2.py3-none-any.whl (11 kB)
Collecting termcolor==1.1.0 (from awsebcli)
  Using cached termcolor-1.1.0.tar.gz (3.9 kB)
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
  Preparing metadata (pyproject.toml) ... done
Collecting wcwidth<0.2.0, >=0.1.7 (from awsebcli)
  Using cached wcwidth-0.1.9-py2.py3-none-any.whl (19 kB)
Collecting PyYAML<6.1, >=5.3.1 (from awsebcli)
  Downloading PyYAML-6.0.1-cp311-cp311-win_amd64.whl (144 kB)
Collecting urllib3<2, >=1.26.5 (from awsebcli)
  Using cached urllib3-1.26.18-py2.py3-none-any.whl (143 kB)
Collecting pywin32==223 (from awsebcli)
  Using cached pywin32-223-py3-none-any.whl (1.7 kB)
Collecting pywin32>=223 (from pywin32==223->awsebcli)
```

Restart a new command shell for the new Path variable to take effect.

» 3. Add the following executable path to the Path environment variable in your Windows user account. The location might be different, depending on whether you install Python for one user or all users.

%USERPROFILE%\AppData\Roaming\Python\Python311\Scripts



» 4. Verify that the EB CLI is installed correctly:

Command: **eb --version**

```

> pwsh -f .\main.ps1
> eb --version
EB CLI 3.20.10 (Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)])
>
  
```

» 5. Initialize EB in our project folder:

Command: **eb init**

```

> pwsh -f .\main.ps1
> eb init

Select a default region
1) us-east-1 : US East (N. Virginia)
2) us-west-1 : US West (N. California)
3) us-west-2 : US West (Oregon)
4) eu-west-1 : EU (Ireland)
5) eu-central-1 : EU (Frankfurt)
6) ap-south-1 : Asia Pacific (Mumbai)
7) ap-southeast-1 : Asia Pacific (Singapore)
8) ap-southeast-2 : Asia Pacific (Sydney)
9) ap-northeast-1 : Asia Pacific (Tokyo)
10) ap-northeast-2 : Asia Pacific (Seoul)
11) sa-east-1 : South America (Sao Paulo)
12) cn-north-1 : China (Beijing)
13) cn-northwest-1 : China (Ningxia)
14) us-east-2 : US East (Ohio)
15) ca-central-1 : Canada (Central)
16) eu-west-2 : EU (London)
17) eu-west-3 : EU (Paris)
18) eu-north-1 : EU (Stockholm)
19) eu-south-1 : EU (Milano)
20) ap-east-1 : Asia Pacific (Hong Kong)
21) me-south-1 : Middle East (Bahrain)
22) il-central-1 : Middle East (Israel)
23) af-south-1 : Africa (Cape Town)
24) ap-southeast-3 : Asia Pacific (Jakarta)
25) ap-northeast-3 : Asia Pacific (Osaka)
(default is 3):
  
```

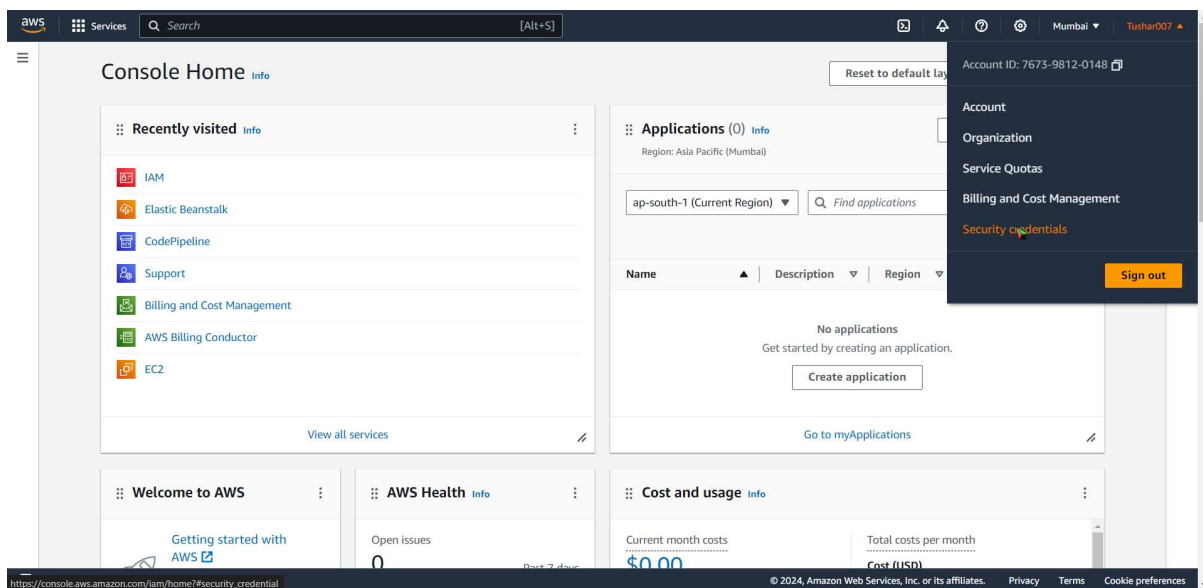
» 6. Select our desired region, we have selected 6 which was (Mumbai):

