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Batch: LISUM21

Submitted on: 9thth May 2023

Submitted to: Data Glacier

AWS Deployment Steps:

1. **Code**
   a. **App.py**

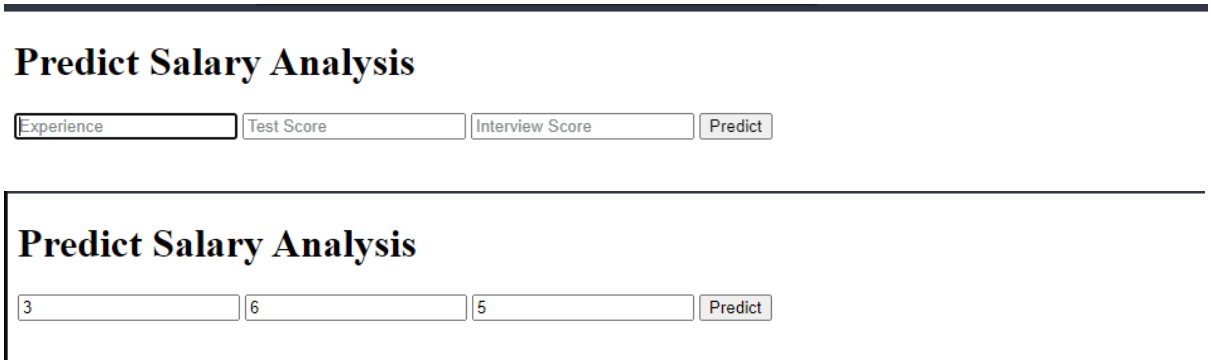
app.py M

Flask-Deployment > app.py

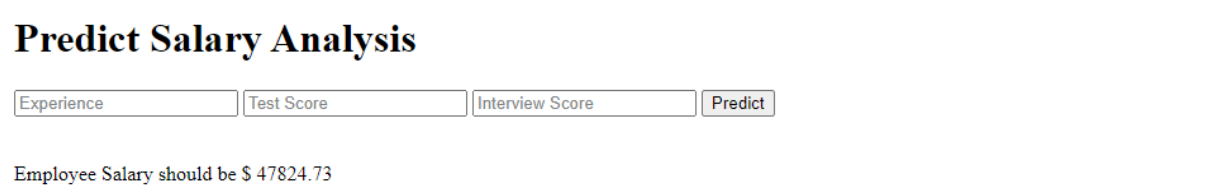
```python
app = Flask(__name__)
model = pickle.load(open('model.pkl', 'rb'))

@app.route('/')
def home():
    return render_template('index.html')

@app.route('/predict',methods=['POST'])
def predict():

    int_features = [int(x) for x in request.form.values()]
    final_features = [np.array(int_features)]
    prediction = model.predict(final_features)

    output = round(prediction[0], 2)

    return render_template('index.html', prediction_text='Employee Salary should be $ {}'.format(output))


if __name__ == "__main__":
    app.run(host='0.0.0.0', port=5000)
```

Change the host to “0.0.0.0.” and host to 5000 (so the aws could recognize it)

