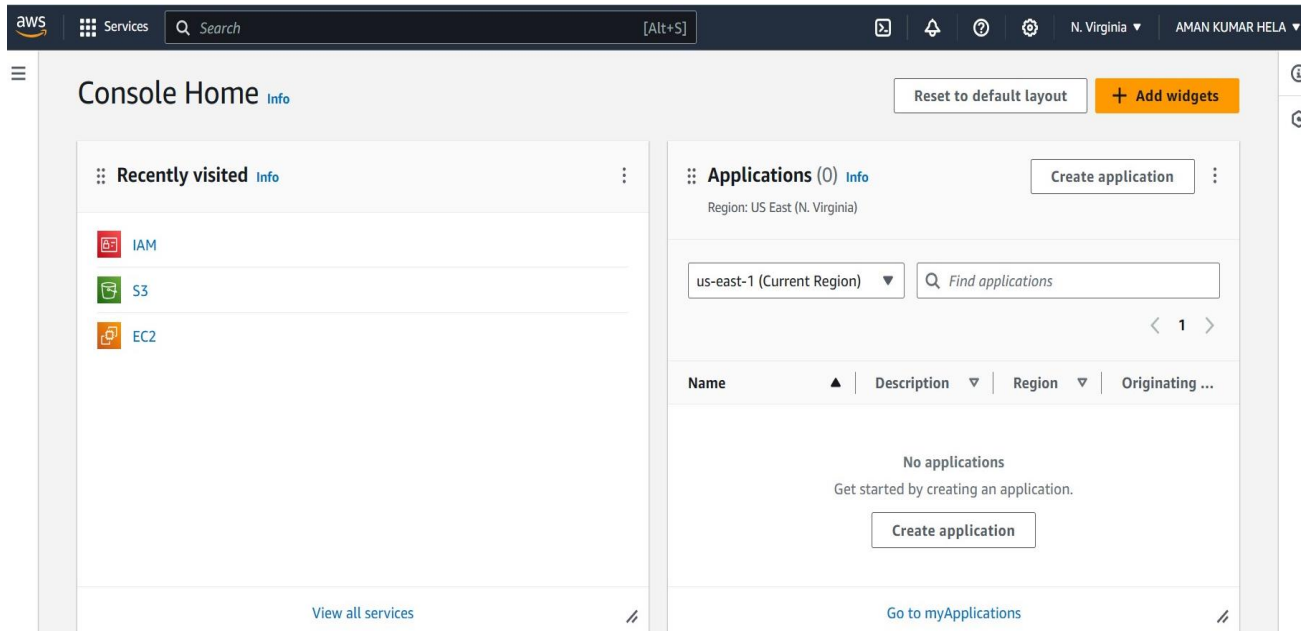


## **Assignment No.: 10**

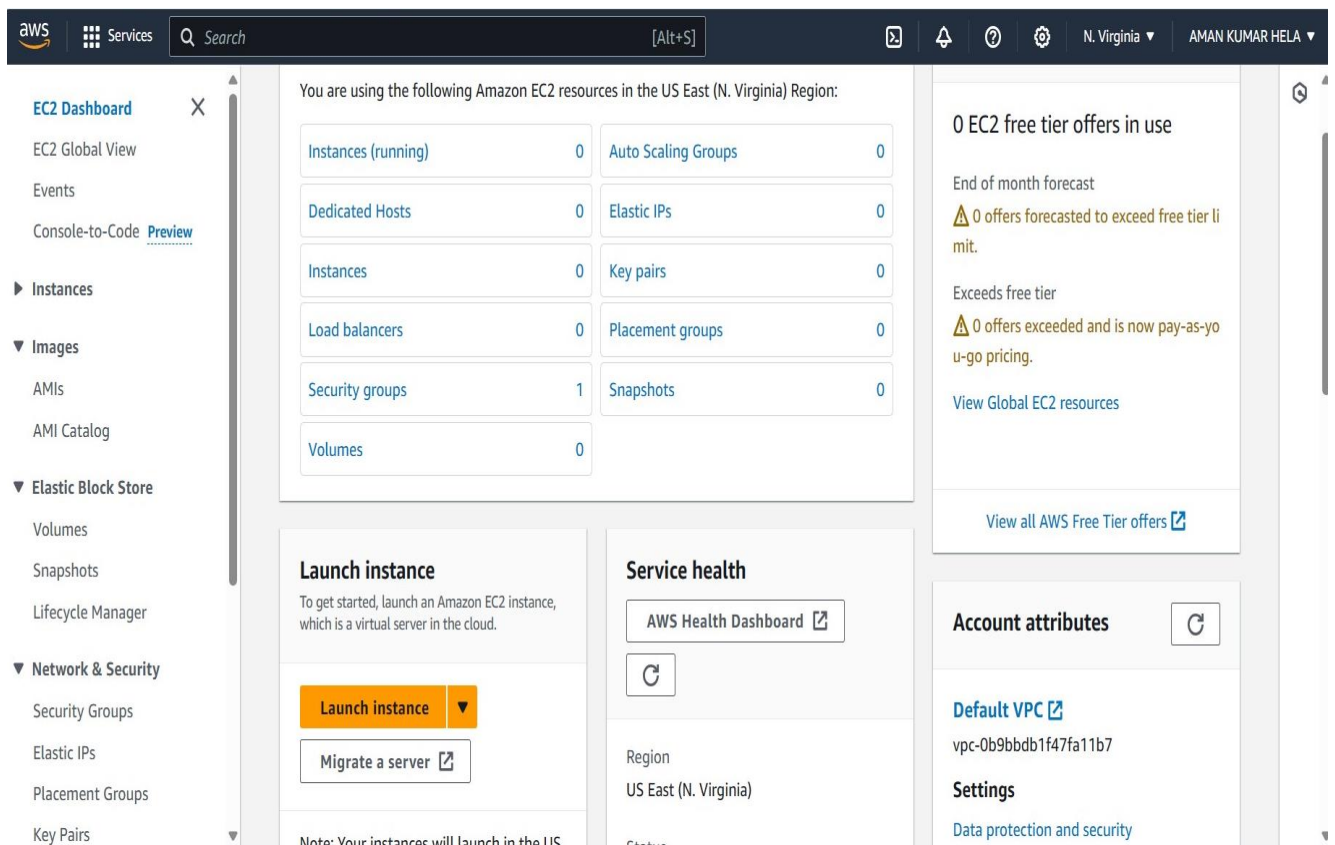
### **Problem Statement:**

Deploy a project from GitHub to EC2 by creating