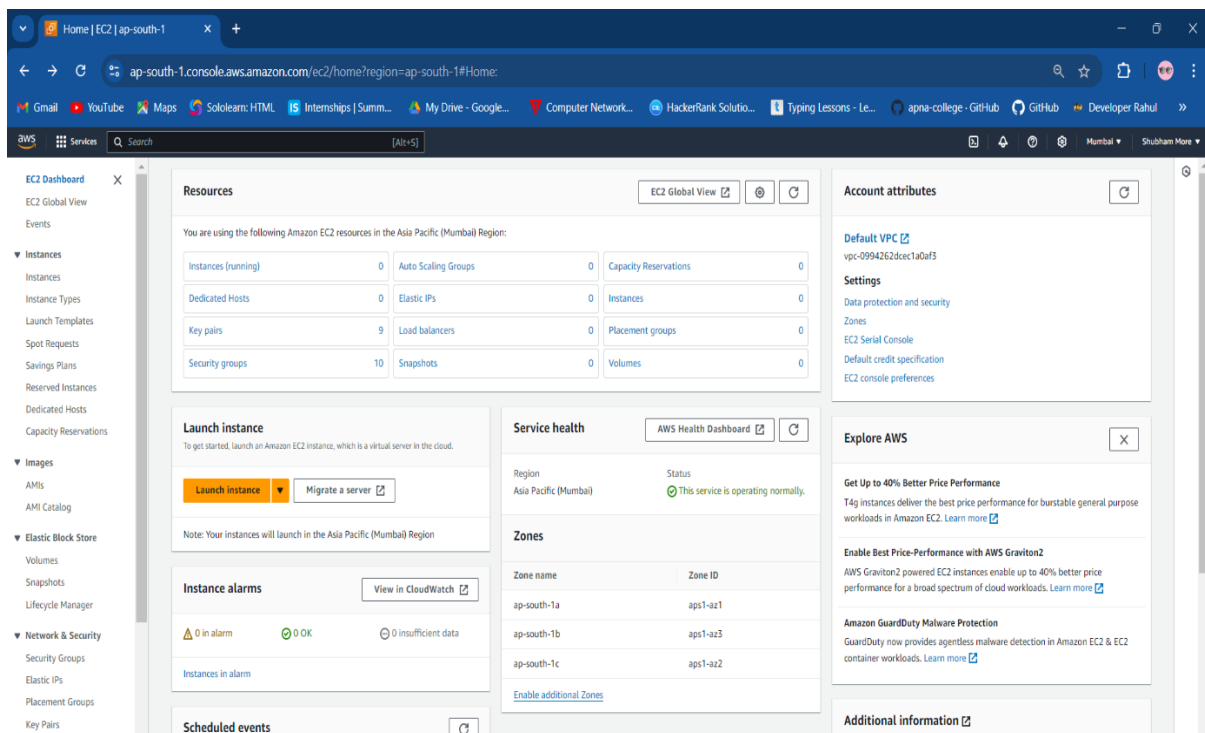


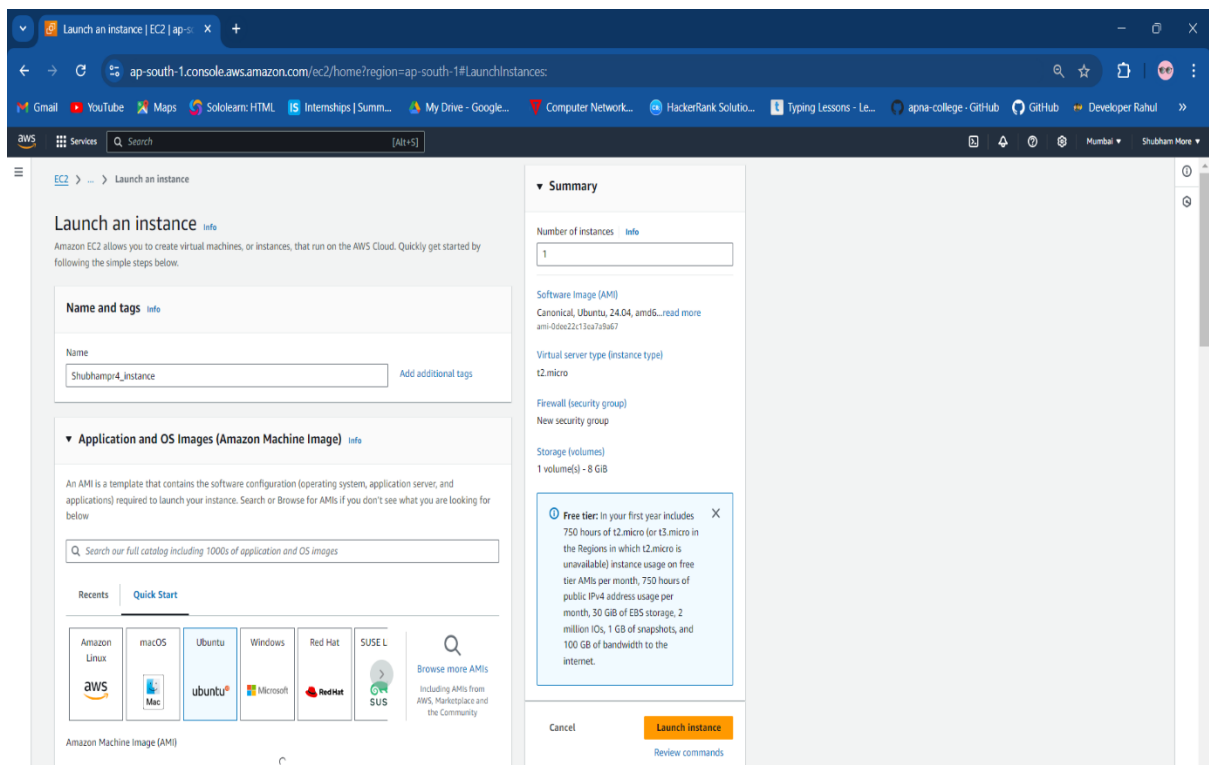
PRACTICAL – 4

Aim : To implement and configure AWS to deploy Python Program Application.

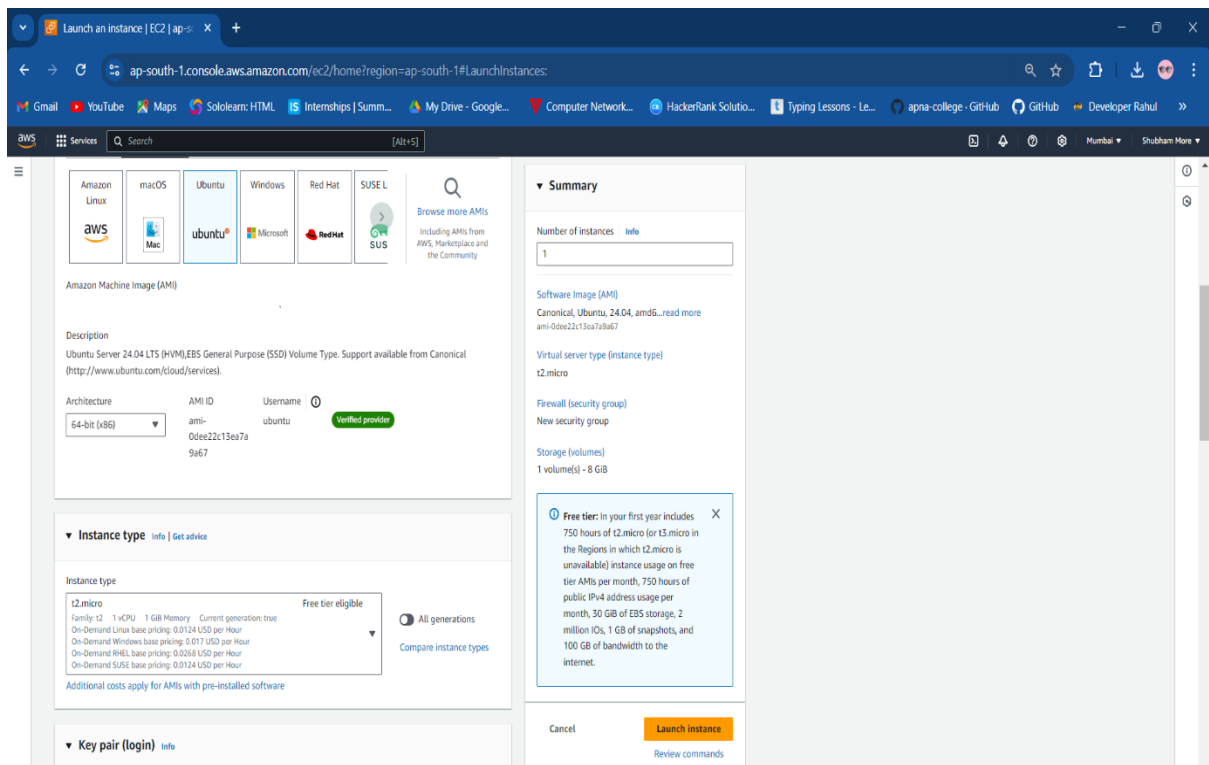
Step 1: First login to the AWS account using Email and Password. And now go to the EC2 service for creating the EC2 instance click on Launch instance.