2. **Insert the values:**

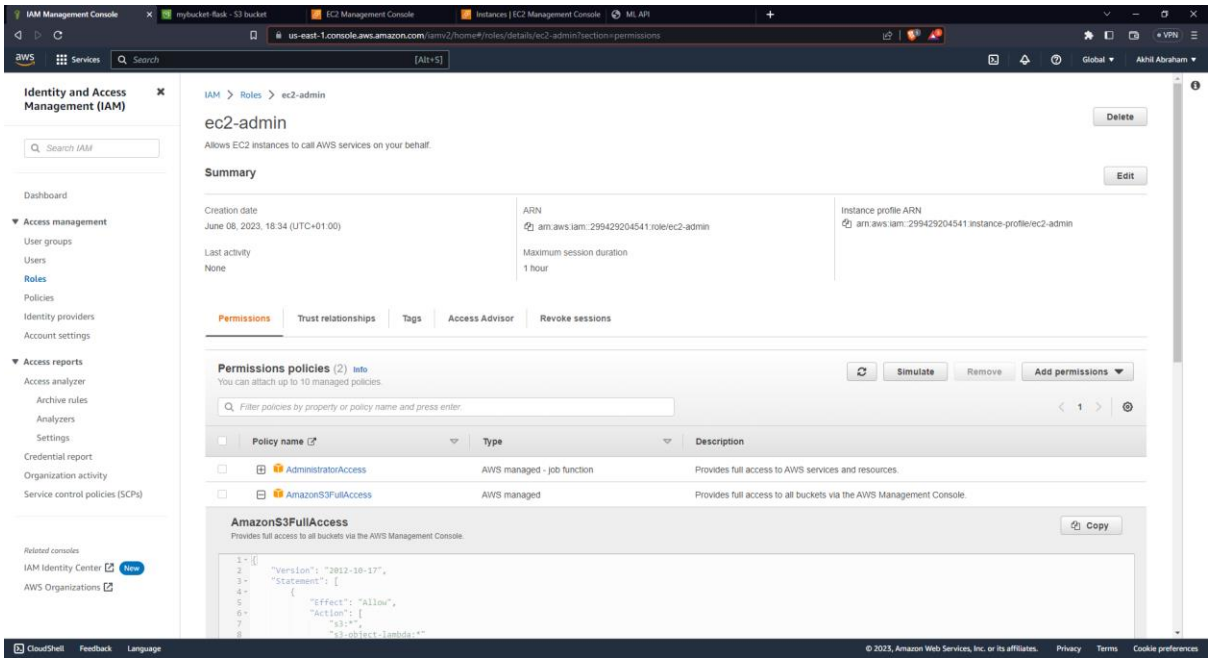


3. **Results**

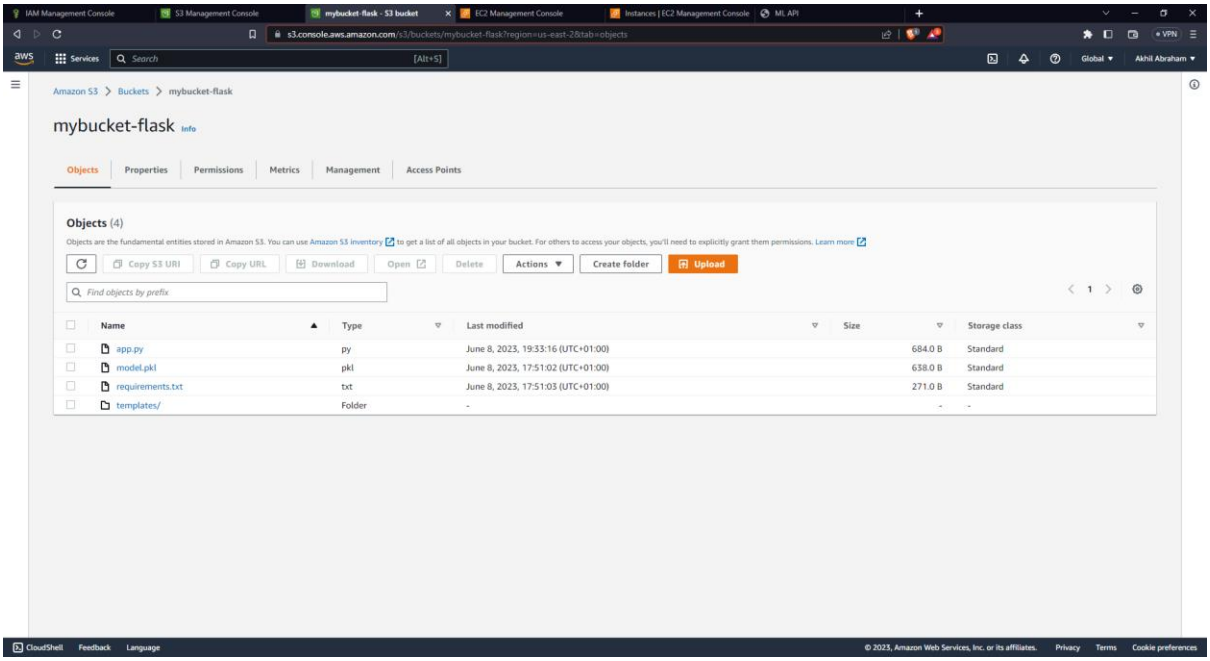


The ML program runs perfectly in the local system.