a new security group and user data.

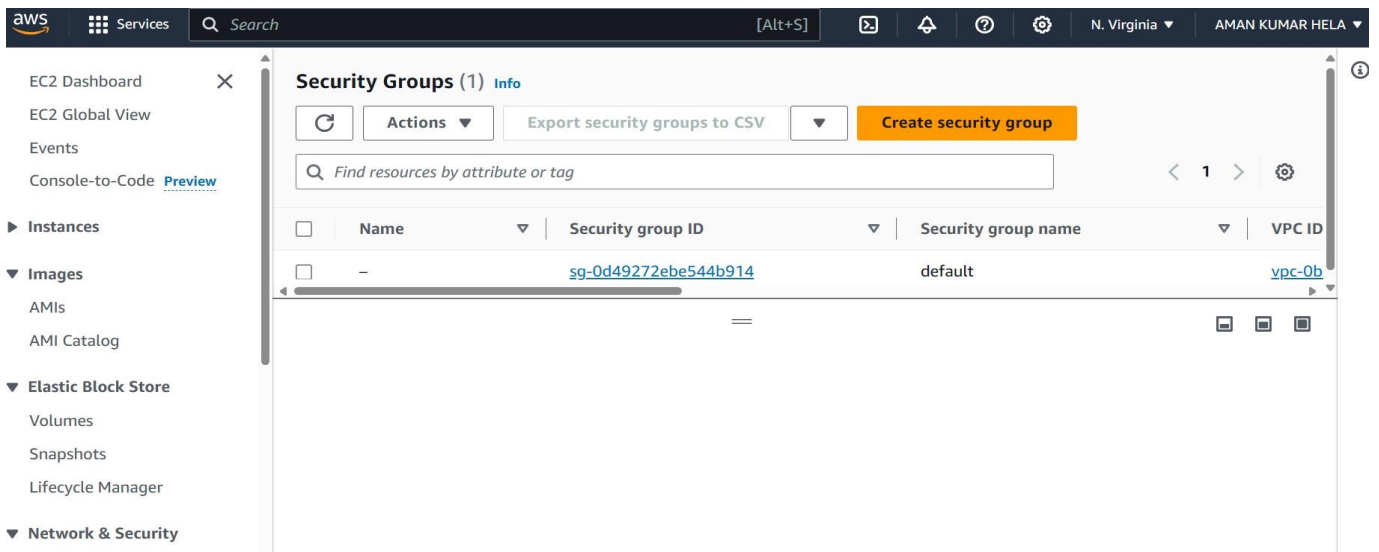
**Procedure:** 1. Access your AWS console and search for EC2, then proceed to click on the first option.