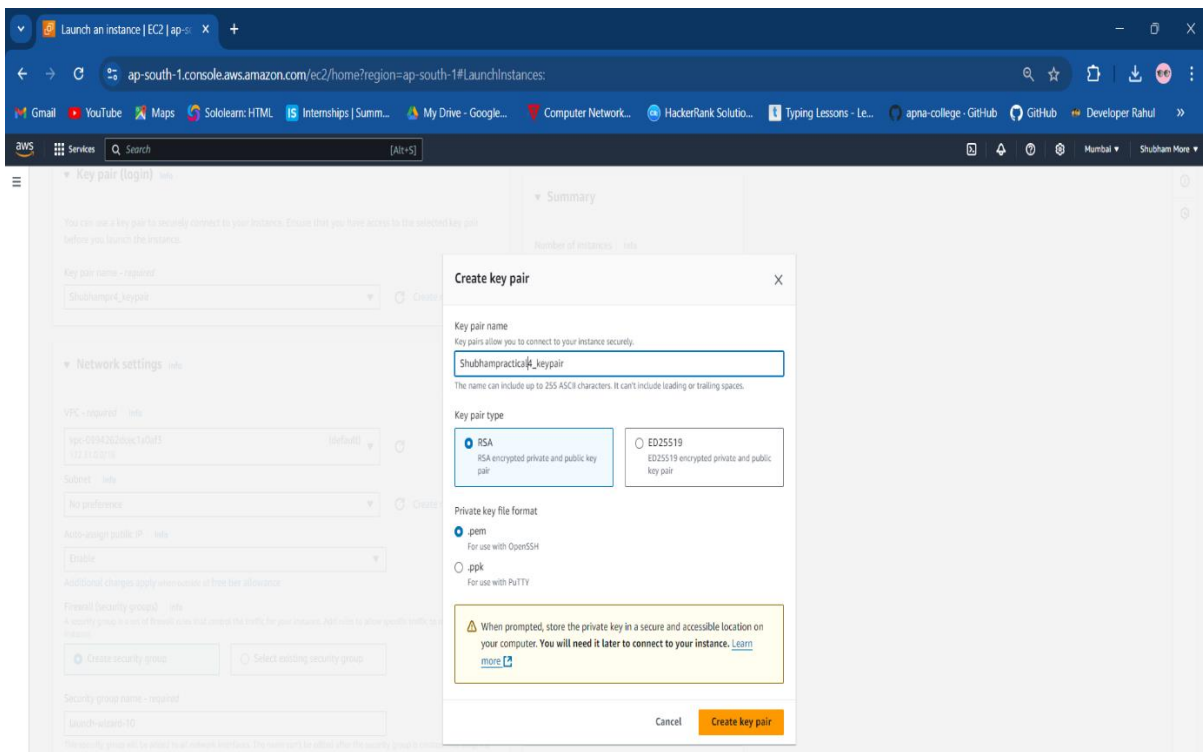
Step 2 : Now Give the unique name to the instance and select Ubuntu Operating system



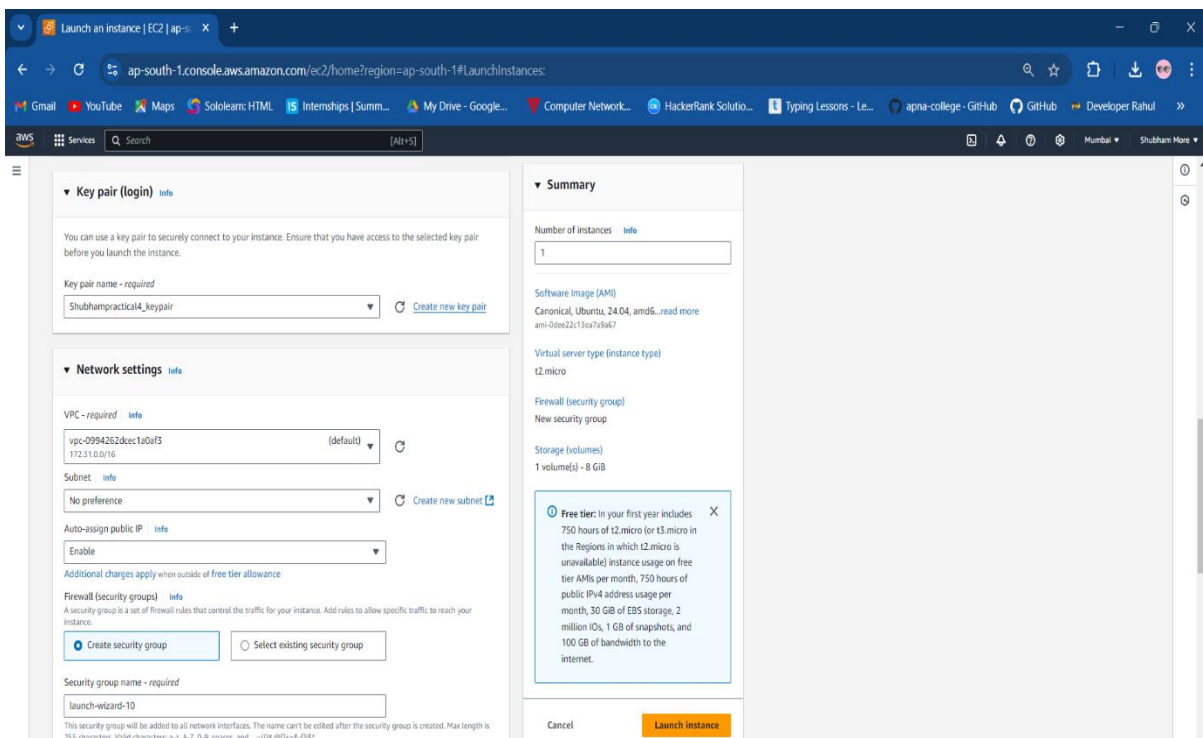
Step 3 : Now select OS and CPU to the instance. Make by default as it is.



Step 4 : Now create the key pair for the EC2 instance. Give name to the key pair and click on the select key pair type as RSA and file format as pem and click on the create key pair.



Step 5 : Now select that key pair which we have just created.



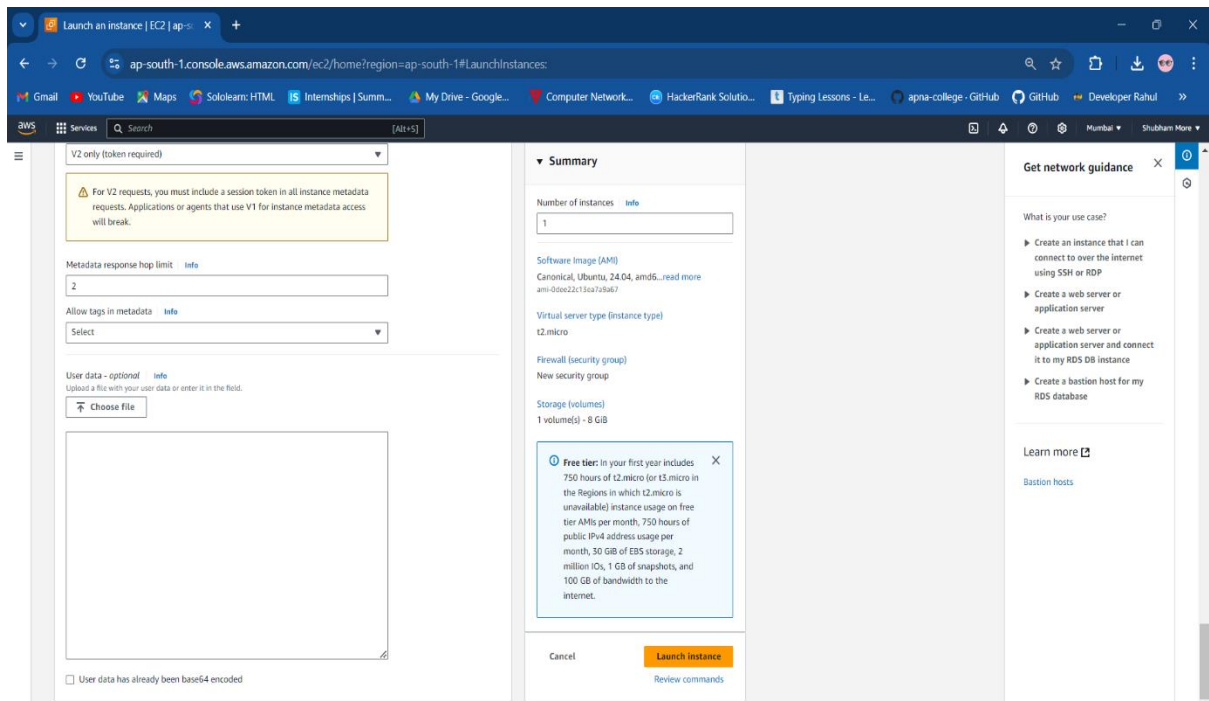
Step 6 : Now go to the network setting in that we have to make http and https port open to access the instance.

The screenshot shows the 'Launch an instance' page in the AWS Management Console, specifically the 'Network settings' tab. The 'VPC' is set to 'vpc-0994262dec1a0af3' (default). The 'Subnet' is 'No preference'. 'Auto-assign public IP' is set to 'Enable'. The 'Firewall (security groups)' section shows a new security group named 'launch-wizard-10' with a description 'launch-wizard-10 created 2024-10-05T03:39:48.141Z'. Under 'Inbound Security Group Rules', a rule is added for 'ssh' (Type), 'TCP' (Protocol), and '22' (Port range), with 'Source type' set to 'Custom'. The 'Summary' tab on the right shows 1 instance, Canonical Ubuntu 24.04 AMI, t2.micro instance type, and 8 GiB storage. A 'Free tier' notification is visible. The 'Launch instance' button is at the bottom right.

