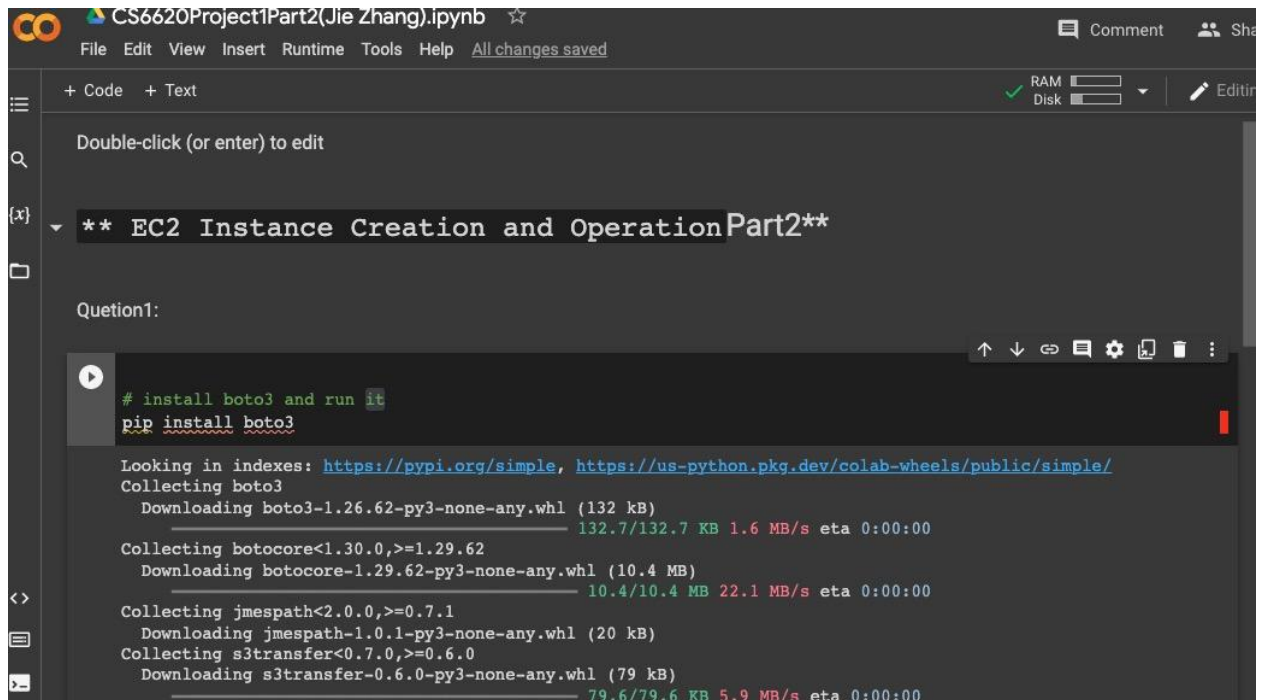


PART II: Study the concepts for the next assignment (needs to do be done in console)