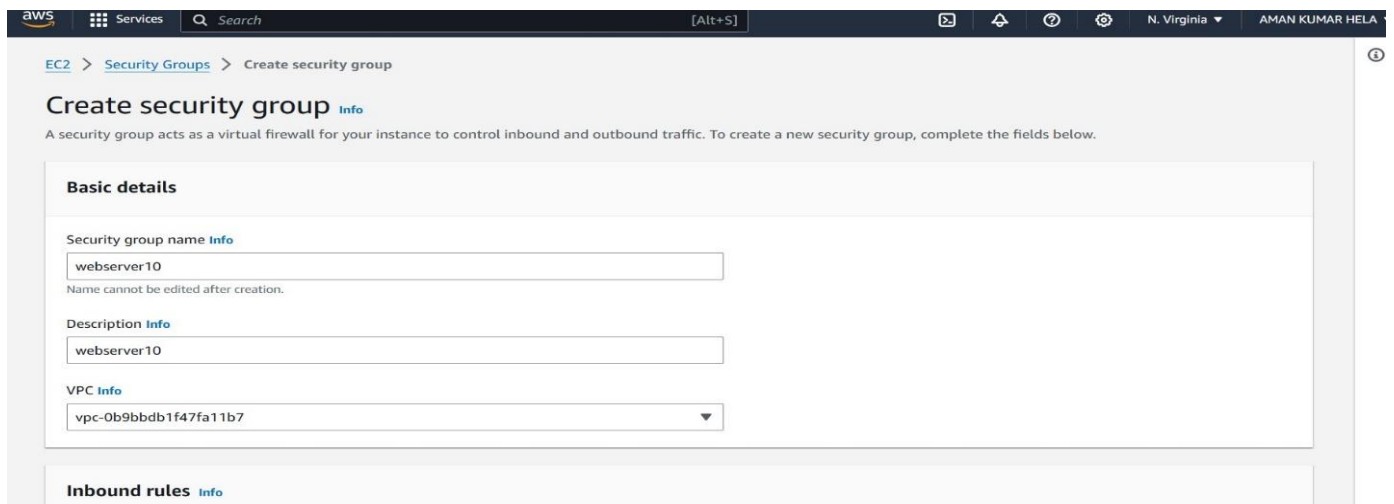
2. Now, Click on "Security Groups".