```
(default is 3): 6
```

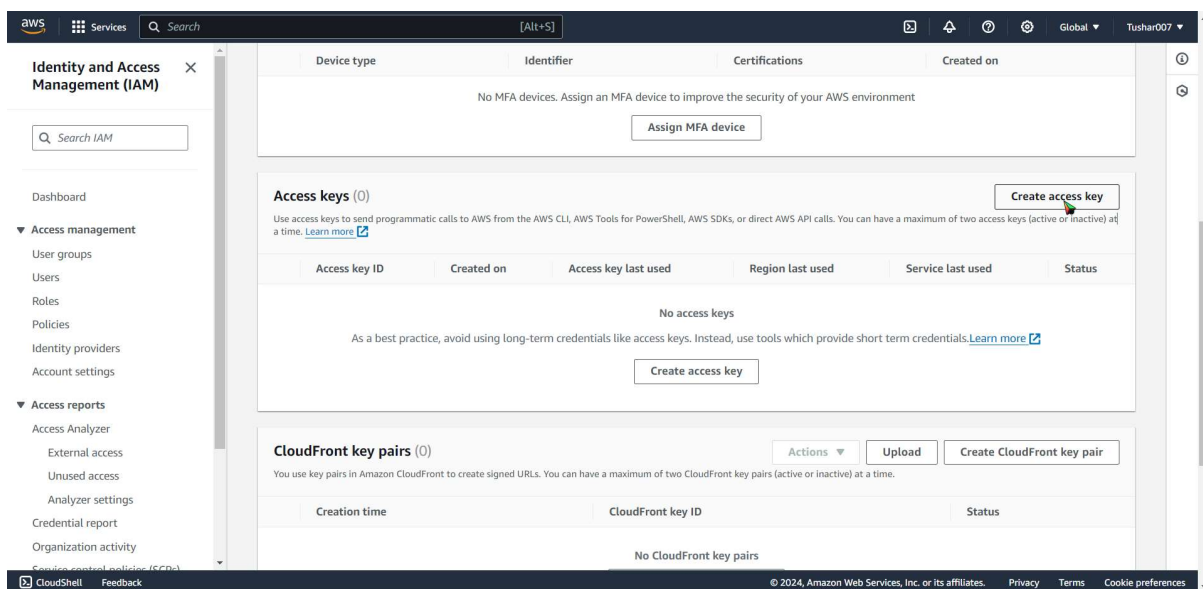
```
You have not yet set up your credentials or your credentials are incorrect
You must provide your credentials.
(aws-access-id):
```

» 7. Go to AWS account and press create access key to generate the id:

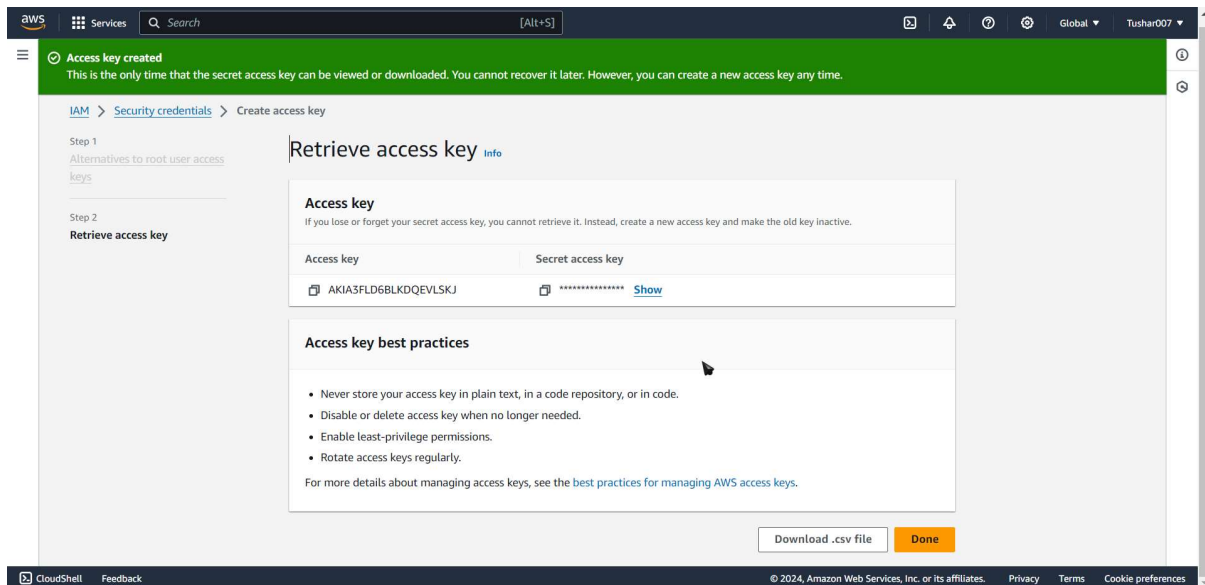
Go to your account Security Credentials



Then scroll down and hit create access key



» 8. After it gets generated enter it into our CLI :



