Introduction to Boto3

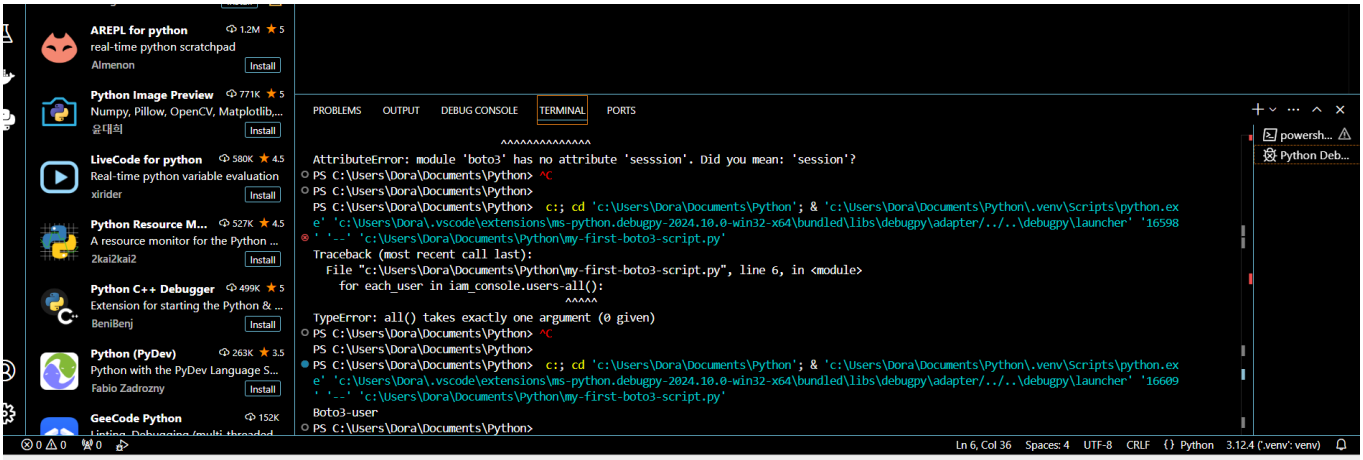
-Boto3 is the name of Python SDK/Module/Library/API for AWS
-Boto3 allows us to directly create, update and delete AWS services from our Python scripts.
.- Boto3 is built upon botocore module.

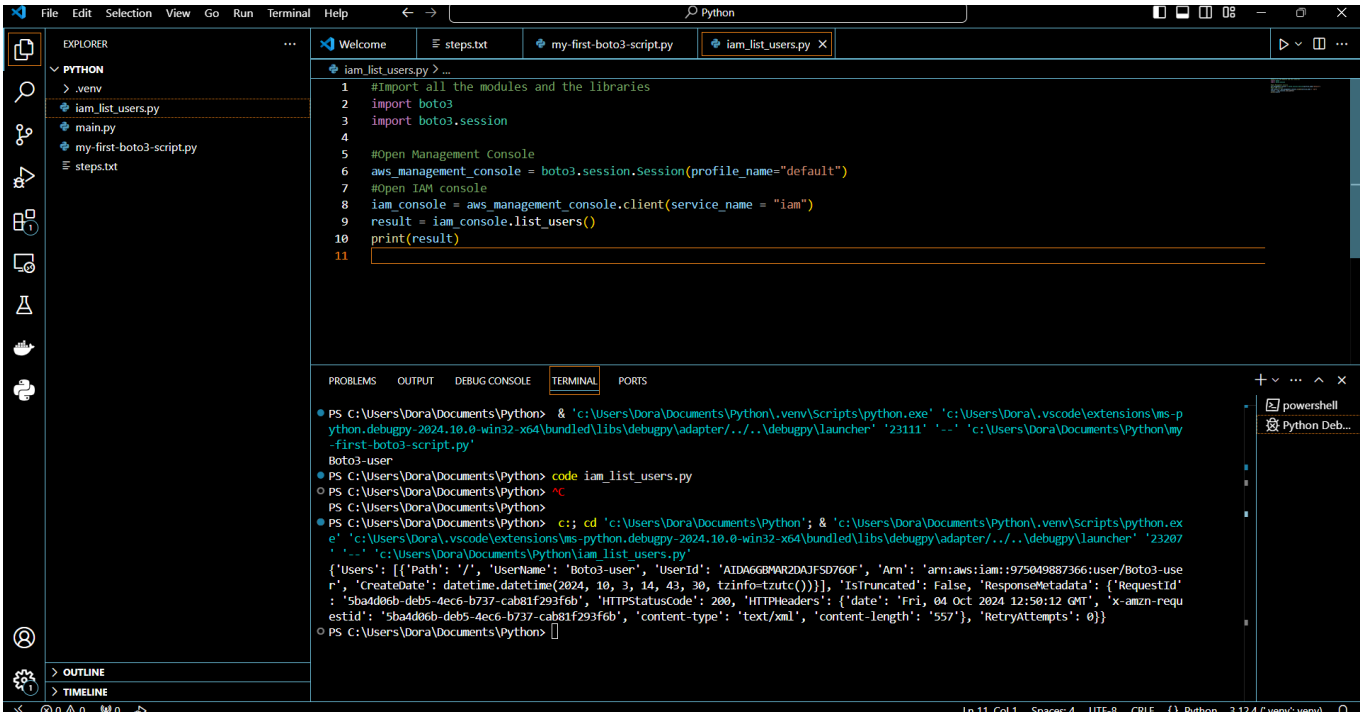
We have to install boto3 to work with AWS services uisng Python scripts

```
PS C:\Users\Dora\Documents\Python> pip3 install boto3
Requirement already satisfied: boto3 in c:\users\dora\documents\python\.venv\lib\site-packages (1.35.32)
Requirement already satisfied: botocore<1.36.0,>=1.35.32 in c:\users\dora\documents\python\.venv\lib\site-packages (from boto3) (1.35.32)