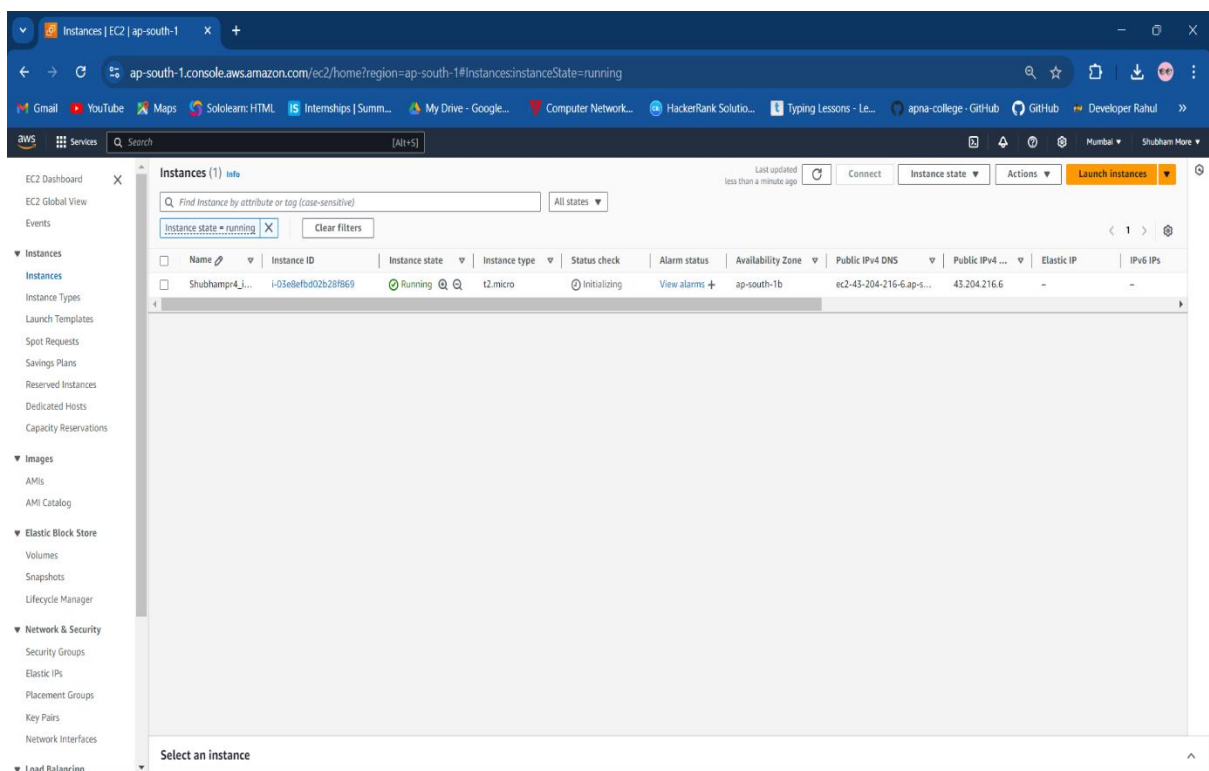
Step 7 : Now give the storage to the instance, make as it is.

The screenshot shows the 'Launch an instance' page in the AWS Management Console, specifically the 'Configure storage' tab. The 'Source type' is 'Custom' with a source of '0.0.0.0/0'. A warning message states: 'Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.' The 'Configure storage' section shows 1x 8 GiB gp3 volume as the root volume. A 'Free tier' notification is visible. The 'Summary' tab on the right shows 1 instance, Canonical Ubuntu 24.04 AMI, t2.micro instance type, and 8 GiB storage. The 'Launch instance' button is at the bottom right.

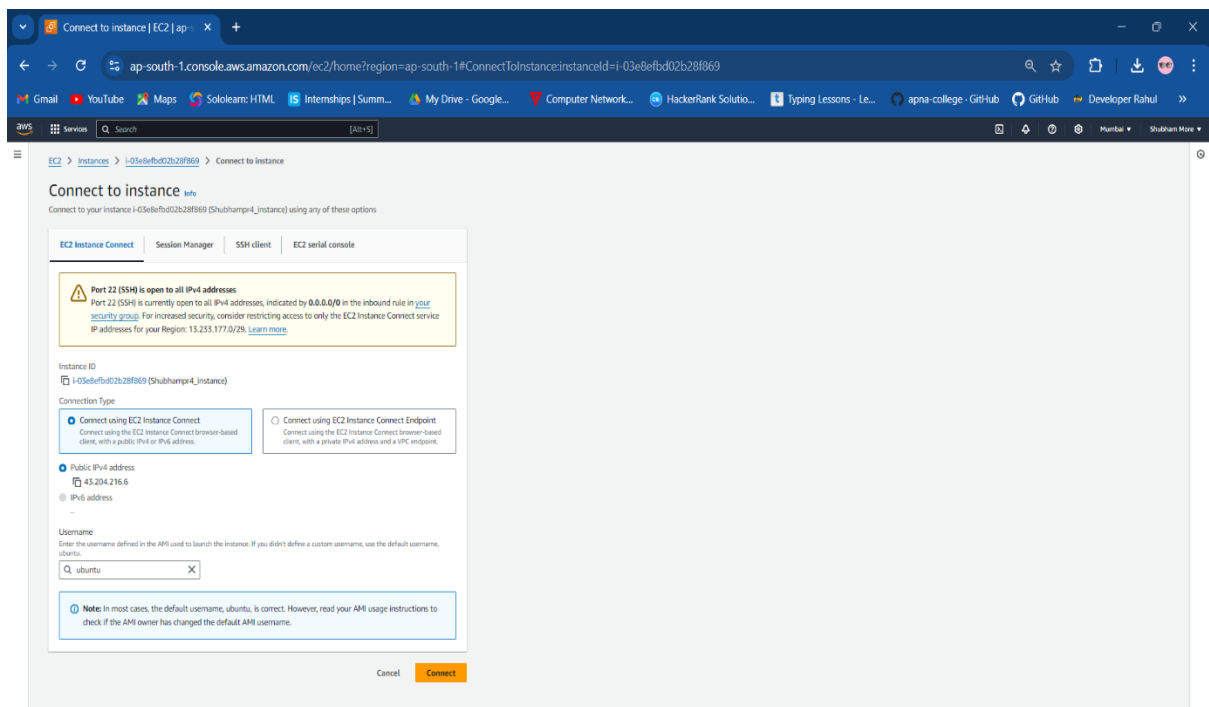
Step 8 : If you want to add some bootstrap script then add it to the user data if not then click on the Launch instance button.



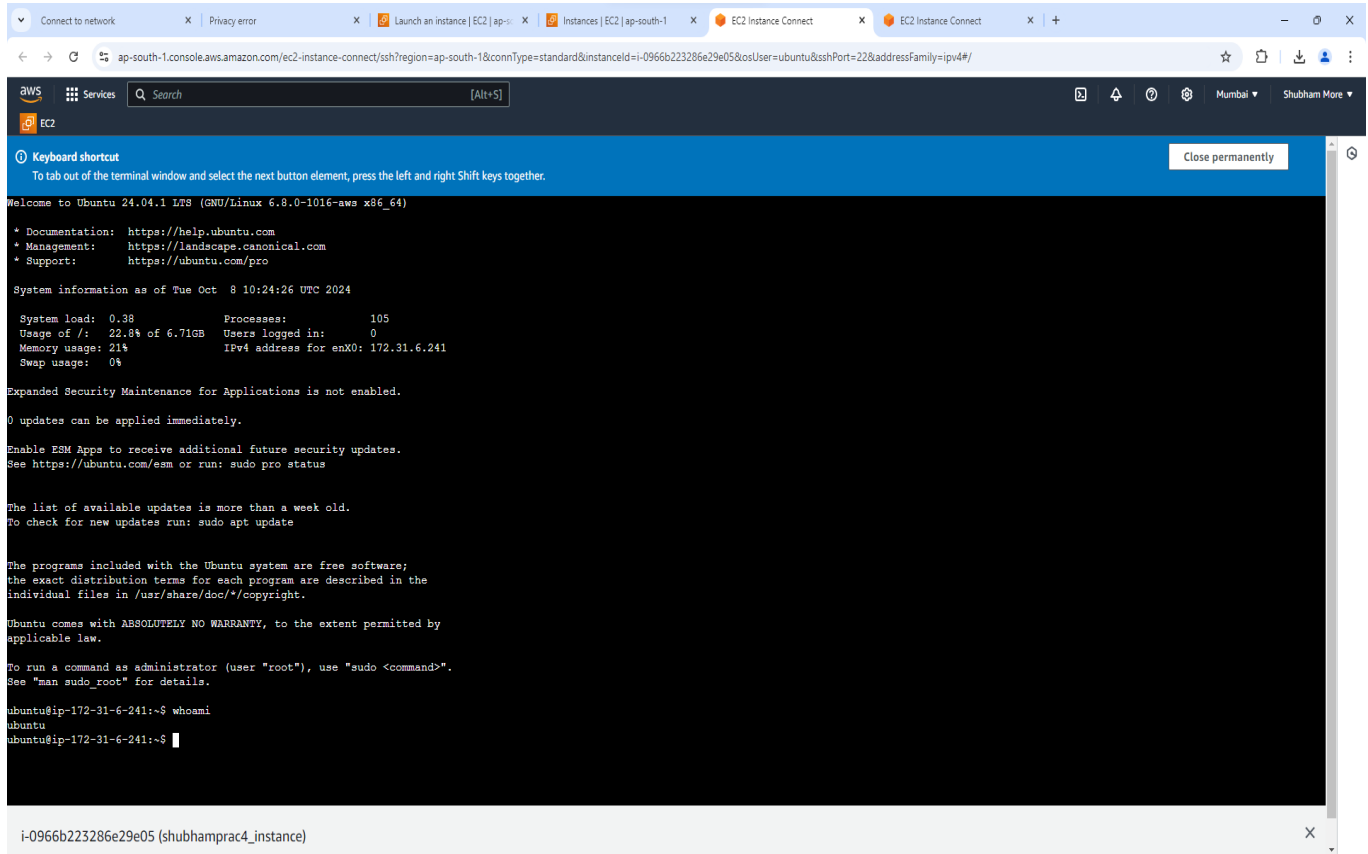
Step 9 : Now check for the instance is created or not.



