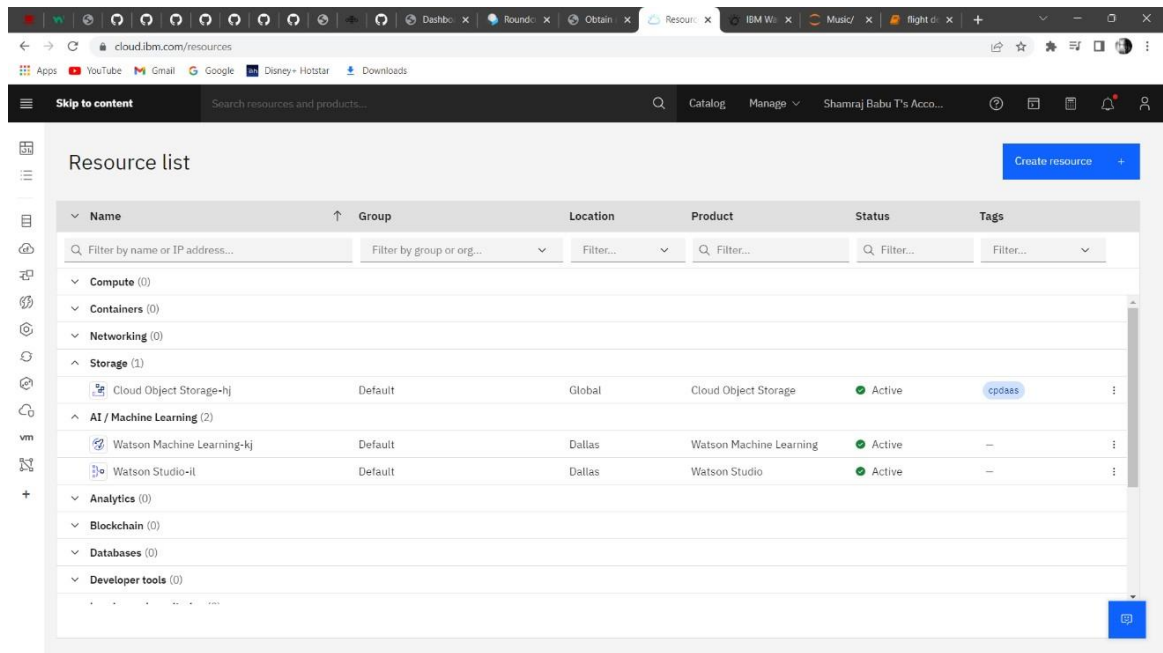


TRAIN THE ML MODEL ON IBM CLOUD

Team ID	PNT2022TMID44333
Project Name	Developing a Flight Delay Prediction Model Using Machine Learning

Create IBM Cloud Required Resources:



Deploy the Model on IBM Watson Studio:

```
pip install -U ibm-watson-machine-learning
from ibm_watson_machine_learning import APIClient
import json
```

In [63]:

In [64]:

```
wml_credentials = {
    "apikey": "4fJbepuok7oCO1UkeKU831Sq5rz5-JP0R_hljeB2oaEL",
    "url": "https://us-south.ml.cloud.ibm.com"
}
```

In [65]:

```
wml_client = APIClient(wml_credentials)
wml_client.spaces.list()
```

```
SPACE_ID="deaaa6e0-4843-467d-94d8-71d0272de83b"
```

In [67]:

```
wml_client.set.default_space(SPACE_ID)
```

In [68]:

```
wml_client.software_specifications.list(500)
```

```
import sys
```

In [70]:

```
sys.version
```

In [71]:

```
pip install ibm-watson-machine-learning
```

```
import sklearn
```

```
sklearn.__version__
```

In [93]:

```
MODEL_NAME = "RandomForestClassifier("
```

```
DEPLOYMENT_NAME = 'flight delay'
```

```
DEMO_MODEL = model
```