Requirement already satisfied: jmespath<2.0.0,>=0.7.1 in c:\users\dora\documents\python\.venv\lib\site-packages (from boto3) (1.0.1)
Requirement already satisfied: s3transfer<0.11.0,>=0.10.0 in c:\users\dora\documents\python\.venv\lib\site-packages (from boto3) (0.10.2)
Requirement already satisfied: python-dateutil<3.0.0,>=2.1 in c:\users\dora\documents\python\.venv\lib\site-packages (from botocore<1.36.0,>=1.35.32-
>boto3) (2.9.0.post0)
Requirement already satisfied: urllib3!=2.2.0,<3,>=1.25.4 in c:\users\dora\documents\python\.venv\lib\site-packages (from botocore<1.36.0,>=1.35.32->
boto3) (2.2.3)
Requirement already satisfied: six>=1.5 in c:\users\dora\documents\python\.venv\lib\site-packages (from python-dateutil<3.0.0,>=2.1->botocore<1.36.0,
>=1.35.32->boto3) (1.16.0)
PS C:\Users\Dora\Documents\Python>
```

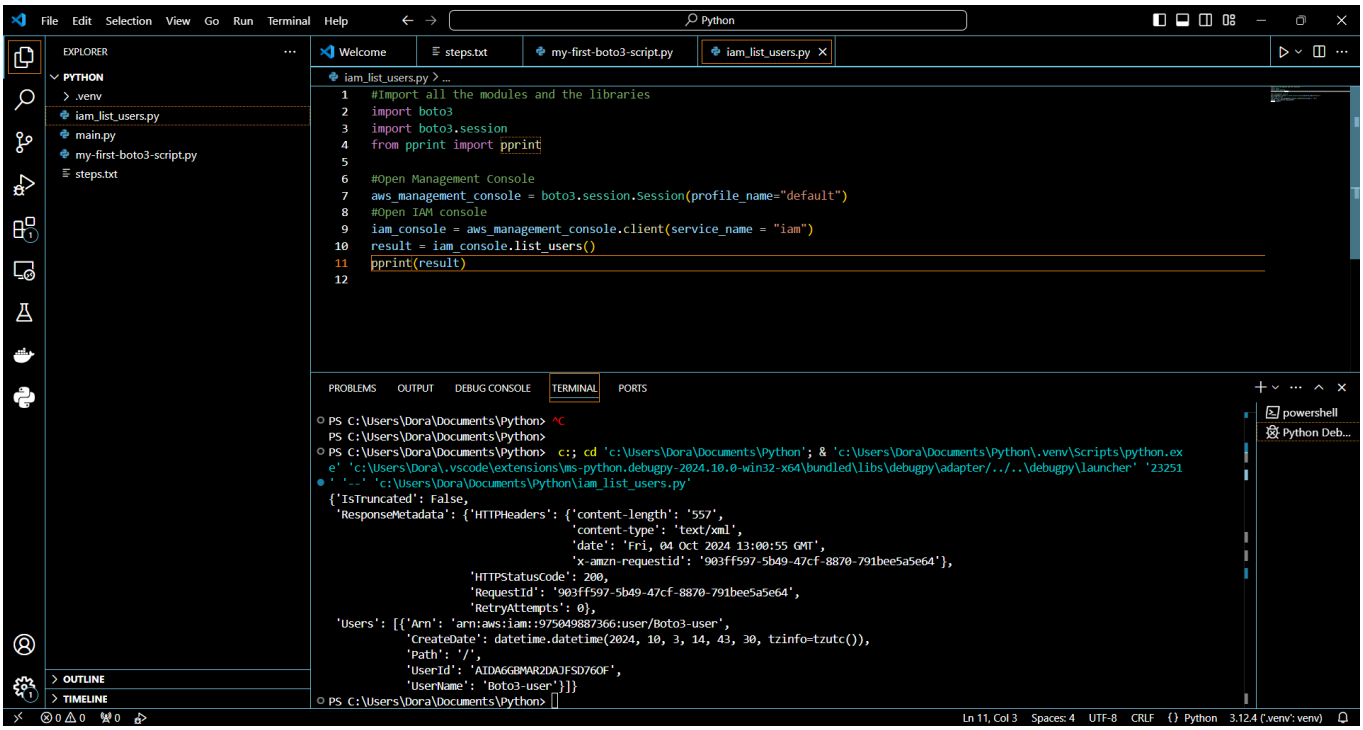
AWS CLI is a unified tool to manage your AWS service

First we have to configure AWS CLI

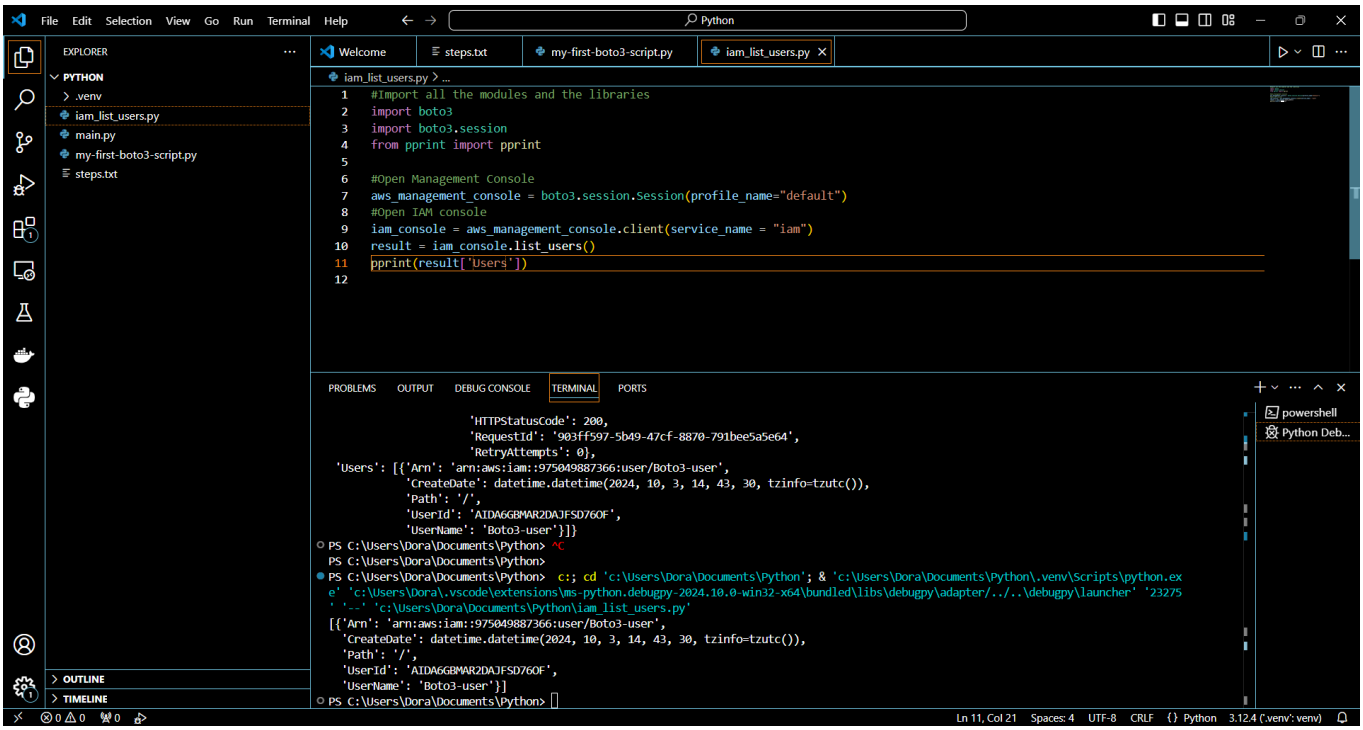


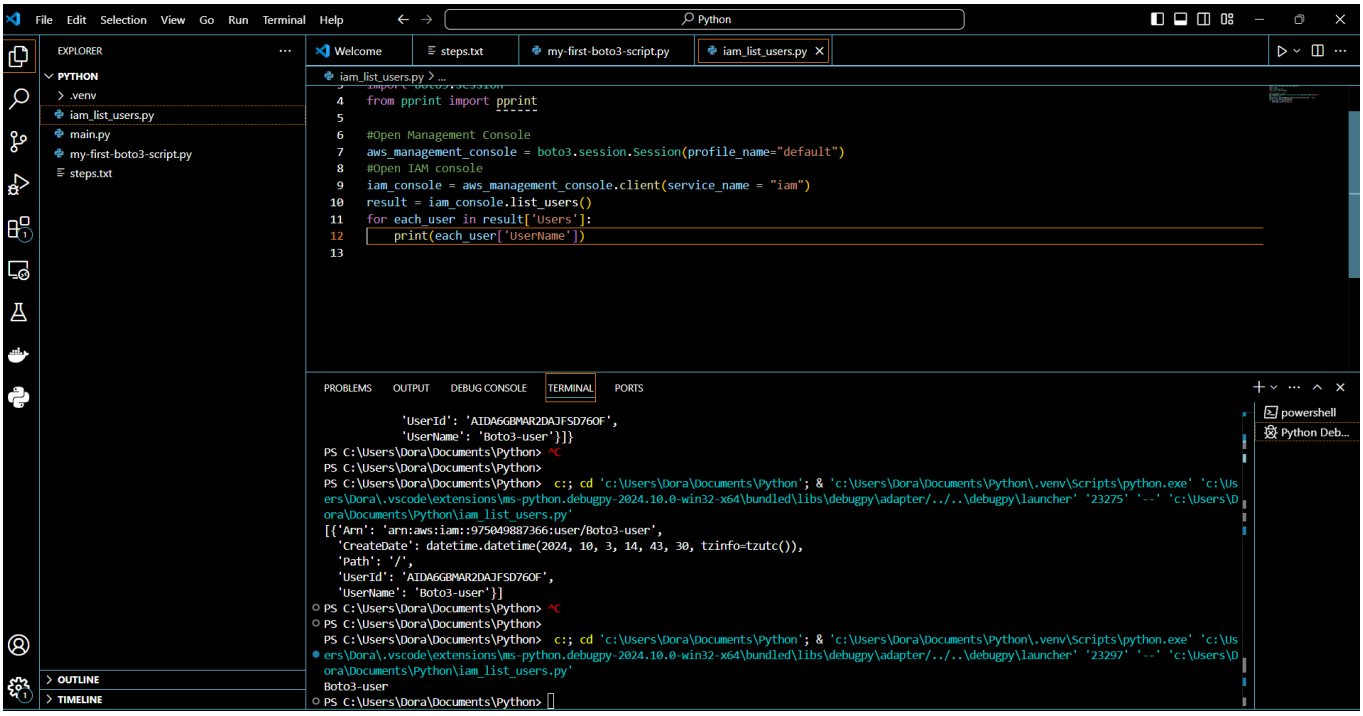


If we use pprint we get this:



If I want to print just users then I get output like this:


File Edit Selection View Go Run Terminal Help
Python
EXPLORER
PYTHON
.venv
iam_list_users.py
main.py
my-first-boto3-script.py
steps.txt
Welcome
steps.txt
my-first-boto3-script.py
iam_list_users.py
iam_list_users.py > ...
