DEVELOPING A FLIGHT DELAY PREDICTION MODEL USING MACHINE LEARNING

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SPRINT-2

Outline:

- Creating IBM Cloud account & required resources
- Deploy our model in IBM Watson
- Creating Dashboard using HTML/CSS
- Create web app and Hosting in flask
- Testing web app

Creating IBM Cloud account & required resources

First need to create IBM cloud account by using SI Mailid and SI password which is provided by IBM in profile.
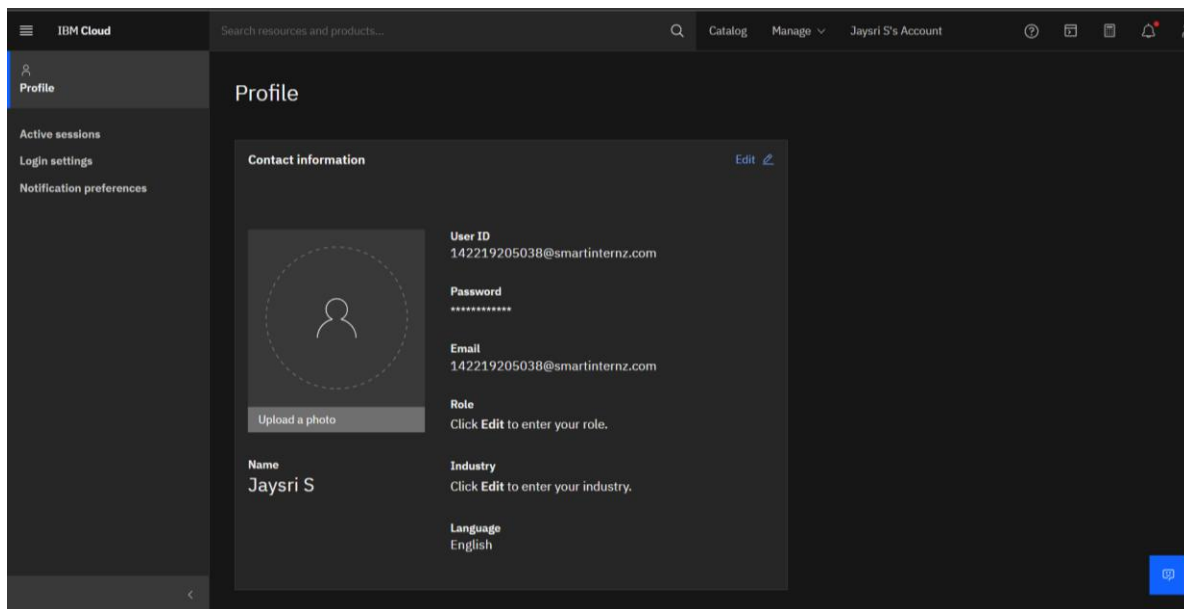
Below dashboard of an account after created
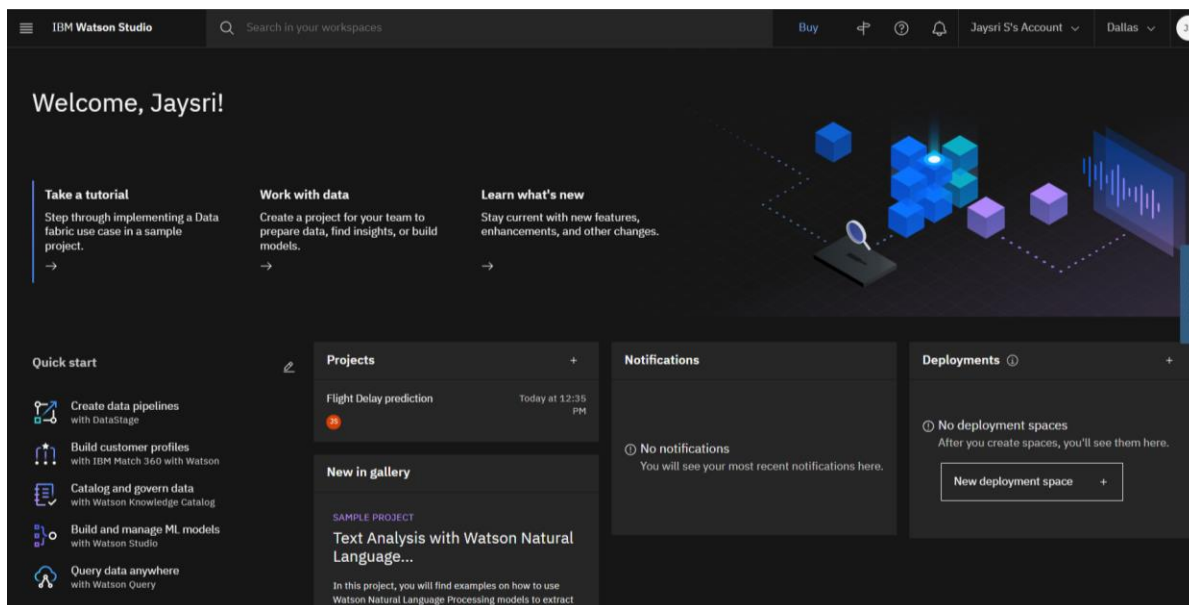
Deploy our model in IBM Watson:

To deploy ML model in IBM cloud, need to create project in IBM Watson. After successful creation of project import .ipynb file of sprint-1 which ML models are build in Jupyter notebook.