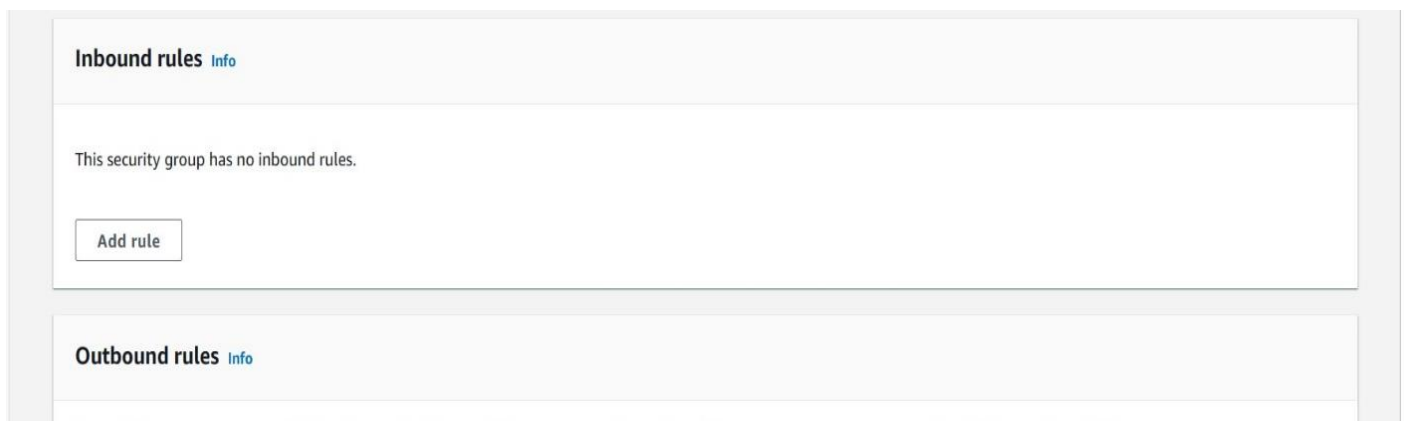
3. Now click on “Create security Group”.



4. Fill up the name and description of the security group.



5. Now, scroll down to Inbound Rules and click on “Add rule”



6. Set the port number as 4000 and select first option in CIDR blocks i.e. “0.0.0.0/0” .

Description [Info](#)

webserver10

VPC [Info](#)

vpc-0b9bbdb1f47fa11b7

**Inbound rules** [Info](#)

Type <a href="#">Info</a>	Protocol <a href="#">Info</a>	Port range <a href="#">Info</a>	Source <a href="#">Info</a>
Custom TCP ▼	TCP	4000	Cus... ▼

Q |

0.0.0.0/0

0.0.0.0/8

0.0.0.0/16

0.0.0.0/24

0.0.0.0/32

::/0

::/16

::/32

::/48

::/64

Delete

Add rule

7. Click on “Add rule” again and set type as “SSH” and select first option in CIDR blocks. Repeat this two more times and add rules of type “HTTP” and “HTTPS”.

aws Services Search [Alt+S]

N. Virginia AMAN KUMAR HELA

**Inbound rules** [Info](#)

Type <a href="#">Info</a>	Protocol <a href="#">Info</a>	Port range <a href="#">Info</a>	Source <a href="#">Info</a>	Description - optional <a href="#">Info</a>
Custom TCP ▼	TCP	4000	An... ▼	Q 0.0.0.0/0
				0.0.0.0/0 X
SSH ▼	TCP	22	An... ▼	Q
				0.0.0.0/0 X
HTTP ▼	TCP	80	An... ▼	Q
				0.0.0.0/0 X
HTTPS ▼	TCP	443	An... ▼	Q
				0.0.0.0/0 X

Add rule

8. Click on “Create security group”.

The screenshot shows the AWS Management Console interface for creating a new security group. The top navigation bar includes the AWS logo, 'Services' menu, a search bar, and user information (N. Virginia, AMAN KUMAR HELA). The main content area is titled 'Info' and contains a form for defining the security group rules. The 'Traffic type' dropdown is set to 'All traffic'. There are two 'All' buttons for source and destination. The 'Cus...' dropdown is partially visible. A search bar contains '0.0.0.0/0' with a close button. A 'Delete' button is on the right. An 'Add rule' button is at the bottom left. A yellow warning banner states: 'Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.' Below this is a section for 'Tags - optional' with a description and a button to 'Add new tag'. At the bottom right are 'Cancel' and 'Create security group' buttons.

Info

All traffic ▼ All All Cus... ▼ Q 0.0.0.0/0 X Delete

Add rule

Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

**Tags - optional**  
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

No tags associated with the resource.