1 #Import all the modules and the libraries
2 import boto3
3 import boto3.session
4 from pprint import pprint
5
6 #Open Management Console
7 aws_management_console = boto3.session.Session(profile_name="default")
8 #Open IAM console
9 iam_console = aws_management_console.client(service_name = "iam")
10 result = iam_console.list_users()
11 pprint(result['Users'])
12
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
'HTTPStatusCode': 200,
'RequestId': '903ff597-5b49-47cf-8870-791bee5a5e64',
'RetryAttempts': 0},
'Users': [{'Arn': 'arn:aws:iam::975049887366:user/Boto3-user',
'CreateDate': datetime.datetime(2024, 10, 3, 14, 43, 30, tzinfo=tzutc()),
'Path': '/',
'UserId': 'AIDA6GBMAR2DAJFSD76OF',
'UserName': 'Boto3-user'}]}
PS C:\Users\Dora\Documents\Python> ^C
PS C:\Users\Dora\Documents\Python>
PS C:\Users\Dora\Documents\Python> c:; cd 'c:\Users\Dora\Documents\Python'; & 'c:\Users\Dora\Documents\Python\.venv\Scripts\python.exe' 'c:\Users\Dora\.vscode\extensions\ms-python.debugpy-2024.10.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' '23275' '--' 'c:\Users\Dora\Documents\Python\iam_list_users.py'
[{'Arn': 'arn:aws:iam::975049887366:user/Boto3-user',
'CreateDate': datetime.datetime(2024, 10, 3, 14, 43, 30, tzinfo=tzutc()),
'Path': '/',
'UserId': 'AIDA6GBMAR2DAJFSD76OF',
'UserName': 'Boto3-user'}]
PS C:\Users\Dora\Documents\Python>
powershell
Python Deb...