```
You have not yet set up your credentials or your credentials are incorrect
You must provide your credentials.
(aws-access-id): AKIA3FLD6BLKDQEVLSKJ
(aws-secret-key): /oZlw830xkSVa+ENe+btHZNqxdkNpdzCLc/swIFK
```

» 9. Feel other details as it appers :

```
Select an application to use
1) Tushar_Prac_3
2) [ Create new Application ]
(default is 2): 2

Enter Application Name
(default is "Practical-3"): Tushar-App-eb
Application Tushar-App-eb has been created.

It appears you are using Node.js. Is this correct?
(Y/n): y
Select a platform branch.
1) Node.js 20 running on 64bit Amazon Linux 2023
2) Node.js 18 running on 64bit Amazon Linux 2023
3) Node.js 18 running on 64bit Amazon Linux 2
4) Node.js 16 running on 64bit Amazon Linux 2 (Deprecated)
5) Node.js 14 running on 64bit Amazon Linux 2 (Deprecated)
(default is 1):

Do you wish to continue with CodeCommit? (Y/n):
```


» 10. This shows that our Application is created :

```

Cannot setup CodeCommit because there is no Source Control setup, continuing with initialization
Do you want to set up SSH for your instances?
(Y/n): y

Select a keypair.
1) aws-eb
2) aws-eb2
3) [ Create new KeyPair ]
(default is 2): 3