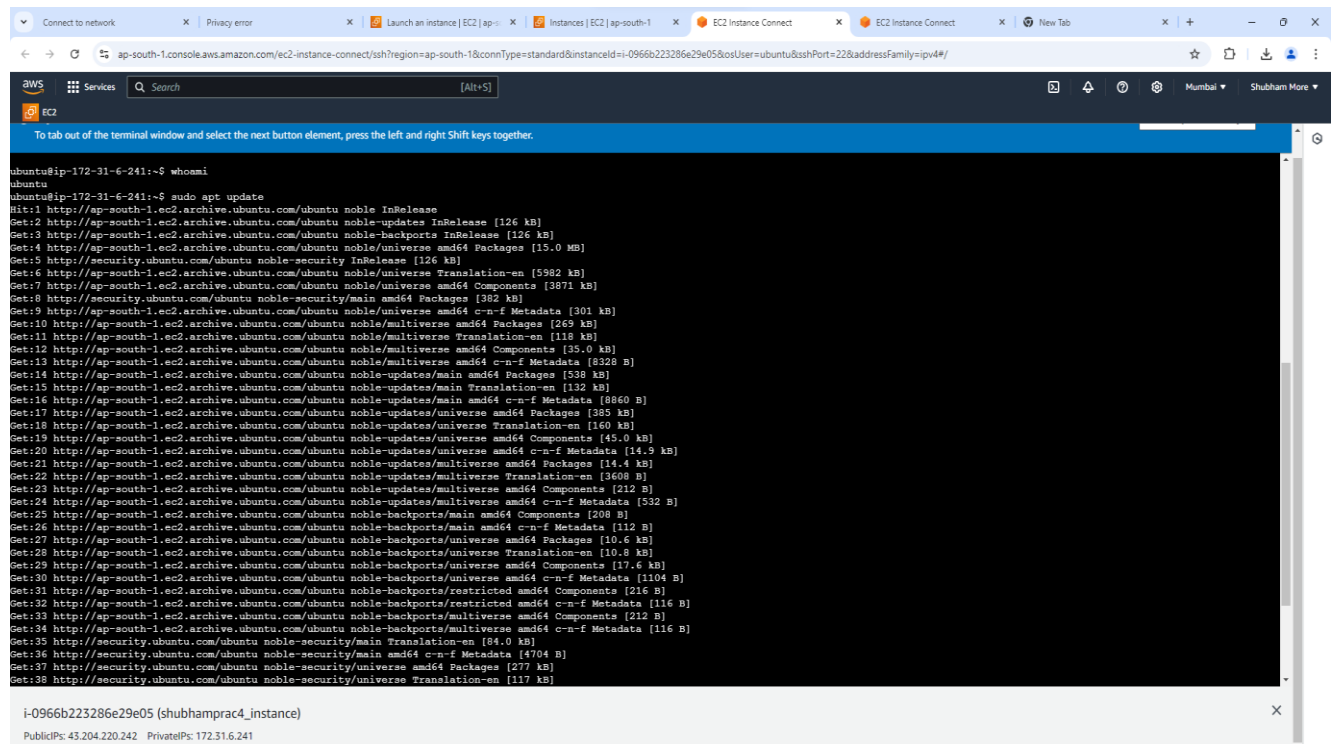
Step 10 : Now click on the connect button to connect EC2 instance.



Step 11 : Now show the terminal of our EC2 instance to see execute the command **whoami** it will show the instance name.

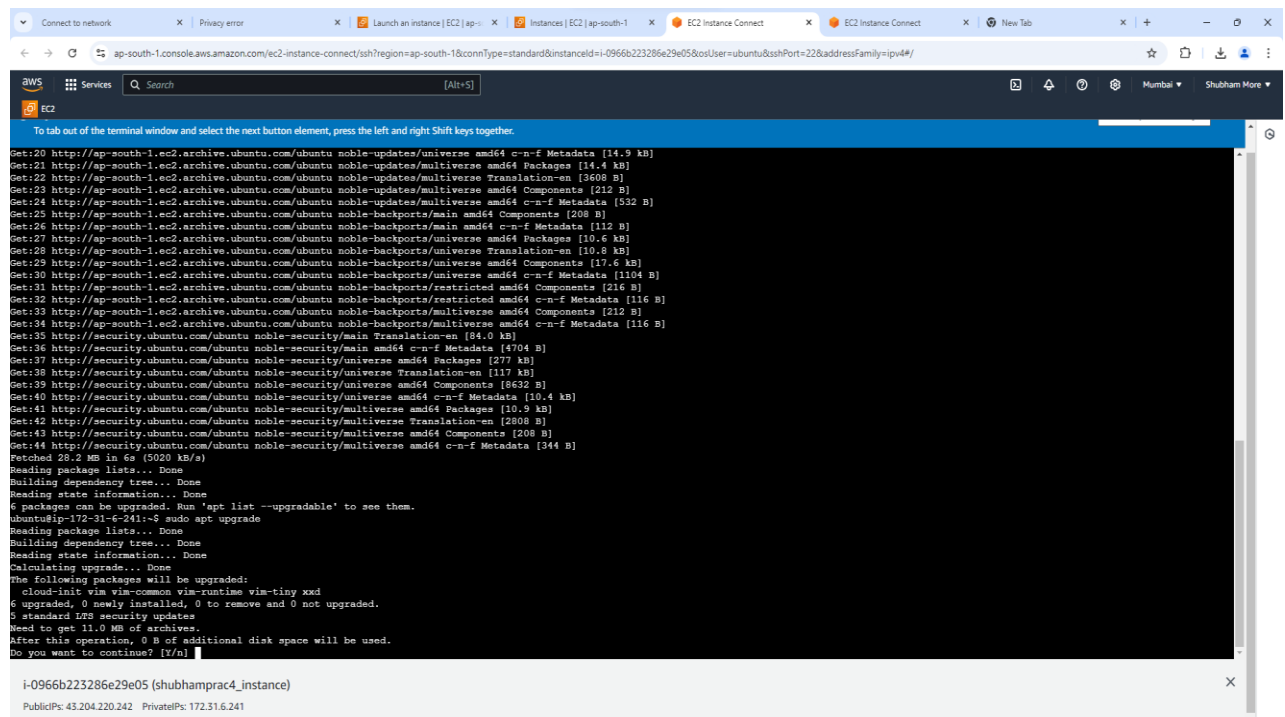


Step 12 : Use the following command to update your system before initiating a new installation **sudo apt update**



```
ubuntu@ip-172-31-6-241:~$ whoami
ubuntu
ubuntu@ip-172-31-6-241:~$ sudo apt update
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:5 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:6 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [382 kB]
Get:9 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:10 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:11 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:12 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:13 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [4328 B]
Get:14 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [538 kB]
Get:15 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [132 kB]
Get:16 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [8860 B]
Get:17 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [385 kB]
Get:18 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [160 kB]
Get:19 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [45.0 kB]
Get:20 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [14.9 kB]
Get:21 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [14.4 kB]
Get:22 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [3608 B]
Get:23 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [212 B]
Get:24 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [532 B]
Get:25 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]
Get:26 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [112 B]
Get:27 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [10.6 kB]
Get:28 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [10.8 kB]
Get:29 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [17.6 kB]
Get:30 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1104 B]
Get:31 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:32 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 c-n-f Metadata [116 B]
Get:33 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Get:34 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 c-n-f Metadata [116 B]
Get:35 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [84.0 kB]
Get:36 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [4704 B]
Get:37 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [277 kB]
Get:38 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [117 kB]
Get:39 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [8632 B]
Get:40 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [10.4 kB]
Get:41 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [10.9 kB]
Get:42 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [2808 B]
Get:43 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]
Get:44 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [344 B]
Fetched 28.2 MB in 6s (5020 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
6 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-6-241:~$ sudo apt update
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages will be upgraded:
  cloud-init vim vim-common vim-runtime vim-tiny xrd
6 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
5 standard LTS security updates
Need to get 11.0 MB of archives.
After this operation, 0 B of additional disk space will be used.
Do you want to continue? [Y/n]
```