OUTLINE
TIMELINE
Ln 11, Col 21 Spaces: 4 UTF-8 CRLF {} Python 3.12.4 ('.venv': venv)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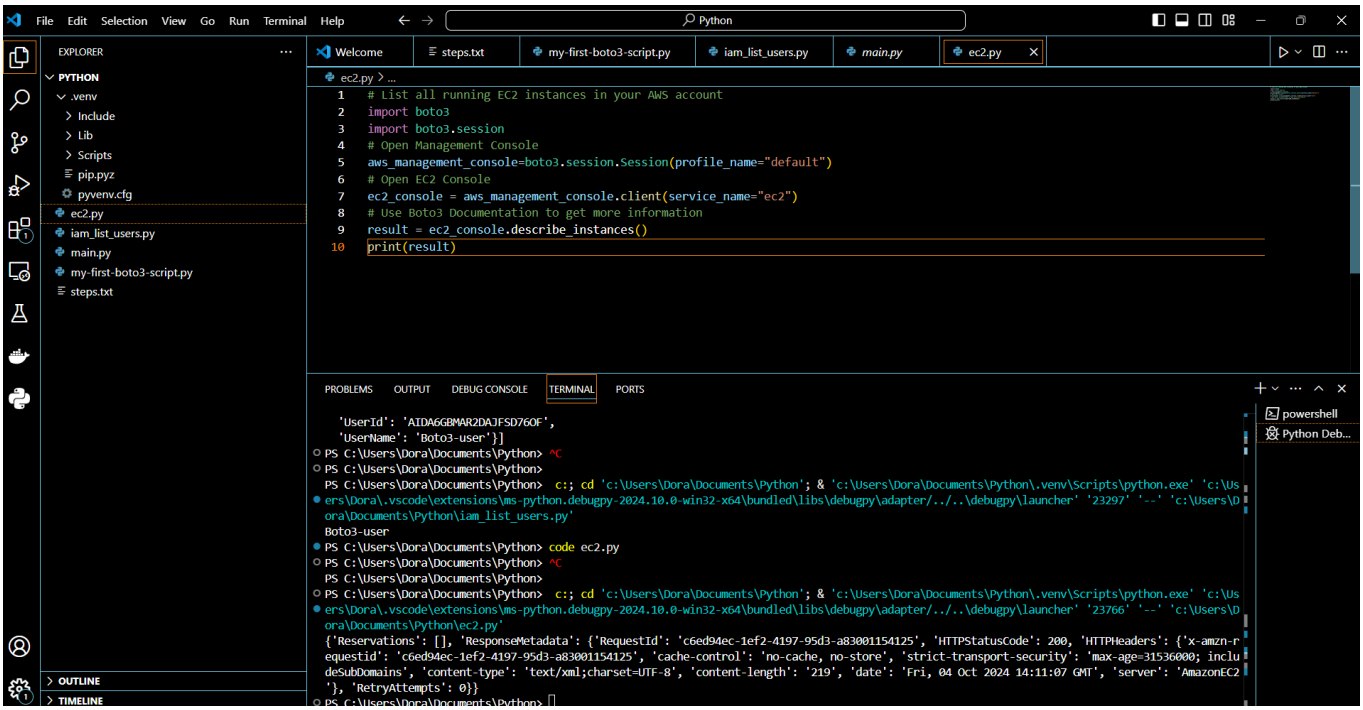
steps.txt
Welcome
steps.txt
my-first-boto3-script.py
iam_list_users.py
iam_list_users.py > ...