Type a keypair name.
(Default is aws-eb3): aws-eb3
Generating public/private rsa key pair.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in C:\Users\Tushar\.ssh\aws-eb3
Your public key has been saved in C:\Users\Tushar\.ssh\aws-eb3.pub
The key fingerprint is:
SHA256:U/2ddC6660YJ2ooMbsQ0R0WU9Q84XejzVj5z1+uxYak aws-eb3
The key's randomart image is:
+---[RSA 3072]-----+
|      .oo.  .  .      |
|      o  +.o      |
|      .  o.= .  .  .  |
|      .  o+o .ooo|
|      o   So +.+o.+  |
|      . =   ... =.+.= |
|      * o . . o. 0o  |
|      + o . . .o.+  |
|      .      o+E.o  |
+-----[SHA256]-----+
Enter passphrase:
WARNING: Uploaded SSH public key for "aws-eb3" into EC2 for region ap-south-1.

```

The screenshot shows the AWS Elastic Beanstalk console. On the left, there's a sidebar with 'Elastic Beanstalk' and a list of 'Recent environments' including 'Practical-3', 'TusharPrac3-env', 'Tushar-APP-EB-dev2', 'TusharPractical2-env', and 'TusharP1NEW-env'. The main area displays 'Applications (1) info' with a table listing the application 'Tushar-EB-APP-V1' and its environment 'Practical-3'. The table also shows the 'Date created' and 'Last modified' timestamps as 'February 10, 2024 09:46:29 (UT...)'. A 'Create application' button is visible in the top right corner of the application list.

Application name	Environments	Date created	Last modified	AR
Tushar-EB-APP-V1	Practical-3	February 10, 2024 09:46:29 (UT...)	February 10, 2024 09:46:29 (UT...)	

➤ 11. Now we have to create environment using command eb create (name):

Command: `eb create Practical-3`

```
PowerShell
> pwsh Practical-3 46s 729ms
>> eb create Practical-3
Creating application version archive "app-240210_094932447564".
Uploading: [#####] 100% Done...
Environment details for: Practical-3
  Application name: Tushar-EB-APP-V1
  Region: ap-south-1
  Deployed Version: app-240210_094932447564
  Environment ID: e-yybzdsqahi
  Platform: arn:aws:elasticbeanstalk:ap-south-1::platform/Node.js 20 running on 64bit Amazon Linux 2023/6.1.0
  Tier: WebServer-Standard-1.0
  CNAME: UNKNOWN
  Updated: 2024-02-10 04:19:42.529000+00:00
Printing Status:
2024-02-10 04:19:41 INFO createEnvironment is starting.
2024-02-10 04:19:42 INFO Using elasticbeanstalk-ap-south-1-767398120148 as Amazon S3 storage bucket for environmen
t data.
2024-02-10 04:20:02 INFO Created security group named: sg-053d8a006fdf2b170
2024-02-10 04:20:18 INFO Created security group named: awseb-e-yybzdsqahi-stack-AWSEBSecurityGroup-18TS0DQTR7267
2024-02-10 04:20:18 INFO Created target group named: arn:aws:elasticloadbalancing:ap-south-1:767398120148:targetgr
oup/awseb-AWSEB-KCTJXLNNEKAW/adf7ce31d0774310
2024-02-10 04:20:18 INFO Created Auto Scaling launch configuration named: awseb-e-yybzdsqahi-stack-AWSEBAutoScalin
gLaunchConfiguration-QmbWLvXB0uXU
2024-02-10 04:20:33 INFO Created Auto Scaling group named: awseb-e-yybzdsqahi-stack-AWSEBAutoScalingGroup-5zyzQ0pZ
sviQ
2024-02-10 04:20:33 INFO Waiting for EC2 instances to launch. This may take a few minutes.
2024-02-10 04:20:49 INFO Created Auto Scaling group policy named: arn:aws:autoscaling:ap-south-1:767398120148:scal
ingPolicy:0863fccd-b74a-4a15-b08a-77764a4b8192:autoScalingGroupName/awseb-e-yybzdsqahi-stack-AWSEBAutoScalingGroup-5zyzQ
0pZsviQ:policyName/awseb-e-yybzdsqahi-stack-AWSEBAutoScalingScaleDownPolicy-NWu0rTFT7Bo6
2024-02-10 04:20:49 INFO Created Auto Scaling group policy named: arn:aws:autoscaling:ap-south-1:767398120148:scal
```

