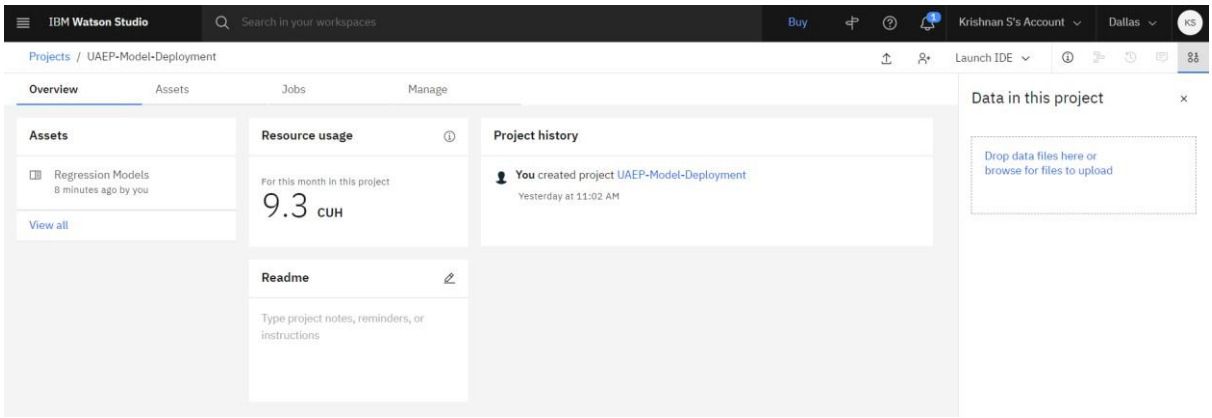
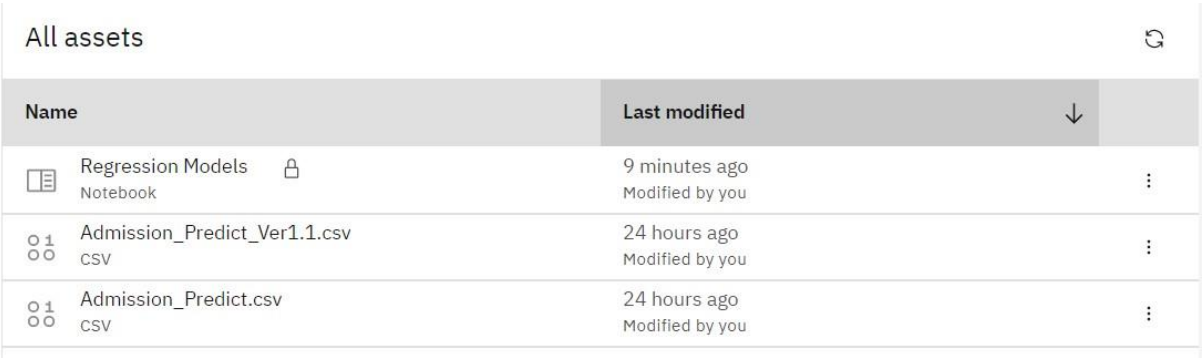
Training ML Model on IBM Watson

TEAM ID: PNT2022TMID27078

PROJECT: University Admit Eligibility Predictor

i) Setting up Watson Studio for running Jupyter notebooks





ii) Training and saving the model in IBM Watson Machine Learning Service

PERSISTING THE MULTIPLE LINEAR REGRESSION MODEL AND DEPLOYING IT IN IBM CLOUD

In [60]:
```
#Set Python Version
software_spec_uid = client.software_specifications.get_uid_by_name("runtime-22.1-py3.9")
software_spec_uid
```