4 from pprint import pprint
5
6 #Open Management Console
7 aws_management_console = boto3.session.Session(profile_name="default")
8 #Open IAM console
9 iam_console = aws_management_console.client(service_name = "iam")
10 result = iam_console.list_users()
11 for each_user in result['Users']:
12 print(each_user['UserName'])
13
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
'UserId': 'AIDA6GBMAR2DAJFSD76OF',
'UserName': 'Boto3-user'}]}
PS C:\Users\Dora\Documents\Python> ^C
PS C:\Users\Dora\Documents\Python>
PS C:\Users\Dora\Documents\Python> c:; cd 'c:\Users\Dora\Documents\Python'; & 'c:\Users\Dora\Documents\Python\.venv\Scripts\python.exe' 'c:\Users\Dora\.vscode\extensions\ms-python.debugpy-2024.10.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' '23275' '--' 'c:\Users\Dora\Documents\Python\iam_list_users.py'
[{'Arn': 'arn:aws:iam::975049887366:user/Boto3-user',
'CreateDate': datetime.datetime(2024, 10, 3, 14, 43, 30, tzinfo=tzutc()),
'Path': '/',
'UserId': 'AIDA6GBMAR2DAJFSD76OF',
'UserName': 'Boto3-user'}]
PS C:\Users\Dora\Documents\Python> ^C
PS C:\Users\Dora\Documents\Python>
PS C:\Users\Dora\Documents\Python> c:; cd 'c:\Users\Dora\Documents\Python'; & 'c:\Users\Dora\Documents\Python\.venv\Scripts\python.exe' 'c:\Users\Dora\.vscode\extensions\ms-python.debugpy-2024.10.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' '23297' '--' 'c:\Users\Dora\Documents\Python\iam_list_users.py'
Boto3-user
PS C:\Users\Dora\Documents\Python>
powershell
Python Deb...
OUTLINE
TIMELINE


File Edit Selection View Go Run Terminal Help
Python
EXPLORER
PYTHON
.venv
Include
Lib
Scripts
pip.pyz
pyvenv.cfg
ec2.py
iam_list_users.py
main.py
my-first-boto3-script.py
steps.txt
OUTLINE
TIMELINE
Welcome
steps.txt
my-first-boto3-script.py
iam_list_users.py
main.py
ec2.py
ec2.py > ...
1 # List all running EC2 instances in your AWS account
2 import boto3
3 import boto3.session
4 # Open Management Console
5 aws_management_console=boto3.session.Session(profile_name="default")
6 # Open EC2 Console
7 ec2_console = aws_management_console.client(service_name="ec2")
8 # Use Boto3 Documentation to get more information
9 result = ec2_console.describe_instances()
10 print(result)
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
'UserId': 'AIDA6GBMAR2DAJFSD76OF',
'UserName': 'Boto3-user'}]
PS C:\Users\Dora\Documents\Python> ^C
PS C:\Users\Dora\Documents\Python>
PS C:\Users\Dora\Documents\Python> c:; cd 'c:\Users\Dora\Documents\Python'; & 'c:\Users\Dora\Documents\Python\.venv\Scripts\python.exe' 'c:\Users\Dora\.vscode\extensions\ms-python.debugpy-2024.10.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' '23297' '--' 'c:\Users\Dora\Documents\Python\iam_list_users.py'
Boto3-user
PS C:\Users\Dora\Documents\Python> code ec2.py
PS C:\Users\Dora\Documents\Python> ^C
PS C:\Users\Dora\Documents\Python>
PS C:\Users\Dora\Documents\Python> c:; cd 'c:\Users\Dora\Documents\Python'; & 'c:\Users\Dora\Documents\Python\.venv\Scripts\python.exe' 'c:\Users\Dora\.vscode\extensions\ms-python.debugpy-2024.10.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' '23766' '--' 'c:\Users\Dora\Documents\Python\ec2.py'
{'Reservations': [], 'ResponseMetadata': {'RequestId': 'c6ed94ec-1ef2-4197-95d3-a83001154125', 'HTTPStatusCode': 200, 'HTTPHeaders': {'x-amzn-requestid': 'c6ed94ec-1ef2-4197-95d3-a83001154125', 'cache-control': 'no-cache, no-store', 'strict-transport-security': 'max-age=31536000; includeSubDomains', 'content-type': 'text/xml;charset=UTF-8', 'content-length': '219', 'date': 'Fri, 04 Oct 2024 14:11:07 GMT', 'server': 'AmazonEC2'}, 'RetryAttempts': 0}}
powershell
Python Deb...