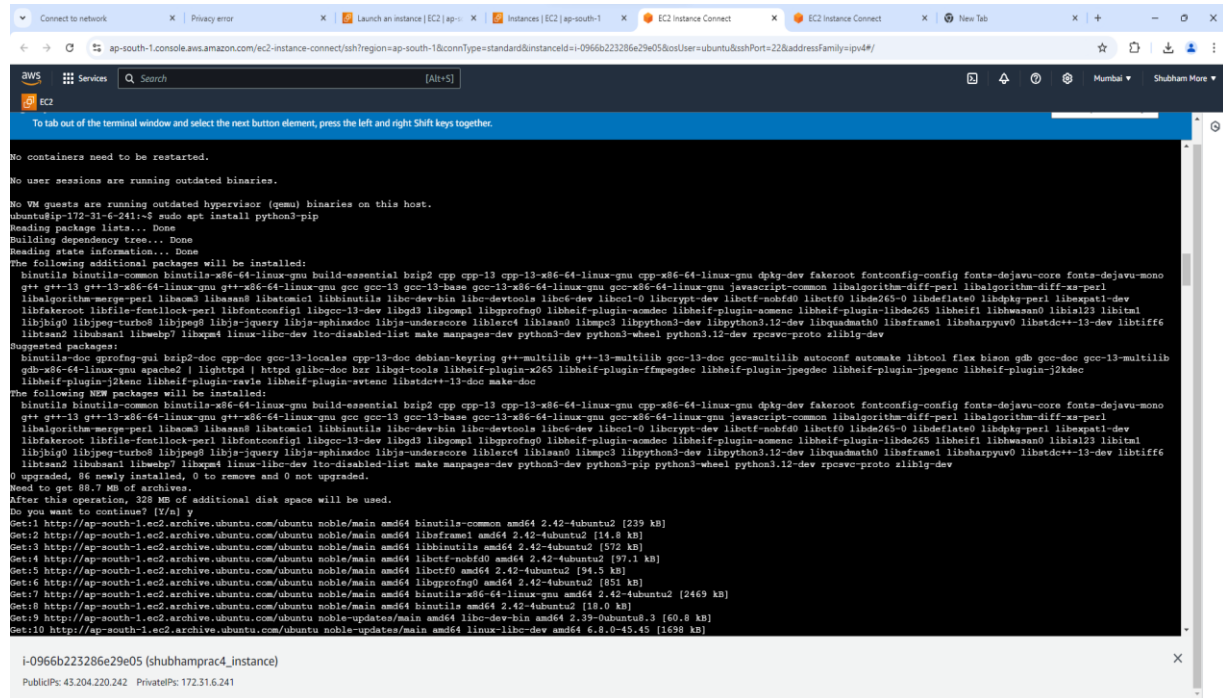
Step 13 : Now use following command to upgrade ubuntu and type y for confirmation. **sudo apt upgrade**



```
Get:20 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [14.9 kB]
Get:21 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [14.4 kB]
Get:22 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [3608 B]
Get:23 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [212 B]
Get:24 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [532 B]
Get:25 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]
Get:26 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [112 B]
Get:27 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [10.6 kB]
Get:28 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [10.8 kB]
Get:29 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [17.6 kB]
Get:30 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1104 B]
Get:31 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:32 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 c-n-f Metadata [116 B]
Get:33 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Get:34 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 c-n-f Metadata [116 B]
Get:35 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [84.0 kB]
Get:36 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [4704 B]
Get:37 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [277 kB]
Get:38 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [117 kB]
Get:39 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [8632 B]
Get:40 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [10.4 kB]
Get:41 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [10.9 kB]
Get:42 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [2808 B]
Get:43 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]
Get:44 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [344 B]
Fetched 28.2 MB in 6s (5020 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
6 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-6-241:~$ sudo apt upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages will be upgraded:
  cloud-init vim vim-common vim-runtime vim-tiny xrd
6 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
5 standard LTS security updates
Need to get 11.0 MB of archives.
After this operation, 0 B of additional disk space will be used.
Do you want to continue? [Y/n] y
```


Step 14 : Now to install Python3 in VM, use following command.

sudo apt install python3-pip



```
aws
Services
Search
[Alt+S]

To tab out of the terminal window and select the next button element, press the left and right Shift keys together.

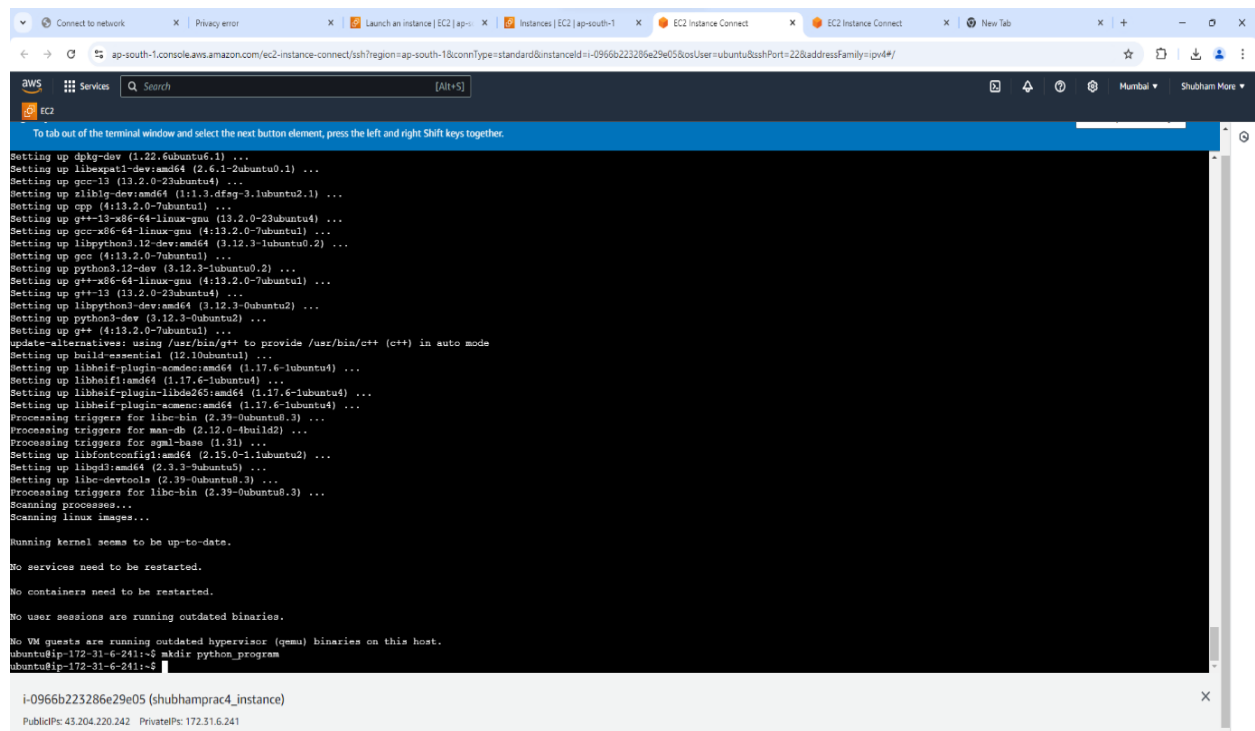
No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-6-241:~$ sudo apt install python3-pip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu build-essential bzip2 cpp gcc-13 gcc-13-base gcc-13-x86-64-linux-gnu gcc-x86-64-linux-gnu glibc-dev fakeroot fontconfig-config fonts-dejavu-core fonts-dejavu-mono
  g++-13 g++-13-x86-64-linux-gnu g++-x86-64-linux-gnu gcc gcc-13 gcc-13-base gcc-13-x86-64-linux-gnu gcc-x86-64-linux-gnu javascript-common libalgorithm-diff-perl libalgorithm-diff-xs-perl
  libalgorithm-merge-perl libasan8 libatomic1 libbinutils libc-dev-bin libc-devtools libc6-dev libcc1-0 libcrypt-dev libctf-nobfd0 libctf0 libde265-0 libdeflate0 libdpkg-perl libexpat1-dev
  libfakeroot libfile-fcntllock-perl libfontconfig1 libgcc-13-dev libgd3 libgomp1 libhogweed6 libidn2-0 libisl23 libitm1 libjbig0 libjpeg-turbo8 libjpeg9 libjs-jquery libjs-sphinxdoc libjs-underscore liblerc4 liblsan0 libmpc3 libpython3.12-dev libpython3.12-stdlib libquadmath0
  libseccomp2 libsepol1 libshim1 libslang2 libsqlite3-dev libstdc++-13-dev libsubunit-perl libtasn1-6 libtinfo6 libubsan1 libunistring2 libwrap0 libx11-xcb1 libxau6 libxcb1 libxext6 libxft2 libxml2 libxslt1.1 libzstd1
  make manpages-dev python3-dev python3-pip python3-wheel python3.12-dev rpcsvc-proto zlib1g-dev
Suggested packages:
  binutils-doc gprofng-gui bzip2-doc cpp-doc gcc-13-locales cpp-13-doc debconf debconf-i18n gcc-13-doc gcc-13-x86-64-linux-gnu-doc g++-13-doc g++-13-x86-64-linux-gnu-doc gcc-13-x86-64-linux-gnu-doc gcc-x86-64-linux-gnu-doc
  javascript-common libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan8 libatomic1 libbinutils libc-dev-bin libc-devtools libc6-dev libcc1-0 libcrypt-dev libctf-nobfd0 libctf0 libde265-0 libdeflate0 libdpkg-perl libexpat1-dev
  libfakeroot libfile-fcntllock-perl libfontconfig1 libgcc-13-dev libgd3 libgomp1 libhogweed6 libidn2-0 libisl23 libitm1 libjbig0 libjpeg-turbo8 libjpeg9 libjs-jquery libjs-sphinxdoc libjs-underscore liblerc4 liblsan0 libmpc3 libpython3.12-dev libpython3.12-stdlib libquadmath0
  libseccomp2 libsepol1 libshim1 libslang2 libsqlite3-dev libstdc++-13-dev libsubunit-perl libtasn1-6 libtinfo6 libubsan1 libunistring2 libwrap0 libx11-xcb1 libxau6 libxcb1 libxext6 libxft2 libxml2 libxslt1.1 libzstd1
  make manpages-dev python3-dev python3-pip python3-wheel python3.12-dev rpcsvc-proto zlib1g-dev
The following NEW packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu build-essential bzip2 cpp gcc-13 gcc-13-base gcc-13-x86-64-linux-gnu gcc-x86-64-linux-gnu glibc-dev fakeroot fontconfig-config fonts-dejavu-core fonts-dejavu-mono
  g++-13 g++-13-x86-64-linux-gnu g++-x86-64-linux-gnu gcc gcc-13 gcc-13-base gcc-13-x86-64-linux-gnu gcc-x86-64-linux-gnu javascript-common libalgorithm-diff-perl libalgorithm-diff-xs-perl
  libalgorithm-merge-perl libasan8 libatomic1 libbinutils libc-dev-bin libc-devtools libc6-dev libcc1-0 libcrypt-dev libctf-nobfd0 libctf0 libde265-0 libdeflate0 libdpkg-perl libexpat1-dev
  libfakeroot libfile-fcntllock-perl libfontconfig1 libgcc-13-dev libgd3 libgomp1 libhogweed6 libidn2-0 libisl23 libitm1 libjbig0 libjpeg-turbo8 libjpeg9 libjs-jquery libjs-sphinxdoc libjs-underscore liblerc4 liblsan0 libmpc3 libpython3.12-dev libpython3.12-stdlib libquadmath0
  libseccomp2 libsepol1 libshim1 libslang2 libsqlite3-dev libstdc++-13-dev libsubunit-perl libtasn1-6 libtinfo6 libubsan1 libunistring2 libwrap0 libx11-xcb1 libxau6 libxcb1 libxext6 libxft2 libxml2 libxslt1.1 libzstd1
  make manpages-dev python3-dev python3-pip python3-wheel python3.12-dev rpcsvc-proto zlib1g-dev
0 upgraded, 86 newly installed, 0 to remove and 0 not upgraded.
Need to get 88.7 MB of archives.
After this operation, 328 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 binutils-common amd64 2.42-4ubuntu2 [239 kB]
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libbinutils amd64 2.42-4ubuntu2 [14.8 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libbinutils amd64 2.42-4ubuntu2 [592 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libctf-nobfd0 amd64 2.42-4ubuntu2 [97.1 kB]
Get:5 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libctf0 amd64 2.42-4ubuntu2 [94.5 kB]
Get:6 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libpython3.12-dev amd64 3.12.3-0ubuntu2 [851 kB]
Get:7 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 binutils-x86-64-linux-gnu amd64 2.42-4ubuntu2 [2469 kB]
Get:8 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 binutils amd64 2.42-4ubuntu2 [18.0 kB]
Get:9 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libc-dev-bin amd64 2.39-0ubuntu8.3 [60.8 kB]
Get:10 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 linux-libc-dev amd64 6.8.0-45.45 [1638 kB]
i-0966b23286e29e05 (shubhamprc4_instance)
PublicP: 43.204.220.242 PrivateP: 172.31.6.241
```