Out[60]:
```
'12b83a17-24d8-5082-900f-0ab31fbfd3cb'
```

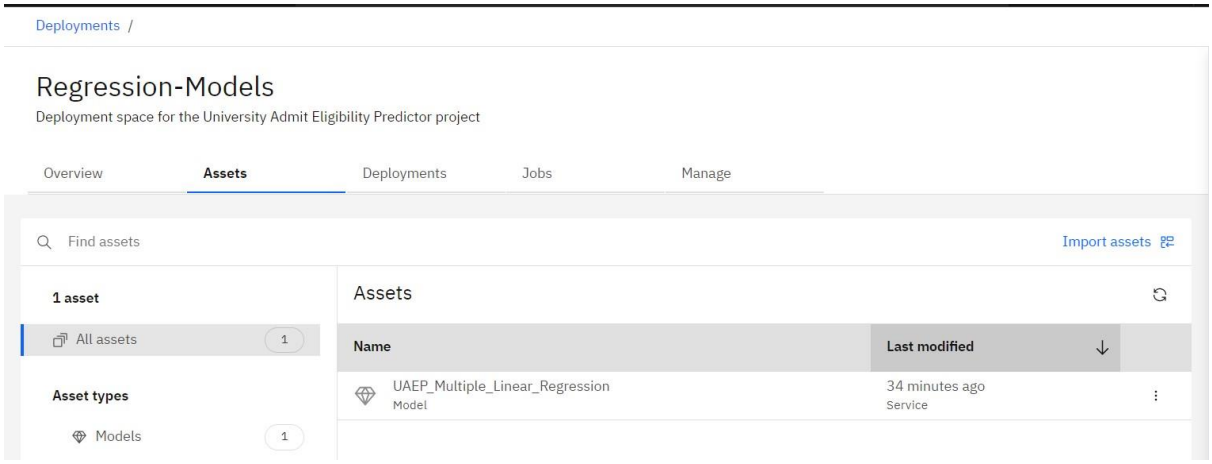
In [61]:
```
model_details = client.repository.store_model(model = multiple_lin_reg, meta_props={
    client.repository.ModelMetaNames.NAME: "UAEP_Multiple_Linear_Regression",
    client.repository.ModelMetaNames.TYPE: "scikit-learn_1.0",
    client.repository.ModelMetaNames.SOFTWARE_SPEC_UID: software_spec_uid
}
)

model_id = client.repository.get_model_id(model_details)
```

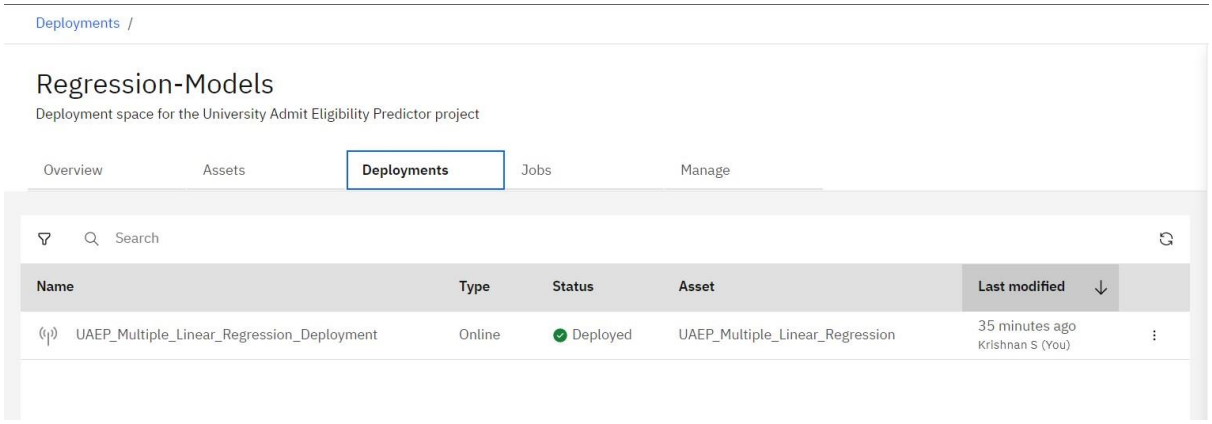
In [62]:
```
model_id
```

Out[62]:
```
'8083e827-e81f-40d1-84ab-20d511771869'
```

Assets:



Deployments:



iii) Testing the created model using the API created for the deployed model:

```
import requests

# NOTE: you must manually set API_KEY below using information retrieved from your IBM Cloud account.
API_KEY = "<Your-API-Key>"
token_response = requests.post('https://iam.cloud.ibm.com/identity/token', data={"apikey":
 API_KEY, "grant_type": 'urn:ibm:params:oauth:grant-type:apikey'})
mltoken = token_response.json()["access_token"]

header = {'Content-Type': 'application/json', 'Authorization': 'Bearer ' + mltoken}

# NOTE: manually define and pass the array(s) of values to be scored in the next line
payload_scoring = {"input_data": [{"field": [["GRE Score","TOEFL Score","University Rating","SOP","LOR ","CGPA", "Research"]], "values": [[326, 110, 2, 3.5, 4, 9.23, 1]]}]}

response_scoring = requests.post('https://us-south.ml.cloud.ibm.com/ml/v4/deployments/uaep_deployment/predictions?version=2022-11-12', json=payload_scoring,
 headers={'Authorization': 'Bearer ' + mltoken})
print("Scoring response")
print(response_scoring.json())
```

```
Scoring response
{'predictions': [{'fields': ['prediction'], 'values': [[[0.8448151378927107]]]}]}
```