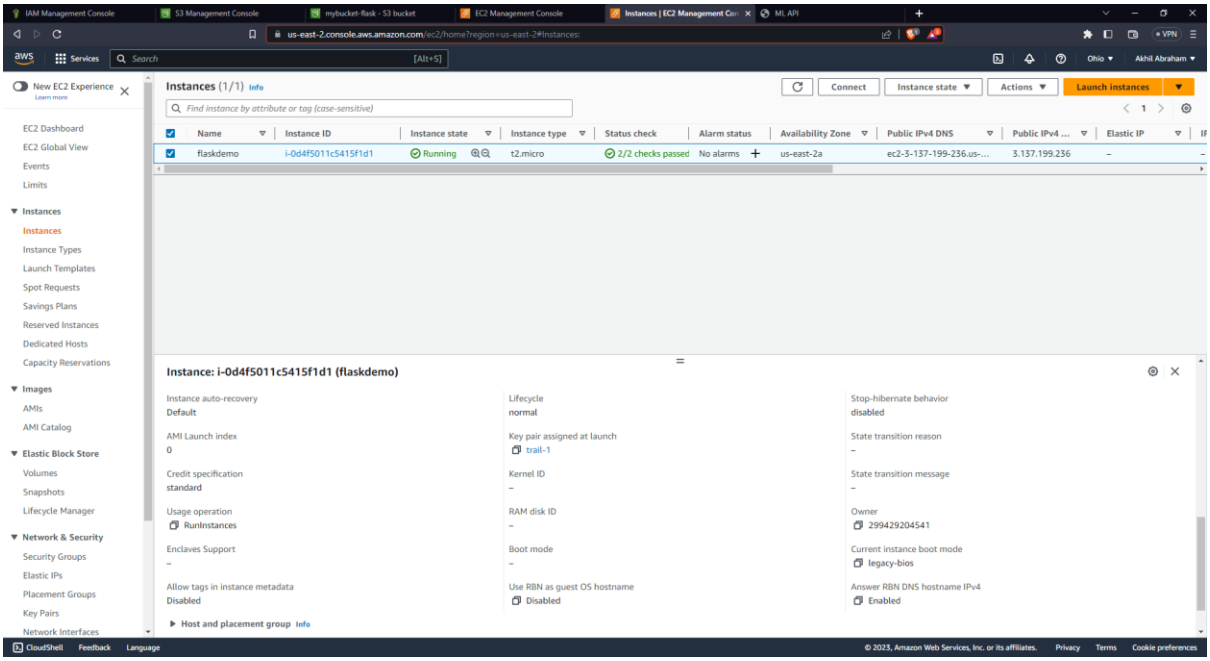
4. **Create IAM role S3 access:**



5. **Upload to S3 bucket:**



6. **Create EC2 instance with SSH and HTML:**



7. **Install required packages:**

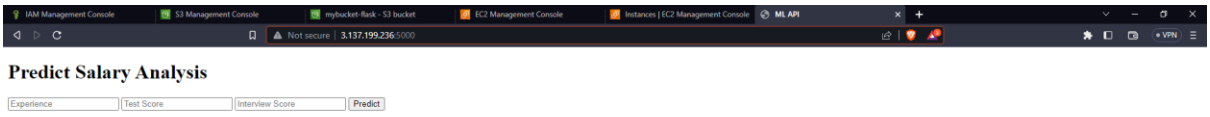
Installed python3, pip3, numpy, sklearn, flask, pandas, gunicorn in aws CLI

```
C:\Users\ASUS\Week4\Flask-Deployment>ssh -i ./trail-1.pem ubuntu@ec2-3-137-199-236.us-east-2.compute.amazonaws.com
Welcome to Ubuntu 22.04.2 LTS (GNU/Linux 5.19.0-1025-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Thu Jun  8 17:48:23 UTC 2023

  System load:  0.48046875        Processes:             99
  Usage of /:   29.6% of 7.57GB   Users logged in:       0
  Memory usage: 31%               IPv4 address for eth0: 172.31.7.250
  Swap usage:   0%


Expanded Security Maintenance for Applications is not enabled.

43 updates can be applied immediately.
28 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

7 additional security updates can be applied with ESM Apps.
Learn more about enabling ESM Apps service at https://ubuntu.com/esm


Last login: Thu Jun  8 17:24:21 2023 from 81.106.51.119
```

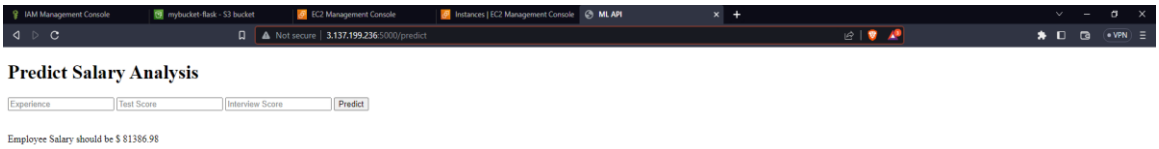
8. Copy the contents of your local repository to s3 bucket:

```
ubuntu@ip-172-31-7-250:~$ aws s3 cp s3://mybucket-flask/app.py app.py
download: s3://mybucket-flask/app.py to ./app.py
ubuntu@ip-172-31-7-250:~$ aws s3 cp s3://mybucket-flask/requirements.txt requirements.txt