```
PowerShell
2024-02-10 04:19:42 INFO Using elasticbeanstalk-ap-south-1-767398120148 as Amazon S3 storage bucket for environmen
t data.
2024-02-10 04:20:02 INFO Created security group named: sg-053d8a006fdf2b170
2024-02-10 04:20:18 INFO Created security group named: awseb-e-yybzdsqahi-stack-AWSEBSecurityGroup-18TS0DQTR7267
2024-02-10 04:20:18 INFO Created target group named: arn:aws:elasticloadbalancing:ap-south-1:767398120148:targetgr
oup/awseb-AWSEB-KCTJXLNNEKAW/adf7ce31d0774310
2024-02-10 04:20:18 INFO Created Auto Scaling launch configuration named: awseb-e-yybzdsqahi-stack-AWSEBAutoScalin
gLaunchConfiguration-QmbWLvXB0uXU
2024-02-10 04:20:33 INFO Created Auto Scaling group named: awseb-e-yybzdsqahi-stack-AWSEBAutoScalingGroup-5zyzQ0pZ
sviQ
2024-02-10 04:20:33 INFO Waiting for EC2 instances to launch. This may take a few minutes.
2024-02-10 04:20:49 INFO Created Auto Scaling group policy named: arn:aws:autoscaling:ap-south-1:767398120148:scal
ingPolicy:0863fccd-b74a-4a15-b08a-77764a4b8192:autoScalingGroupName/awseb-e-yybzdsqahi-stack-AWSEBAutoScalingGroup-5zyzQ
0pZsviQ:policyName/awseb-e-yybzdsqahi-stack-AWSEBAutoScalingScaleDownPolicy-NWu0rTFT7Bo6
2024-02-10 04:20:49 INFO Created Auto Scaling group policy named: arn:aws:autoscaling:ap-south-1:767398120148:scal
ingPolicy:e64ec212-d45d-438a-acae-458eb682e2a7:autoScalingGroupName/awseb-e-yybzdsqahi-stack-AWSEBAutoScalingGroup-5zyzQ
0pZsviQ:policyName/awseb-e-yybzdsqahi-stack-AWSEBAutoScalingScaleUpPolicy-BoYYLkdzljtf
2024-02-10 04:20:49 INFO Created CloudWatch alarm named: awseb-e-yybzdsqahi-stack-AWSEBCloudwatchAlarmLow-lgRVUNXe
HJ4s
2024-02-10 04:20:49 INFO Created CloudWatch alarm named: awseb-e-yybzdsqahi-stack-AWSEBCloudwatchAlarmHigh-QYSKJH8
B9VPi
2024-02-10 04:22:39 INFO Created load balancer named: arn:aws:elasticloadbalancing:ap-south-1:767398120148:loadbal
ancer/app/awseb--AWSEB-2Uj0d2N4YM7v/7eb838663a5821d2
2024-02-10 04:22:39 INFO Created CloudWatch listener named: arn:aws:elasticloadbalancing:ap-south-1:76739812014
8:listener/app/awseb--AWSEB-2Uj0d2N4YM7v/7eb838663a5821d2/ae3d0f00a8b00e53
2024-02-10 04:22:48 INFO Instance deployment completed successfully.
2024-02-10 04:23:52 INFO Successfully launched environment: Practical-3
>>
```

➡ **That's it I finally deployed my Node-js application to AWS Elastic Beanstalk (EB) using the EB CLI (Command Line Interface).**

» Output of my node-js application(Personal Protfolio) :