Step 15 : Now use following command to create folder/directory in your ubuntu machine.

mkdir python_program



```
aws
Services
Search
[Alt+S]

To tab out of the terminal window and select the next button element, press the left and right Shift keys together.

Setting up dpkg-dev (1.22.6ubuntu1) ...
Setting up libexpat1-dev:amd64 (2.6.1-2ubuntu0.1) ...
Setting up gcc-13 (13.2.0-23ubuntu4) ...
Setting up zlib1g-dev:amd64 (1:1.3.dfsg-3.1ubuntu2.1) ...
Setting up cpp (4:13.2.0-7ubuntu1) ...
Setting up g++-13-x86-64-linux-gnu (13.2.0-23ubuntu4) ...
Setting up gcc-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up libpython3.12-dev:amd64 (3.12.3-0ubuntu2) ...
Setting up gcc (4:13.2.0-7ubuntu1) ...
Setting up python3.12-dev (3.12.3-0ubuntu2) ...
Setting up g++-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up g++-13 (13.2.0-23ubuntu4) ...
Setting up libpython3-dev:amd64 (3.12.3-0ubuntu2) ...
Setting up python3-dev (3.12.3-0ubuntu2) ...
Setting up g++ (4:13.2.0-7ubuntu1) ...
update-alternatives: using /usr/bin/g++ to provide /usr/bin/c++ (c++) in auto mode
Setting up build-essential (12.10ubuntu1) ...
Setting up libheif-plugin-acmdec:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif1:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif-plugin-libde265:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif-plugin-acmenc:amd64 (1.17.6-1ubuntu4) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for sgml-base (1.30) ...
Setting up libfontconfig1:amd64 (2.15.0-1.1ubuntu2) ...
Setting up libgd3:amd64 (2.3.3-9ubuntu5) ...
Setting up libc-devtools (2.39-0ubuntu8.3) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

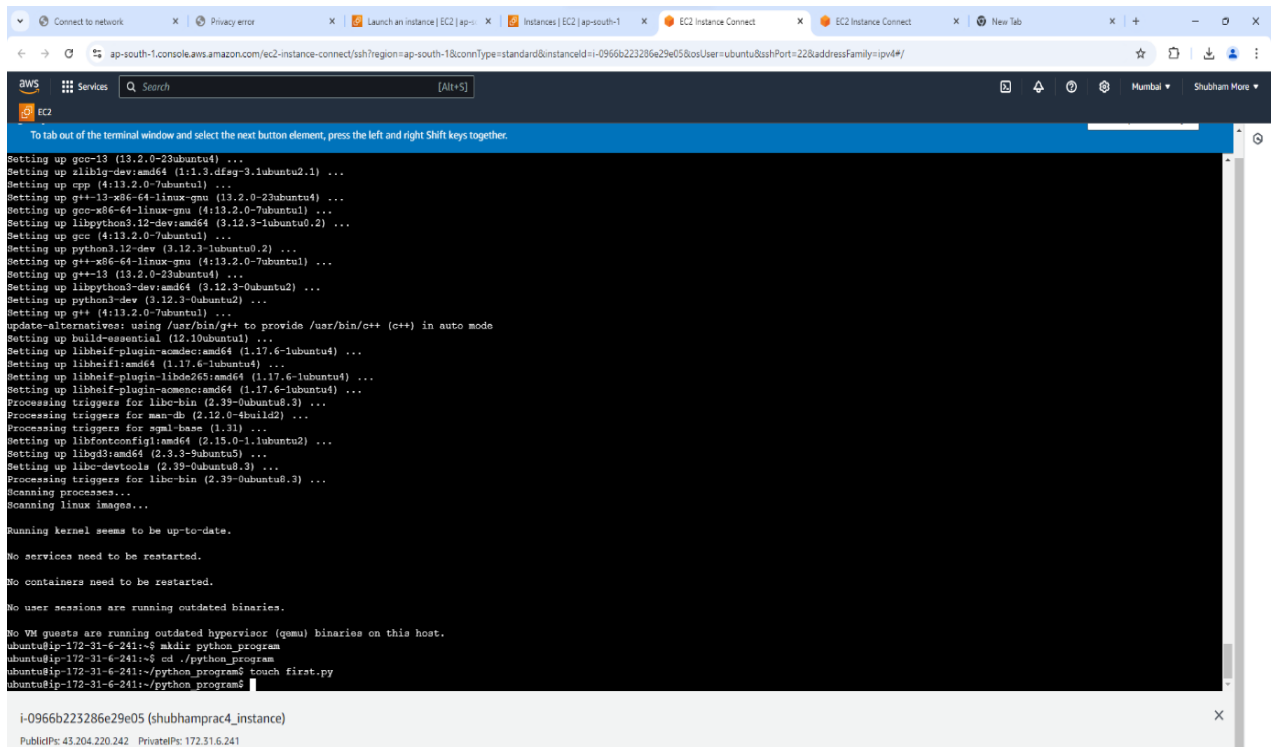
No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-6-241:~$ mkdir python_program
ubuntu@ip-172-31-6-241:~$
```


Step 16 : Now use following command to change directory to python_program.