download: s3://mybucket-flask/requirements.txt to ./requirements.txt
ubuntu@ip-172-31-7-250:~$ ls
app.py  requirements.txt
ubuntu@ip-172-31-7-250:~$ aws s3 cp s3://mybucket-flask/model.pkl model.pkl
download: s3://mybucket-flask/model.pkl to ./model.pkl
ubuntu@ip-172-31-7-250:~$ aws s3 cp s3://mybucket-flask/template template
fatal error: An error occurred (404) when calling the HeadObject operation: Key "template" does not exist
ubuntu@ip-172-31-7-250:~$ aws s3 cp s3://mybucket-flask/templates templates
fatal error: An error occurred (404) when calling the HeadObject operation: Key "templates" does not exist
ubuntu@ip-172-31-7-250:~$ mkdir templates
ubuntu@ip-172-31-7-250:~$ aws s3 cp s3://mybucket-flask/templates/index.html index.html
download: s3://mybucket-flask/templates/index.html to ./index.html
ubuntu@ip-172-31-7-250:~$ ls
app.py  index.html  model.pkl  requirements.txt  templates
ubuntu@ip-172-31-7-250:~$ aws s3 cp s3://mybucket-flask/templates/index.html templates/index.html
download: s3://mybucket-flask/templates/index.html to templates/index.html
ubuntu@ip-172-31-7-250:~$ ls
app.py  index.html  model.pkl  requirements.txt  templates
```

9. Run the program:



10. Result:


IAM Management Console
mybucket-flask - S3 bucket
EC2 Management Console
Instances | EC2 Management Console
ML API
Not secure | 3.137.199.236:5000/predict
VPN
Predict Salary Analysis
Experience
Test Score
Interview Score
Predict
Employee Salary should be $ 81386.98