1. Set up the EC2 instance, using t2.micro, add tag to it and it has to be accessed via any ip address



The screenshot shows a Jupyter Notebook titled "CS6620Project1Part2(Jie Zhang).ipynb". The notebook has a menu bar with "File", "Edit", "View", "Insert", "Runtime", "Tools", and "Help". Below the menu bar, there are tabs for "+ Code" and "+ Text". The main area of the notebook displays a code cell with the following content:

```
Double-click (or enter) to edit

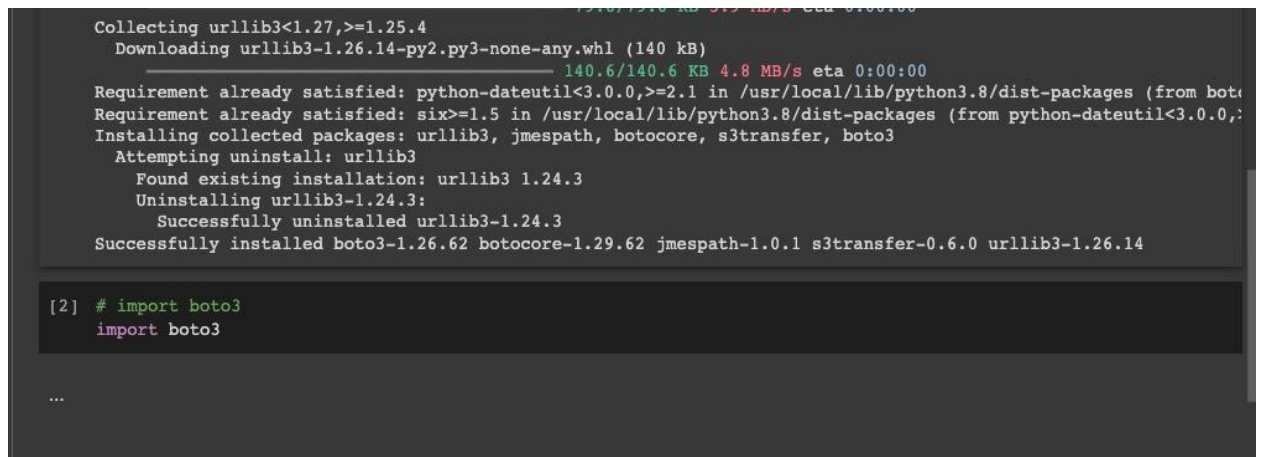
** EC2 Instance Creation and OperationPart2**

Question1:

# install boto3 and run it
pip install boto3
```

The output of the code cell shows the installation progress of boto3 and its dependencies:

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Collecting boto3
  Downloading boto3-1.26.62-py3-none-any.whl (132 kB)
    132.7/132.7 KB 1.6 MB/s eta 0:00:00
Collecting botocore<1.30.0,>=1.29.62
  Downloading botocore-1.29.62-py3-none-any.whl (10.4 MB)
    10.4/10.4 MB 22.1 MB/s eta 0:00:00
Collecting jmespath<2.0.0,>=0.7.1
  Downloading jmespath-1.0.1-py3-none-any.whl (20 kB)
Collecting s3transfer<0.7.0,>=0.6.0
  Downloading s3transfer-0.6.0-py3-none-any.whl (79 kB)
    79.6/79.6 KB 5.9 MB/s eta 0:00:00
```



The screenshot shows the continuation of the Jupyter Notebook output, displaying the installation progress of urllib3 and the final state of the environment:

```
Collecting urllib3<1.27,>=1.25.4
  Downloading urllib3-1.26.14-py2.py3-none-any.whl (140 kB)
    140.6/140.6 KB 4.8 MB/s eta 0:00:00
Requirement already satisfied: python-dateutil<3.0.0,>=2.1 in /usr/local/lib/python3.8/dist-packages (from botocore)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.8/dist-packages (from python-dateutil<3.0.0,>=2.1)
Installing collected packages: urllib3, jmespath, botocore, s3transfer, boto3
  Attempting uninstall: urllib3
    Found existing installation: urllib3 1.24.3
    Uninstalling urllib3-1.24.3:
      Successfully uninstalled urllib3-1.24.3
  Successfully installed boto3-1.26.62 botocore-1.29.62 jmespath-1.0.1 s3transfer-0.6.0 urllib3-1.26.14

[2] # import boto3
import boto3

...
```

Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name

[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

→

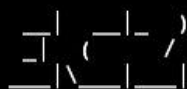


Success

Successfully initiated launch of instance (i-0f2f0b5adc281ccb5)

▼ Launch log

Initializing requests	Succeeded
Creating security groups	Succeeded
Creating security group rules	Succeeded
Launch initiation	Succeeded



Amazon Linux 2 AMI



```
https://aws.amazon.com/amazon-linux-2/  
ec2-user@ip-172-31-57-112 ~]$
```

i-0f2f0b5adc281ccb5 (My Web Server1)

PublicIPs: 100.25.111.183 PrivateIPs: 172.31.57.112

Tags > Manage

Add tags to your resources to simplify the administration of your EC2 infrastructure. Select resources from the grid below and use the controls below the grid to apply a new tag or remove an existing tag. You can add up to 10 unique keys to each resource with a value for each key. Tag keys and values are case-sensitive.

Filter: **Instances**   1 to 1

	Resource ID	Name	Instance1
<input checked="" type="checkbox"/>	i-0f2f0b5adc281ccb5	My Web Server1	My Web Server1

Add Tag

Key **Value** **Add**

OR

Remove Tag

Key **Remove Tag**

Instance summary for i-0f2f0b5adc281ccb5 (My Web Server1) [Info](#)

Updated less than a minute ago

↻

Connect

Instance state ▼

Actions ▼

Instance ID i-0f2f0b5adc281ccb5 (My Web Server1)	Public IPv4 address 100.25.111.183 open address	Private IPv4 172.31.
IPv6 address -	Instance state Running	Public IPv4 I ec2-100 1.amazonaws.com
Hostname type IP name: ip-172-31-57-112.ec2.internal	Private IP DNS name (IPv4 only) ip-172-31-57-112.ec2.internal	
Answer private resource DNS name IPv4 (A)	Instance type t2.micro	Elastic IP ad -
Auto-assigned IP address 100.25.111.183 [Public IP]	VPC ID vpc-0f47cd1d0bf0cf5d2	AWS Compu Opt-in to or recomme Learn more

2. Explain in brief the process by setting up a routing table

There are several steps to setting up a routing table:

Step1: use VPC console, set up VPC.

Step2: Choose Routing Table

Step3: Give a name for a route table

Step4: Choose the VPC from create list for my route table

VPC > Route tables > rtb-02de6fcc8cf589276

rtb-02de6fcc8cf589276 / my-route-table-1

Actions ▾

📘 You can now check network connectivity with Reachability Analyzer Run Reachability Analyzer ✕

Details [Info](#)

Route table ID 📄 rtb-02de6fcc8cf589276	Main 📄 No	Explicit subnet associations -	Edge associations -
VPC vpc-096f018f733796d75 my-vpc-1	Owner ID 📄 589469652154		

✔ Route table rtb-02de6fcc8cf589276 | my-route-table-1 was created successfully.

VPC > Route tables > rtb-02de6fcc8cf589276

rtb-02de6fcc8cf589276 / my-route-table-1

Actions

📘 You can now check network connectivity with Reachability Analyzer Run Reachability Analyzer

Details [Info](#)

Route table ID 📄 rtb-02de6fcc8cf589276	Main 📄 No	Explicit subnet associations -	Edge associations -
VPC vpc-096f018f733796d75 my-vpc-1	Owner ID 📄 589469652154		

3. Set up an Application Load Balancer in the console

Target groups (2) [Info](#)

Search or filter target groups

Name	ARN	Port	Protocol	Target type	Load balancer	VPC ID
Computing	arn:aws:elasticloadbalancin...	80	HTTP	Instance	None associated	vpc-0f47cd1d0bf0
Dev	arn:aws:elasticloadbalancin...	80	TCP	Application Load Balancer	MyFirstLoadBalancer	vpc-0f47cd1d0bf0

EC2 > Load balancers

Load balancers (1)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter by property or value

search: Web X Clear filters

Name	DNS name	State	VPC ID	Availability Zones	Type	Date created
Web	Web-1433867953.us-east-...	Provisioning	vpc-0f47cd1d0bf0cf5d2	2 Availability Zones	application	February 2, 2023, 00:0 (UTC-08:00)

4. Create a VPC

VPC > Your VPCs > vpc-096f018f733796d75

vpc-096f018f733796d75 / my-vpc-1

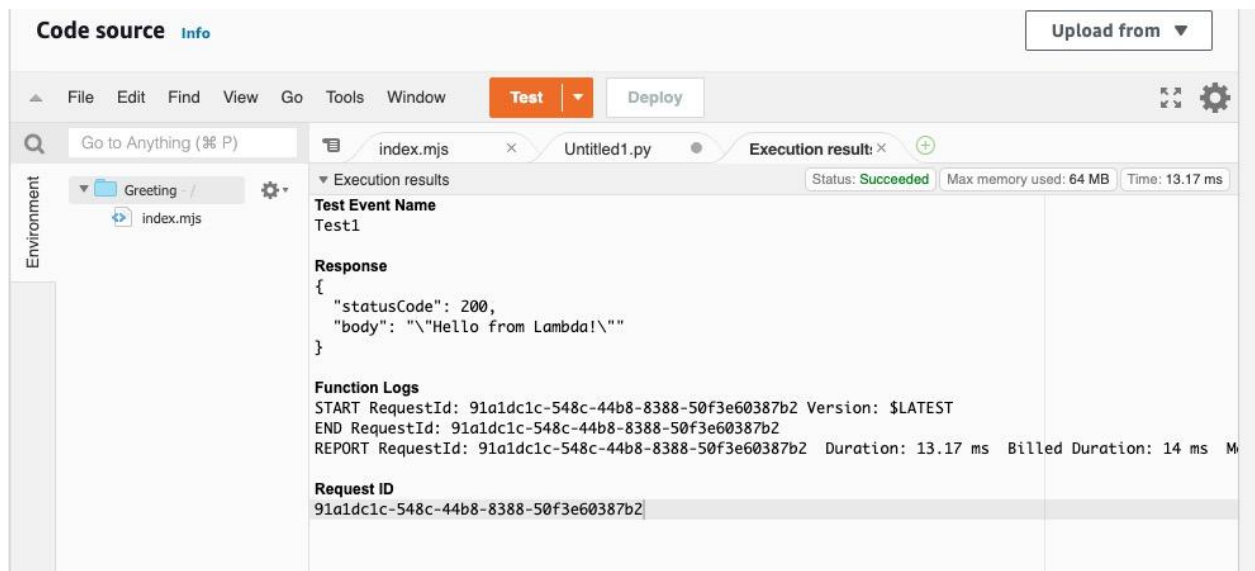
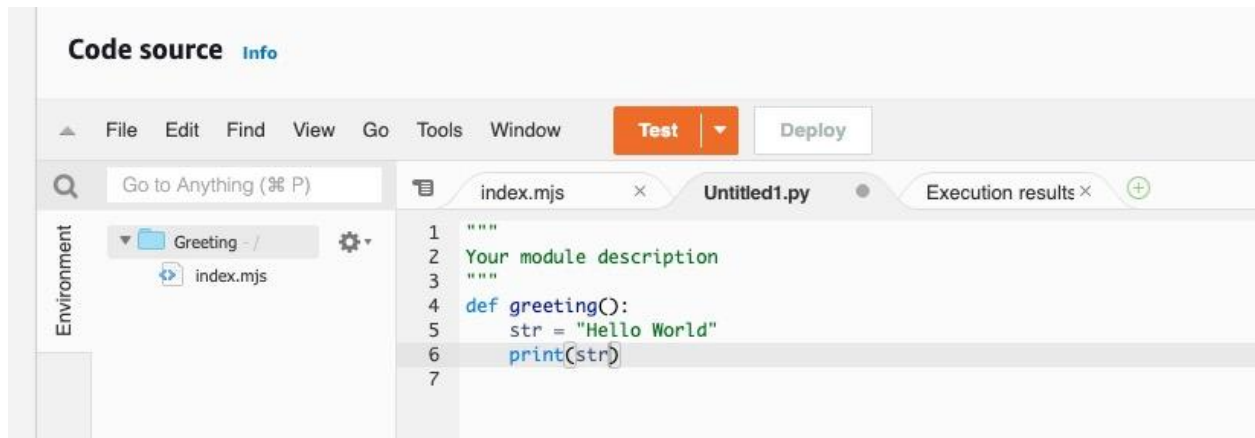
[Actions](#)

Details [Info](#)

VPC ID vpc-096f018f733796d75	State Available	DNS hostnames Disabled	DNS resolution Enabled
Tenancy Default	DHCP option set dopt-0e6a88564a4c7f4c	Main route table rtb-07cd1ef60e6758728	Main network ACL acl-0488d68d8a84ed02f
Default VPC No	IPv4 CIDR 10.0.0.0/24	IPv6 pool -	IPv6 CIDR (Network border group) -
Network Address Usage metrics Disabled	Route 53 Resolver DNS Firewall rule groups -	Owner ID 589469652154	

[Resource map](#) | [CIDRs](#) | [Flow logs](#) | [Tags](#)

5. Write a 'hello world program' in Python using AWS



Explain using screenshots, code and text as needed to fully answer these questions.