Upload required datasets and import it. Deploy model using following code,

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

from ibm_watson_machine_learning import APIClient

import json

import numpy as np wml_cred={

"apikey":"okbr7ARnOQjyplTOyvNFC2QVkCF6q7afpci065Hucby8",
"url":"https://us-south.ml.cloud.ibm.com"

}

wml_clients=APIClient(wml_cred) wml_clients.spaces.list()

space_id="6d7c1218-3aca-4256-be3d-d610732530b1"

wml_clients.set.default_space(space_id)
wml_clients.software_specifications.list(500)

MODEL_NAME="randomforest"

DEPLOYMENT_NAME="rf_deployment"

DEMO_MODEL=rf

soft_sepc_id=wml_clients.software_specifications.get_id_by_name("runtime-22.1-py3.9")


model_props={
wml_clients.repository.ModelMetaNames.NAME:MODEL_NAME,
wml_clients.repository.ModelMetaNames.TYPE:"scikit-learn_1.0",
wml_clients.repository.ModelMetaNames.SOFTWARE_SPEC_UID: soft_sepc_id

}
model_details=wml_clients.repository.store_model(model=DEMO_MODEL,meta_props=model_props,trai        ning_data=x_train,        model_details
training_target=y_train.values.ravel())

model_id=wml_clients.repository.get_model_id(model_details) dep_props={
```

wml_clients.deployments.ConfigurationMetaNames.NAME:DEPLOYMENT_NAME, wml_clients.deployments.ConfigurationMetaNames.ONLINE:{}

}

deployment=wml_clients.deployments.create(artifact_uid=model_id,meta_props=dep_props)

NOTE: APIKey must need to create to deploy and connect API

After successful of deployment, deployed is appeared in Deployment section as follow,
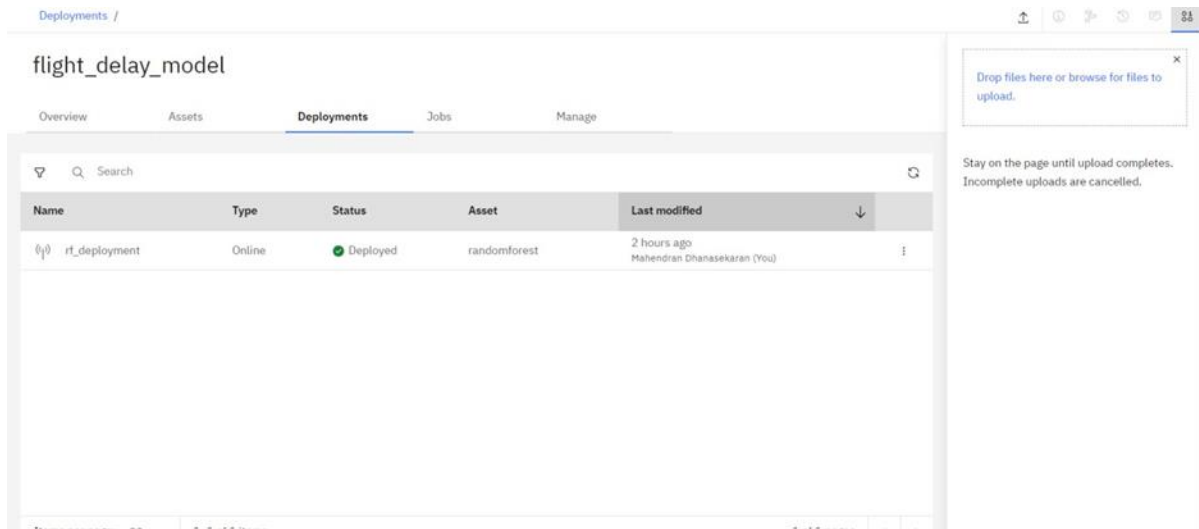
Testing web app:

FULL-HOME PAGE:

DATA ENTRY HOME PAGE:

FLIGHT DELAY PREDICTION

ENTER THE FLIGHT NUMBER : 547640

MONTH : 10

DAY OF MONTH : 10

DAY OF WEEK : 5

ORIGIN : ATL - Hartsfield-Jackson Atlanta International

DESTINATION : JFK - John F. Kennedy International

ATL - Hartsfield-Jackson Atlanta International
DTW - Detroit Metropolitan Wayne County
SEA - Seattle-Tacoma International
MSP - Minneapolis–Saint Paul International
JFK - John F. Kennedy International

ENTER THE FL

SCHEDULED DEPARTURE TIME :

Hour : 00   Minutes : 00

ENTER THE FLIGHT TIMINGS

SCHEDULED DEPARTURE TIME :

Hour : 6   Minutes : 00

ACTUAL DEPARTURE TIME :

Hour : 10   Minutes : 00

SCHEDULED ARRIVAL TIME :

Hour : 7   Minutes : 00

PREDICT

RESULT PAGE: