Task – 5 Aws – boto3

Installing boto-3:

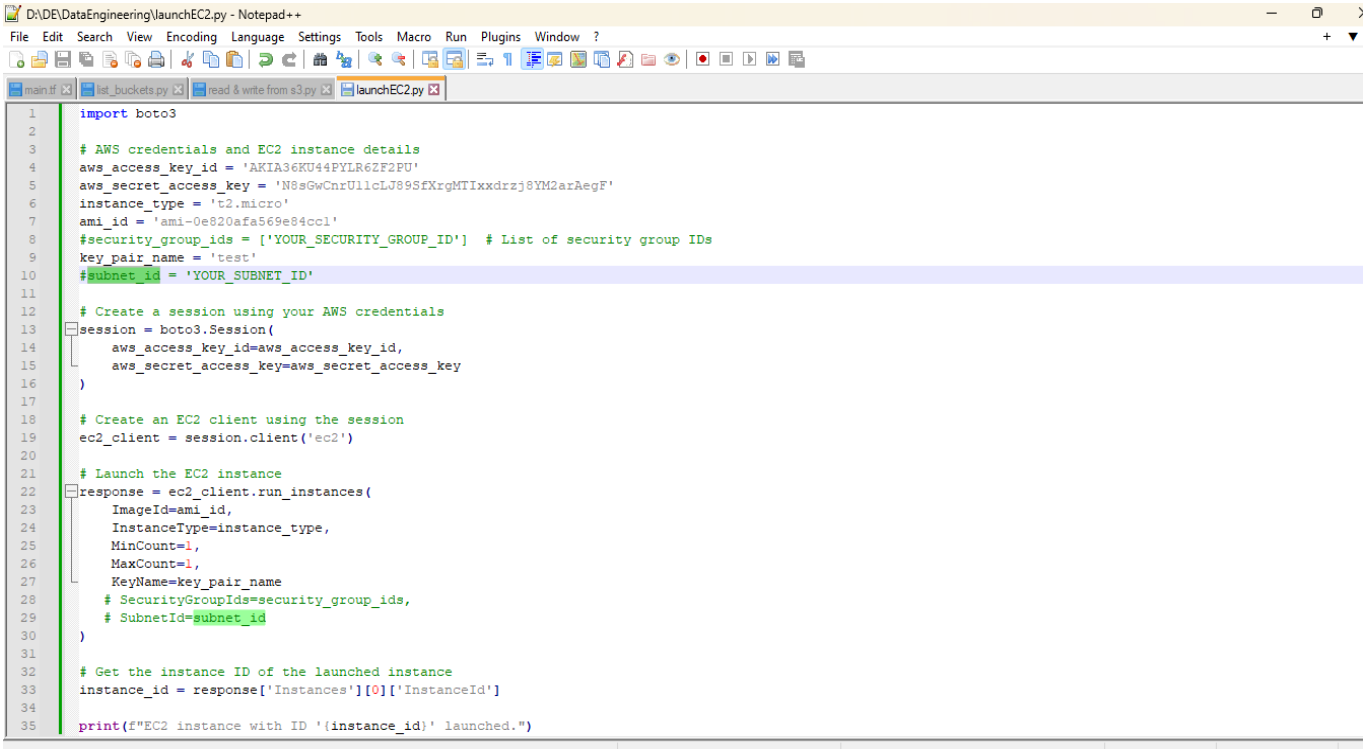
```
PS C:\Users\srina> python --version
Python 3.11.4
PS C:\Users\srina> pip

Usage:
  pip <command> [options]

Commands:
  install                     Install packages.
  download                    Download packages.
  uninstall                   Uninstall packages.
  freeze                      Output installed packages in requirements format.
  inspect                     Inspect the python environment.
  list                        List installed packages.
  show                        Show information about installed packages.
  check                       Verify installed packages have compatible dependencies.
  config                      Manage local and global configuration.
  search                      Search PyPI for packages.
  cache                       Inspect and manage pip's wheel cache.
  index                       Inspect information available from package indexes.
  wheel                       Build wheels from your requirements.
  hash                        Compute hashes of package archives.
  completion                  A helper command used for command completion.
  debug                       Show information useful for debugging.
  help                        Show help for commands.
```

D:\DE\DataEngineering\rea
Notepad++

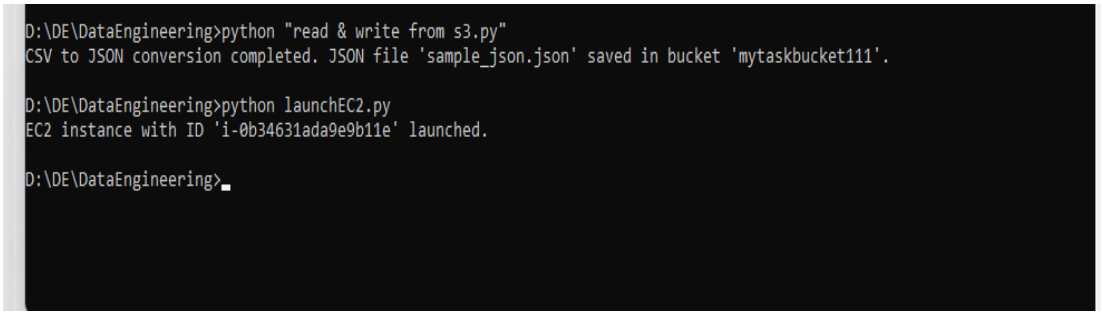
```
the spelling of the name, or if a path was included, verify that the path is correct and try again.
At line:2 char:1
+ sudo apt upgrade
+ ~~~~
    + CategoryInfo          : ObjectNotFound: (sudo:String) [], CommandNotFoundException
    + FullyQualifiedErrorId : CommandNotFoundException

PS C:\Users\srina> pip install boto3
Collecting boto3
  Downloading boto3-1.26.157-py3-none-any.whl (135 kB)
     ---------------------------------------- 135.9/135.9 kB 2.7 MB/s eta 0:00:00
Collecting botocore<1.30.0,>=1.29.157 (from boto3)
  Downloading botocore-1.29.157-py3-none-any.whl (10.9 MB)
     ---------------------------------------- 10.9/10.9 MB 46.9 MB/s eta 0:00:00
Collecting jmespath<2.0.0,>=0.7.1 (from boto3)
  Downloading jmespath-1.0.1-py3-none-any.whl (20 kB)
Collecting s3transfer<0.7.0,>=0.6.0 (from boto3)
  Downloading s3transfer-0.6.1-py3-none-any.whl (79 kB)
     ---------------------------------------- 79.8/79.8 kB 4.3 MB/s eta 0:00:00
Collecting python-dateutil<3.0.0,>=2.1 (from botocore<1.30.0,>=1.29.157->boto3)
  Downloading python_dateutil-2.8.2-py2.py3-none-any.whl (247 kB)
     ---------------------------------------- 247.7/247.7 kB ? eta 0:00:00
Collecting urllib3<1.27,>=1.25.4 (from botocore<1.30.0,>=1.29.157->boto3)
  Downloading urllib3-1.26.16-py2.py3-none-any.whl (143 kB)
     ---------------------------------------- 143.1/143.1 kB ? eta 0:00:00
Collecting six>=1.5 (from python-dateutil<3.0.0,>=2.1->botocore<1.30.0,>=1.29.157->boto3)
  Downloading six-1.16.0-py2.py3-none-any.whl (11 kB)
Installing collected packages: urllib3, six, jmespath, python-dateutil, botocore, s3transfer, boto3
Successfully installed boto3-1.26.157 botocore-1.29.157 jmespath-1.0.1 python-dateutil-2.8.2 s3transfer-0.6.1 six-1.16.0
 urllib3-1.26.16
```

Task – 5 Aws – boto3

Launching EC2 using python code :



```
import boto3

# AWS credentials and EC2 instance details
aws_access_key_id = 'AKIA36KU44PYLR6ZF2PU'
aws_secret_access_key = 'N8sGwCnrU1lcLJ89SfXrgMTIxxdrzj8YM2arAegF'
instance_type = 't2.micro'
ami_id = 'ami-0e820afa569e84cc1'
#security_group_ids = ['YOUR_SECURITY_GROUP_ID']  # List of security group IDs
key_pair_name = 'test'
#subnet_id = 'YOUR_SUBNET_ID'

# Create a session using your AWS credentials
session = boto3.Session(
    aws_access_key_id=aws_access_key_id,
    aws_secret_access_key=aws_secret_access_key
)

# Create an EC2 client using the session
ec2_client = session.client('ec2')

# Launch the EC2 instance
response = ec2_client.run_instances(
    ImageId=ami_id,
    InstanceType=instance_type,
    MinCount=1,
    MaxCount=1,
    KeyName=key_pair_name
   # SecurityGroupIds=security_group_ids,
   # SubnetId=subnet_id
)

# Get the instance ID of the launched instance
instance_id = response['Instances'][0]['InstanceId']

print(f"EC2 instance with ID '{instance_id}' launched.")
```

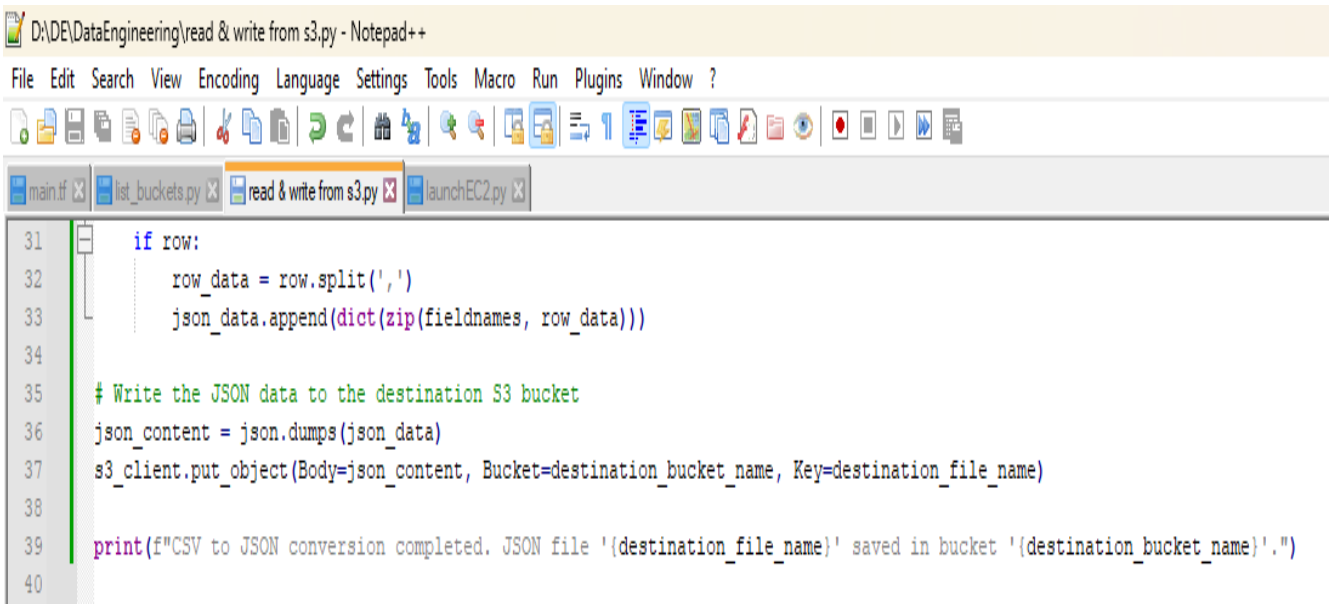


```
D:\DE\DataEngineering>python "read & write from s3.py"
CSV to JSON conversion completed. JSON file 'sample_json.json' saved in bucket 'mytaskbucket111'.

D:\DE\DataEngineering>python launchEC2.py
EC2 instance with ID 'i-0b34631ada9e9b11e' launched.

D:\DE\DataEngineering>
```

reading csv file from s3 bucket and converting to json and writing back to the same bucket in a new file:

Task – 5 Aws – boto3

```python
import boto3
import csv
import json

# AWS credentials and bucket names
aws_access_key_id = 'AKIA36KU44PYLR6ZF2PU'
aws_secret_access_key = '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'
source_bucket_name = 'mytaskbucket111'
source_file_name = 'csvjson.csv'
destination_bucket_name = 'mytaskbucket111'
destination_file_name = 'sample_json.json'

# Create a session using your AWS credentials
session = boto3.Session(
    aws_access_key_id=aws_access_key_id,
    aws_secret_access_key=aws_secret_access_key
)

# Create an S3 client using the session
s3_client = session.client('s3')

# Read the CSV file from the source S3 bucket
response = s3_client.get_object(Bucket=source_bucket_name, Key=source_file_name)
csv_data = response['Body'].read().decode('windows-1252')

# Convert CSV to JSON
csv_rows = csv_data.split('\n')
fieldnames = csv_rows[0].split(',')
json_data = []
for row in csv_rows[1:]:
    if row:
        row_data = row.split(',')
        json_data.append(dict(zip(fieldnames, row_data)))

# Write the JSON data to the destination S3 bucket
```




```python
    if row:
        row_data = row.split(',')
        json_data.append(dict(zip(fieldnames, row_data)))

# Write the JSON data to the destination S3 bucket
json_content = json.dumps(json_data)
s3_client.put_object(Body=json_content, Bucket=destination_bucket_name, Key=destination_file_name)

print(f"CSV to JSON conversion completed. JSON file '{destination_file_name}' saved in bucket '{destination_bucket_name}'.")
```

Files that are in the S3 bucket after running the python code :

Task – 5 Aws – boto3