Add new tag  
You can add up to 50 more tags

Cancel Create security group

9. Now, go to EC2 dashboard and click on “Launch instance”.

The screenshot shows the AWS Management Console interface for the EC2 dashboard. The left sidebar contains a navigation menu with 'EC2 Dashboard' selected, and links to 'EC2 Global View', 'Events', 'Console-to-Code', 'Instances', 'Images', 'AMIs', 'AMI Catalog', 'Elastic Block Store', 'Volumes', 'Snapshots', 'Lifecycle Manager', 'Network & Security', 'Security Groups', 'Elastic IPs', 'Placement Groups', and 'Key Pairs'. The main content area is titled 'Resources' and shows a table of EC2 resources in the US East (N. Virginia) Region. The table includes columns for 'Instances (running)', 'Auto Scaling Groups', 'Dedicated Hosts', 'Elastic IPs', 'Instances', 'Key pairs', 'Load balancers', 'Placement groups', 'Security groups', 'Snapshots', and 'Volumes'. The 'Security groups' column shows a count of 1. Below the table is a 'Launch instance' section with a 'Launch instance' button and a 'Migrate a server' button. To the right of the 'Launch instance' section is a 'Service health' section showing the status of the EC2 service in the US East (N. Virginia) Region. The status is 'This service is operating normally.' On the far right is an 'EC2 Free Tier' section showing that 0 free tier offers are in use. Below this is an 'Account attributes' section showing the default VPC ID.

EC2 Dashboard X

EC2 Global View

Events

Console-to-Code Preview

Instances

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Resources

EC2 Global view

You are using the following Amazon EC2 resources in the US East (N. Virginia) Region:

Instances (running)	0	Auto Scaling Groups	0	Dedicated Hosts	0
Elastic IPs	0	Instances	0	Key pairs	0
Load balancers	0	Placement groups	0	Security groups	1
Snapshots	0	Volumes	0		

**Launch instance**  
To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

Launch instance ▼

Migrate a server

Note: Your instances will launch in the US East

**Service health**  
AWS Health Dashboard

Region  
US East (N. Virginia)

Status  
This service is operating normally.

**EC2 Free Tier** Info  
Offers for all AWS Regions.

0 EC2 free tier offers in use

End of month forecast  
0 offers forecasted to exceed free tier limit.

Exceeds free tier  
0 offers exceeded and is now pay-as-you-go pricing.

View Global EC2 resources

View all AWS Free Tier offers

**Account attributes**

Default VPC  
vpc-0b9bbdb1f47fa11b7

10. Fill up the instance name and select Ubuntu as the AMI.

**Name and tags** [Info](#)

Name  
ass10 [Add additional tags](#)

**Application and OS Images (Amazon Machine Image)** [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

**Quick Start**

Amazon Linux macOS **Ubuntu** Windows Red Hat SUSE Li [Browse more AMIs](#)  
Including AMIs from AWS, Marketplace and the Community

**Summary**

Number of instances [Info](#)  
1

Software Image (AMI)  
Canonical, Ubuntu, 22.04 LTS, ...read more  
ami-080e1f13689e07408

Virtual server type (instance type)  
t2.micro

Firewall (security group)  
New security group

Storage (volumes)  
1 volume(s) - 8 GiB

Cancel [Launch instance](#) [Review commands](#)

11. Select an existing key pair or create a new one.

**Instance type**

t2.micro [Free tier eligible](#)

Family: t2 1 vCPU 1 GiB Memory Current generation: true  
On-Demand Windows base pricing: 0.0162 USD per Hour  
On-Demand SUSE base pricing: 0.0116 USD per Hour  
On-Demand RHEL base pricing: 0.0716 USD per Hour  
On-Demand Linux base pricing: 0.0116 USD per Hour

[Additional costs apply for AMIs with pre-installed software](#)

**Key pair (login)** [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required  
key10 [Create new key pair](#)

**Network settings** [Info](#) [Edit](#)

**Summary**

Number of instances [Info](#)  
1

Software Image (AMI)  
Canonical, Ubuntu, 22.04 LTS, ...read more  
ami-080e1f13689e07408

Virtual server type (instance type)  
t2.micro

Firewall (security group)  
New security group

Storage (volumes)  
1 volume(s) - 8 GiB

Cancel [Launch instance](#) [Review commands](#)

12. Now, select “Existing security group” and select the newly created security group.

The screenshot shows the AWS Management Console interface for launching an instance. The 'Firewall (security groups)' section is expanded, showing a list of security groups. The 'webserver10' security group is selected. The 'Summary' section on the right shows the configuration: 1 instance, Canonical Ubuntu 22.04 LTS AMI, t2.micro instance type, webserver10 security group, and 1 volume of 8 GiB. The 'Launch instance' button is highlighted.

13. Expand the “Advanced details” section.

The screenshot shows the AWS Management Console interface for launching an instance. The 'Advanced details' section is expanded, showing options for domain join directory, IAM instance profile, hostname type, DNS hostname, and instance auto-recovery. The 'Summary' section on the right shows the configuration: 1 instance, Canonical Ubuntu 22.04 LTS AMI, t2.micro instance type, webserver10 security group, and 1 volume of 8 GiB. The 'Launch instance' button is highlighted.

14. Scroll down to the “User data” section and the following script:

```
#!/bin/bash
```

```
apt-get update
```

```
apt-get install -y nginx
```

```
systemctl start nginx
```



**systemctl enable nginx**

**apt-get install -y git**

**curl -SL https://deb.nodesource.com/setup\_18.x|sudo -E bash -**

**apt-get install -y nodejs**

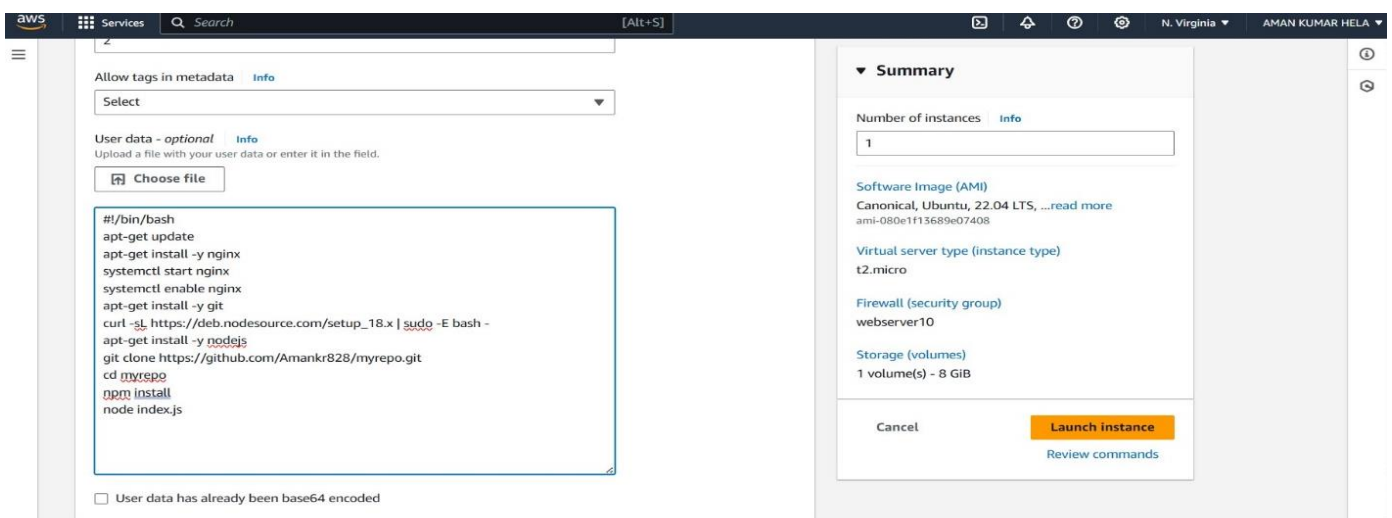
**git clone <github repository cloning link>**

**cd Repo1**

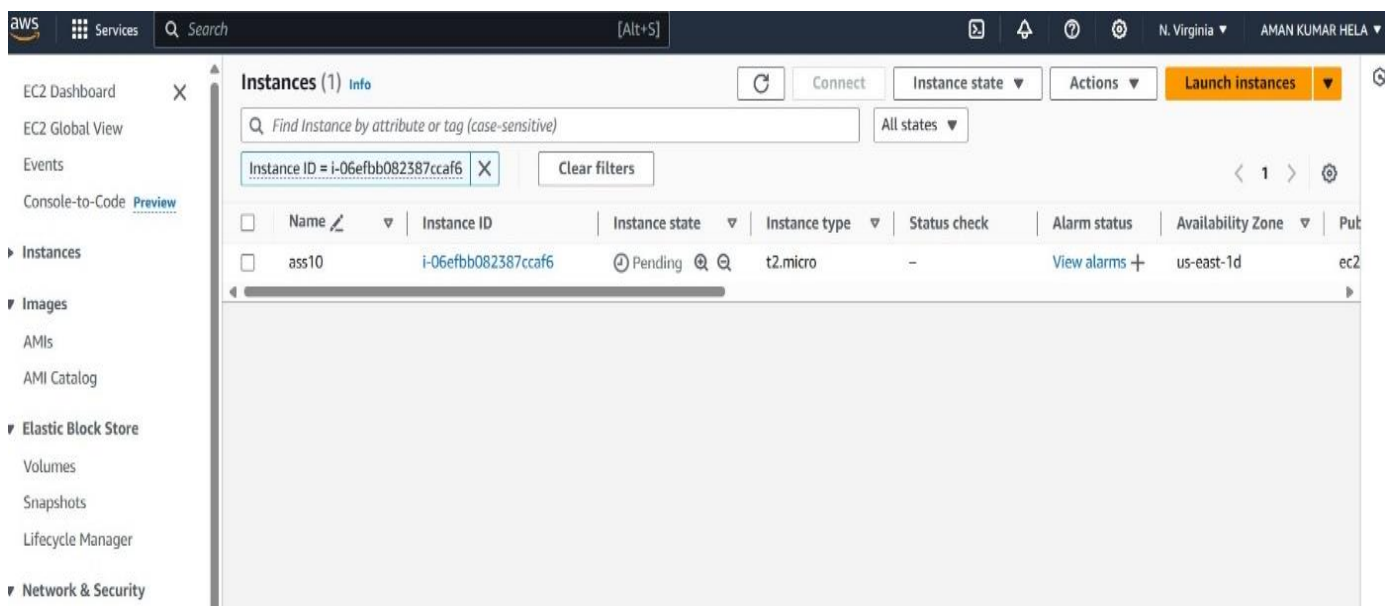
**npm install**

**node index.js**

15. Click on "Launch instance".



16. Now go to "Instances" and click on the instance id of the newly created instance.

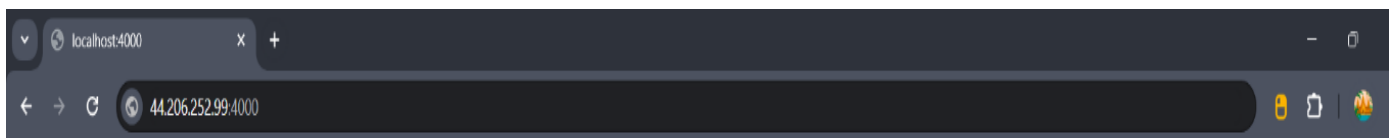


17. Copy the public IPv4 address.

The screenshot shows the AWS Management Console interface. The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Console-to-Code, and various services like Instances, Images, Elastic Block Store, and Network & Security. The main content area displays the 'Instance summary for i-06efbb082387ccaf6 (ass10)'. A tooltip is visible over the public IPv4 address '44.206.252.99', stating 'Public IPv4 address copied'. The instance is in a 'Running' state. Other details include the instance type 't2.micro', VPC ID 'vpc-0b9bbdb1f47fa11b7', and Subnet ID 'subnet-05dd1a4d4d2b32845'.

Property	Value
Instance ID	i-06efbb082387ccaf6 (ass10)
IPv4 address	44.206.252.99 [open address]
Instance state	Running
Private IP address	172.31.88.18
Public IPv4 DNS	ec2-44-206-252-99.compute-1.amazonaws.com [open address]
Private IP DNS name (IPv4 only)	ip-172-31-88-18.ec2.internal
Instance type	t2.micro
VPC ID	vpc-0b9bbdb1f47fa11b7
Subnet ID	subnet-05dd1a4d4d2b32845
Auto-assigned IP address	44.206.252.99 [Public IP]
Hostnames	IP name: ip-172-31-88-18.ec2.internal
Answer private resource DNS name	IPV4 (A)
IAM Role	-
IMDSv2	-

18. Open a new tab and paste the IPv4 address copied and add ":4000" to the end of it. This will display our intended website.



Hello , Aman