cd ./python_program



```
Setting up gcc-13 (13.2.0-23ubuntu4) ...
Setting up zlib1g-dev:amd64 (1:1.3.dfsg-3.1ubuntu2.1) ...
Setting up cpp (4:13.2.0-7ubuntu1) ...
Setting up g++-13-x86-64-linux-gnu (13.2.0-23ubuntu4) ...
Setting up gcc-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up libpython3.12-dev:amd64 (3.12.3-1ubuntu0.2) ...
Setting up gcc (4:13.2.0-7ubuntu1) ...
Setting up python3.12-dev (3.12.3-1ubuntu0.2) ...
Setting up g++-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up g++-13 (13.2.0-23ubuntu4) ...
Setting up libpython3-dev:amd64 (3.12.3-0ubuntu2) ...
Setting up python3-dev (3.12.3-0ubuntu2) ...
Setting up g++ (4:13.2.0-7ubuntu1) ...
update-alternatives: using /usr/bin/g++ to provide /usr/bin/c++ (c++) in auto mode
Setting up build-essential (12.10ubuntu1) ...
Setting up libheif-plugin-acmdec:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif-plugin-libde265:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif-plugin-acmenc:amd64 (1.17.6-1ubuntu4) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for sgml-base (1.31) ...
Setting up libfontconfig:amd64 (2.15.0-1.1ubuntu2) ...
Setting up libgd3:amd64 (2.3.3-9ubuntu5) ...
Setting up libc-devtools (2.39-0ubuntu8.3) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

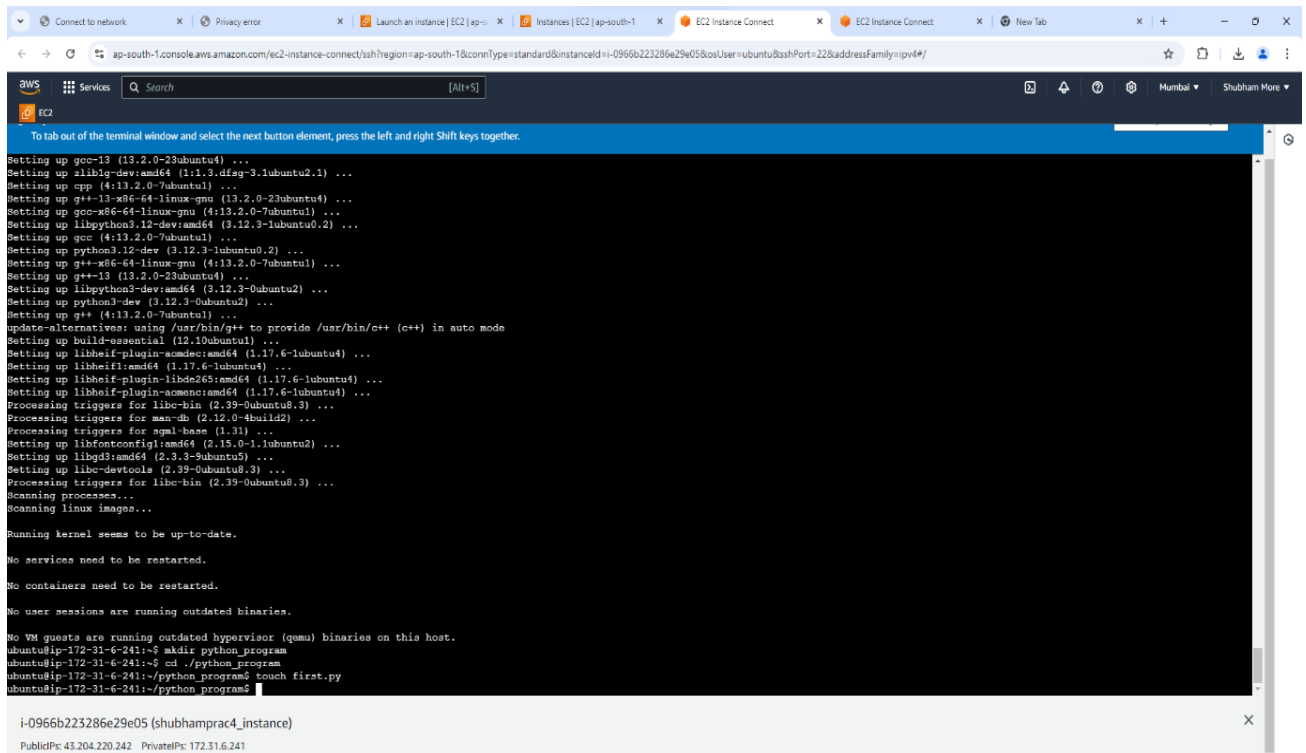
No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-6-241:~$ mkdir python_program
ubuntu@ip-172-31-6-241:~$ cd ./python_program
ubuntu@ip-172-31-6-241:~/python_program$ touch first.py
ubuntu@ip-172-31-6-241:~/python_program$
```

Step 17 : Now use following command to create a file with.py extension.

touch first.py



```
Setting up gcc-13 (13.2.0-23ubuntu4) ...
Setting up zlib1g-dev:amd64 (1:1.3.dfsg-3.1ubuntu2.1) ...
Setting up cpp (4:13.2.0-7ubuntu1) ...
Setting up g++-13-x86-64-linux-gnu (13.2.0-23ubuntu4) ...
Setting up gcc-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up libpython3.12-dev:amd64 (3.12.3-1ubuntu0.2) ...
Setting up gcc (4:13.2.0-7ubuntu1) ...
Setting up python3.12-dev (3.12.3-1ubuntu0.2) ...
Setting up g++-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up g++-13 (13.2.0-23ubuntu4) ...
Setting up libpython3-dev:amd64 (3.12.3-0ubuntu2) ...
Setting up python3-dev (3.12.3-0ubuntu2) ...
Setting up g++ (4:13.2.0-7ubuntu1) ...
update-alternatives: using /usr/bin/g++ to provide /usr/bin/c++ (c++) in auto mode
Setting up build-essential (12.10ubuntu1) ...
Setting up libheif-plugin-acmdec:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif-plugin-libde265:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif-plugin-acmenc:amd64 (1.17.6-1ubuntu4) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for sgml-base (1.31) ...
Setting up libfontconfig:amd64 (2.15.0-1.1ubuntu2) ...
Setting up libgd3:amd64 (2.3.3-9ubuntu5) ...
Setting up libc-devtools (2.39-0ubuntu8.3) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

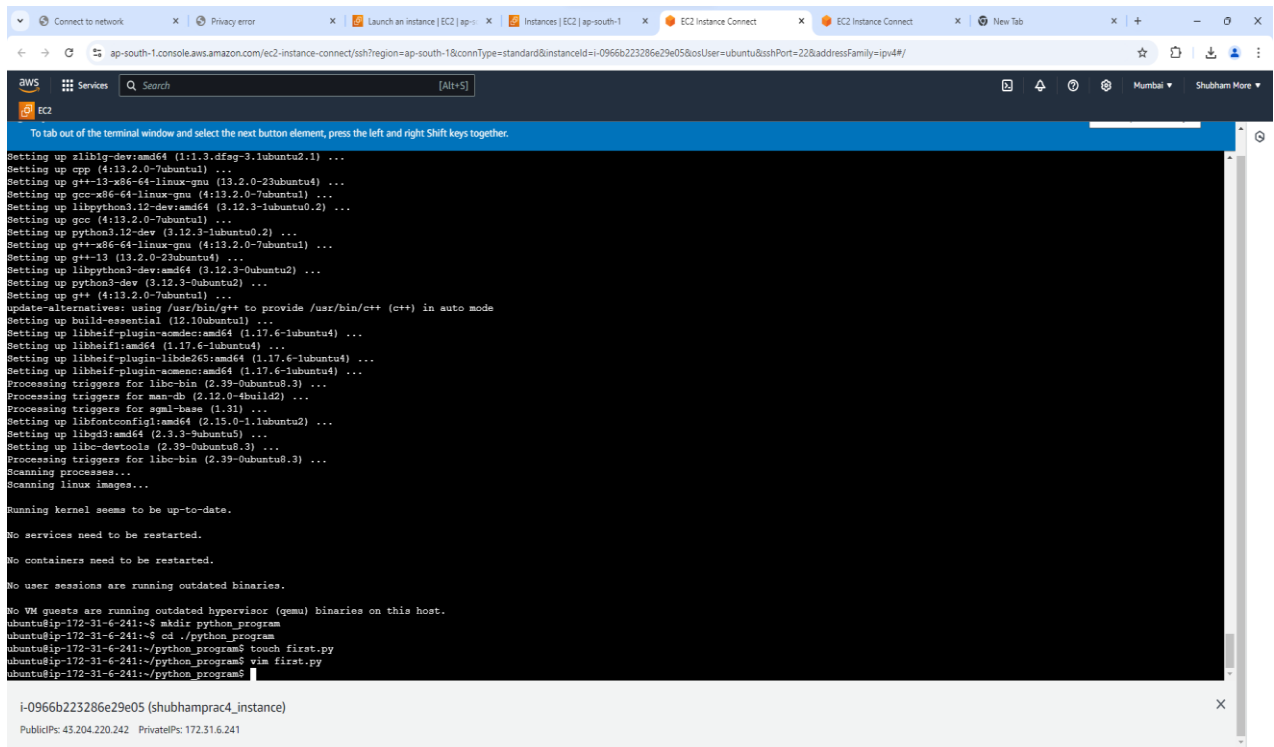
No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-6-241:~$ mkdir python_program
ubuntu@ip-172-31-6-241:~$ cd ./python_program
ubuntu@ip-172-31-6-241:~/python_program$ touch first.py
ubuntu@ip-172-31-6-241:~/python_program$
```

Step 18 : Now use following command to write a code in intro.py file.