In [94]:

```
software_spec_uid = wml_client.software_specifications.get_id_by_name('runtime-22.1-py3.9')
```

In [95]:

```
model_props = {  
    wml_client.repository.ModelMetaNames.NAME: MODEL_NAME,  
    wml_client.repository.ModelMetaNames.TYPE: 'scikit-learn_1.0',  
    wml_client.repository.ModelMetaNames.SOFTWARE_SPEC_UID: software_spec_uid  
}
```

In [96]:

```
model_details = wml_client.repository.store_model(  
    model=DEMO_MODEL,  
    meta_props=model_props,  
    training_data=x_train,  
    training_target=y_train  
)
```

In [97]:

```
model_details
```

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

In [99]:

```
deployment_props = {
    wml_client.deployments.ConfigurationMetaNames.NAME:DEPLOYMENT_NAME,
    wml_client.deployments.ConfigurationMetaNames.ONLINE: {}
}
```

In [101]:

```
deployment_props = {
    wml_client.deployments.ConfigurationMetaNames.NAME:DEPLOYMENT_NAME,
    wml_client.deployments.ConfigurationMetaNames.ONLINE: {}
}
```

Deployment The Model:

The screenshot displays the IBM Watson Studio web interface. The browser address bar shows the URL: `dataplatfrom.cloud.ibm.com/ml-runtime/spaces/c18f32cf-9b64-4125-b077-545490aa89ce/deployments?context=cpdaas`. The page header includes the IBM Watson Studio logo, a search bar, and user account information for 'Shamraj Babu T's Account' in the 'Dallas' region. The main content area is titled 'model' and has tabs for 'Overview', 'Assets', 'Deployments' (which is selected), 'Jobs', and 'Manage'. Below the tabs is a table listing deployments. The table has columns for 'Name', 'Type', 'Status', 'Asset', and 'Last modified'. One deployment is listed: 'flight_delay_deployment' with a status of 'Online' and 'Deployed'. The 'Last modified' column shows '5 seconds ago' by 'Shamraj Babu T (You)'. At the bottom of the table, it indicates 'Items per page: 20' and '1-1 of 1 items'.

Name	Type	Status	Asset	Last modified
flight_delay_deployment	Online	Deployed	RandomForestClassifier()	5 seconds ago Shamraj Babu T (You)

Testing the Deployment Model:

127.0.0.1:5000/predict

datapatform.cloud.ibm.com/ml-runtime/deployments/a49cde5f-7a8f-4af8-9418-45bdef9ed9d9/test?space_id=c18f32cf-9b94-4125-b077-545490aa89ce&context=cpdaas&flush=true

IBM Watson Studio

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Shamraj Babu T's Account

Dallas

SB

Deployments / model / RandomForestClassifier0 /

flight_delay_deployment Deployed Online

API reference **Test**

Enter input data

Text input

JSON input

Enter data manually or use a CSV file to populate the spreadsheet. Max file size is 50 MB.

[Download CSV template](#) [Browse local files](#) [Search in space](#) [Clear all](#)

	f0 (float)	f1 (float)	f2 (float)	f3 (float)	f4 (float)	f5 (float)	f6 (float)	f7 (float)	f8 (float)
1	1399	1	2	2	1	5	1	22	1
2	1823	3	4	23	2	4	23	6	3
3	1597	4	7	14	3	3	14	3	14
4	1768	6	5	7	4	2	18	8	19
5	1399	2	3	13	5	1	5	13	4
6									
7									

5 rows, 9 columns

Predict

New Tab

flight images hd

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datapatform.cloud.ibm.com/ml-runtime/deployments/a49cde5f-7a8f-4af8-9418-45bdef9ed9d9/test?space_id=c18f32cf-9b94-4125-b077-545490aa89ce&context=cpdaas&flush=true

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Prediction results

Prediction type

Binary classification

Prediction percentage

5 Records

Confidence level distribution

5

Table view

JSON view

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