vim first.py



```
Setting up xlib-dev:amd64 (1:1.3.dfsg-3.1ubuntu2.1) ...
Setting up cpp (4:13.2.0-7ubuntu1) ...
Setting up g++-13-x86-64-linux-gnu (13.2.0-23ubuntu4) ...
Setting up gcc-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up libpython3.12-dev:amd64 (3.12.3-1ubuntu0.2) ...
Setting up gcc (4:13.2.0-7ubuntu1) ...
Setting up python3.12-dev (3.12.3-1ubuntu0.2) ...
Setting up g++-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up g++-13 (13.2.0-23ubuntu4) ...
Setting up libpython3-dev:amd64 (3.12.3-0ubuntu2) ...
Setting up python3-dev (3.12.3-0ubuntu2) ...
Setting up g++ (4:13.2.0-7ubuntu1) ...
update-alternatives: using /usr/bin/g++ to provide /usr/bin/c++ (c++) in auto mode
Setting up build-essential (12.10ubuntu1) ...
Setting up libheif-plugin-acmdec:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif1:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif-plugin-libde265:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif-plugin-acmenc:amd64 (1.17.6-1ubuntu4) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for sgml-base (1.31) ...
Setting up libfontconfig:amd64 (2.15.0-1.1ubuntu2) ...
Setting up libed3:amd64 (2.3.3-ubuntu5) ...
Setting up libc-devtools (2.39-0ubuntu8.3) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

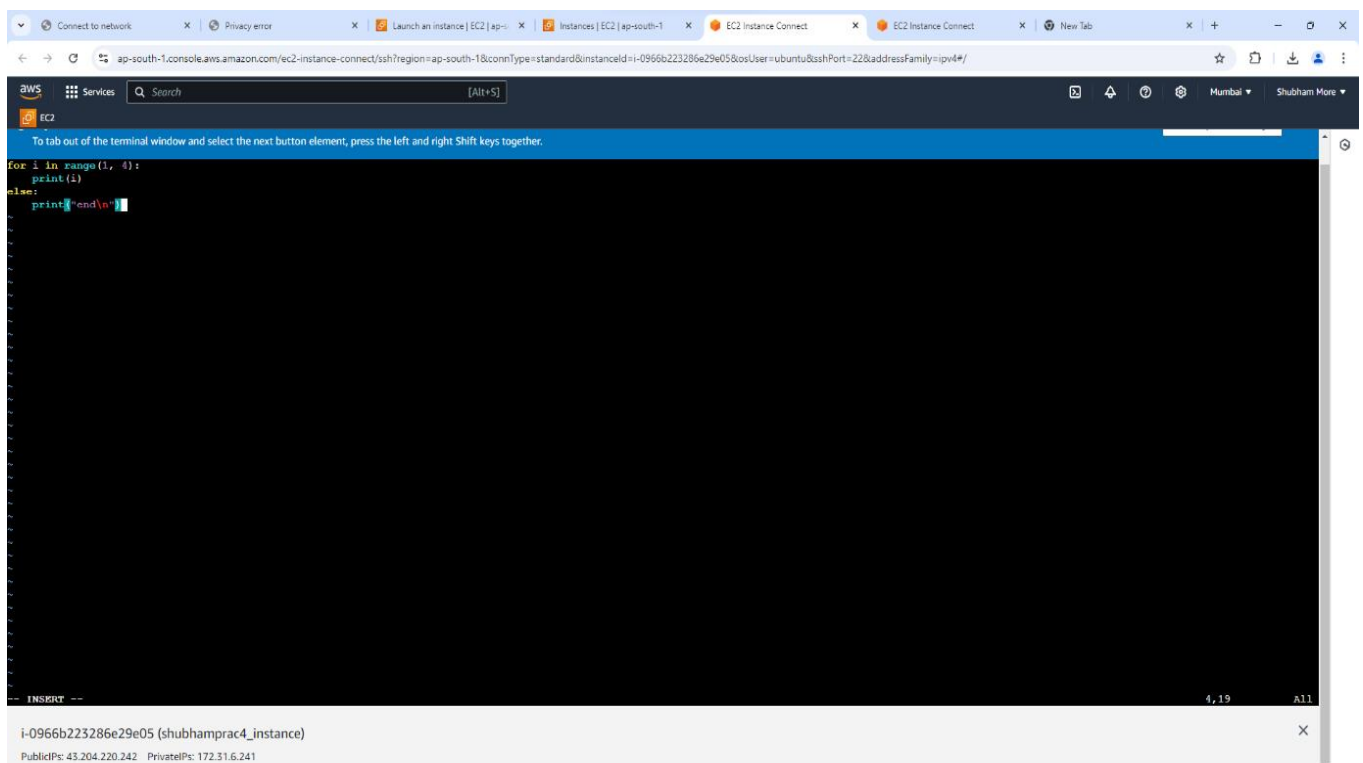
No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-6-241:~$ mkdir python_program
ubuntu@ip-172-31-6-241:~$ cd ./python_program
ubuntu@ip-172-31-6-241:~/python_program$ touch first.py
ubuntu@ip-172-31-6-241:~/python_program$ vim first.py
ubuntu@ip-172-31-6-241:~/python_program$
```

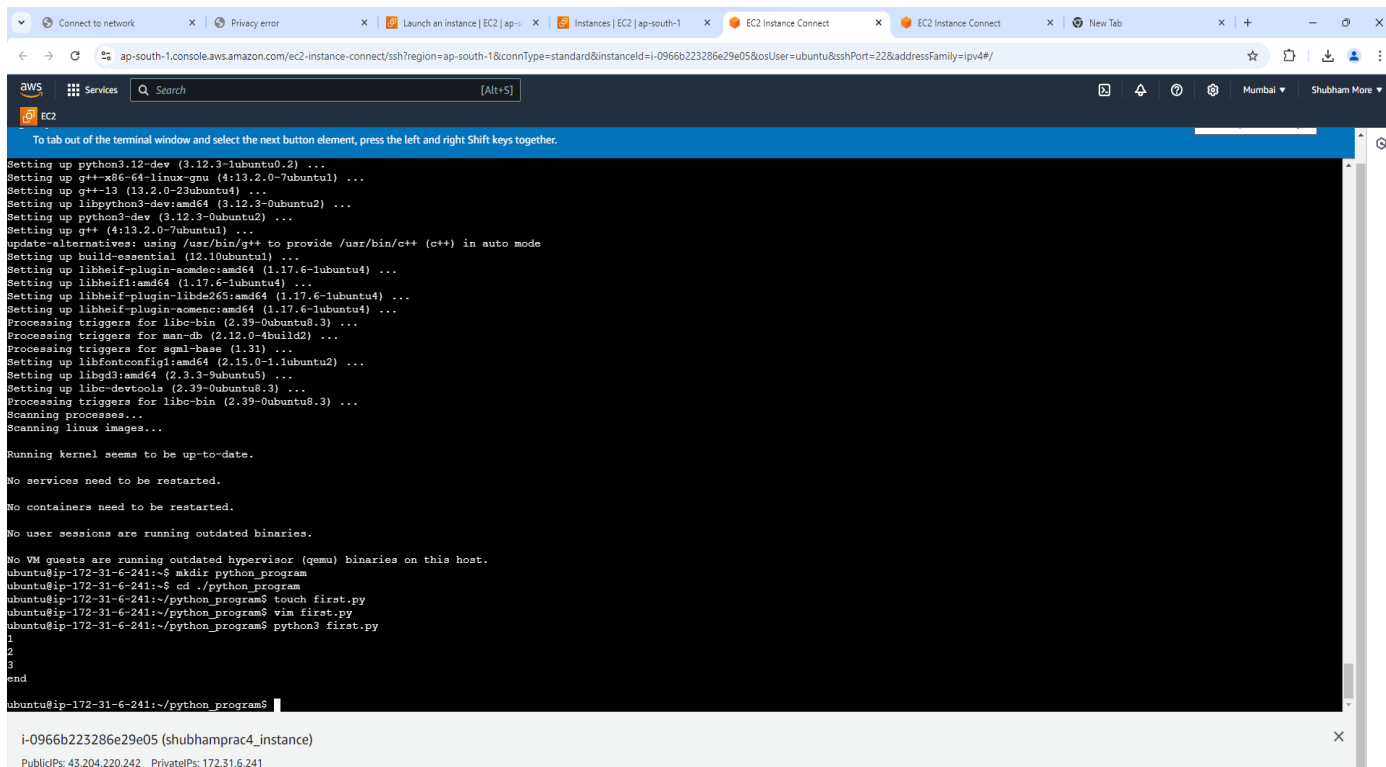
Step 19 : To write press "i" and when you are writing is over then press "esc" and then ":wq" then enter.



```
for i in range(1, 4):
    print(i)
else:
    print("\nend\n")
```

Step 20 : Now use below command to run the python code.

python3 first.py



```
Setting up python3.12-dev (3.12.3-1ubuntu0.2) ...
Setting up g++-x86-64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up g++-13 (13.2.0-23ubuntu4) ...
Setting up libpython3-dev:amd64 (3.12.3-0ubuntu2) ...
Setting up python3-dev (3.12.3-0ubuntu2) ...
Setting up g++ (4:13.2.0-7ubuntu1) ...
update-alternatives: using /usr/bin/g++ to provide /usr/bin/c++ (c++) in auto mode
Setting up build-essential (12.10ubuntu1) ...
Setting up libheif-plugin-acodec:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif-plugin-libde265:amd64 (1.17.6-1ubuntu4) ...
Setting up libheif-plugin-aomenc:amd64 (1.17.6-1ubuntu4) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for sgml-base (1.31) ...
Setting up libfontconfig1:amd64 (2.15.0-1.1ubuntu2) ...
Setting up libgd3:amd64 (2.3.3-9ubuntu5) ...
Setting up libc-devtools (2.39-0ubuntu8.3) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-6-241:~$ mkdir python_program
ubuntu@ip-172-31-6-241:~$ cd ./python_program
ubuntu@ip-172-31-6-241:~/python_program$ touch first.py
ubuntu@ip-172-31-6-241:~/python_program$ vim first.py
ubuntu@ip-172-31-6-241:~/python_program$ python3 first.py
1
2
3
end
ubuntu@ip-172-31-6-241:~/python_program$
```

Conclusion: Hence in this practical, we have successfully implemented and deployed the python application on EC2 instance.