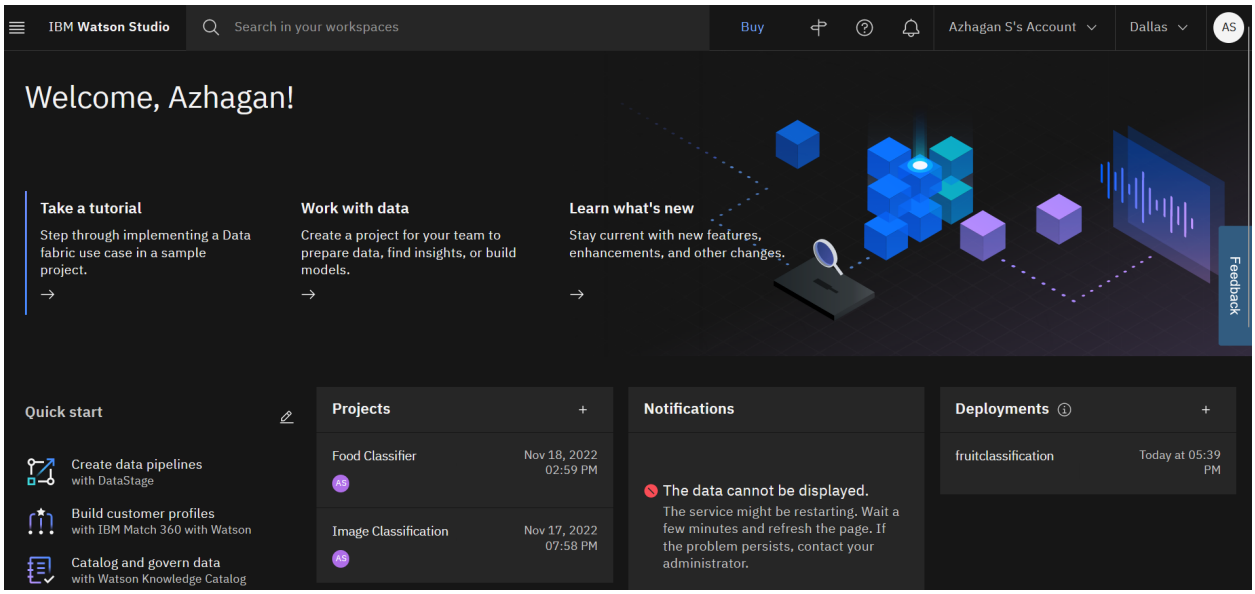
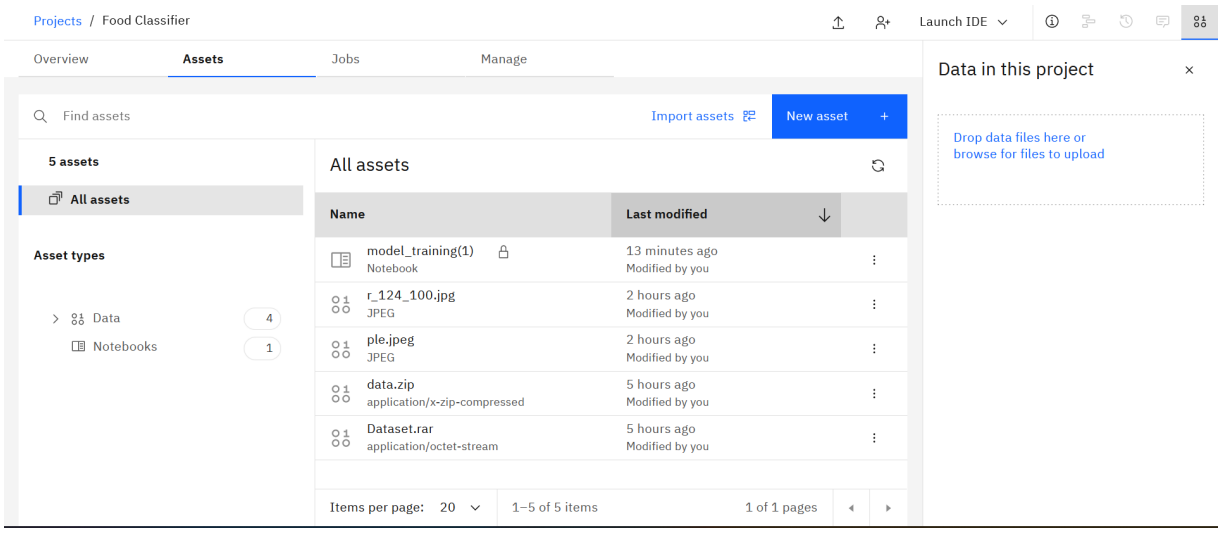
IBM Cloud Model Training

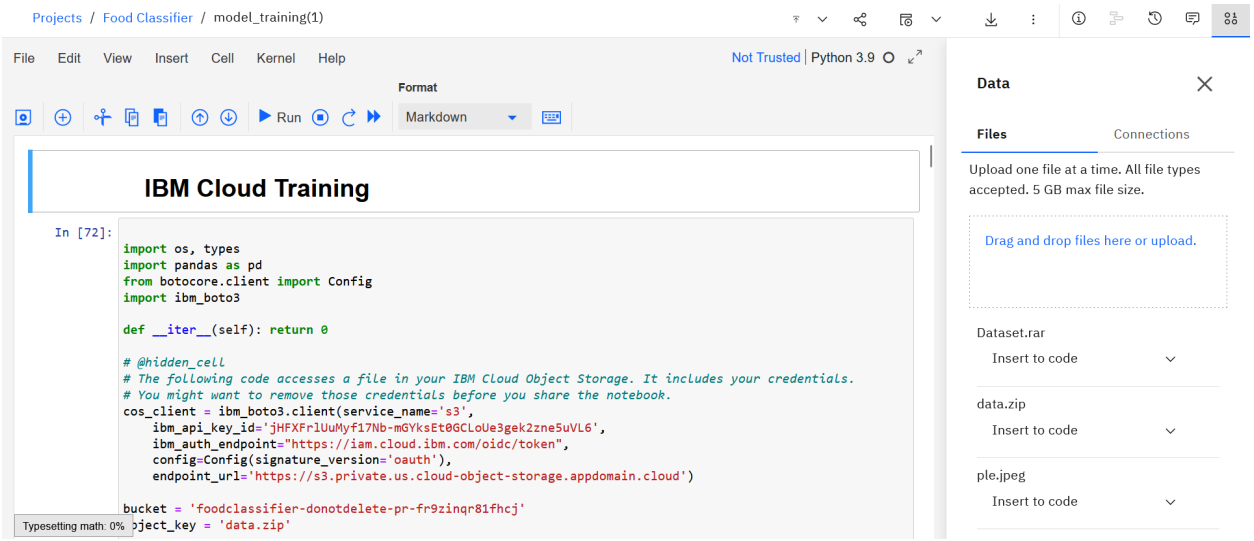
Date	15 October 2022
Team ID	PNT2022TMID33204
Project Name	AI Based Food Analyzer for fitness Enthusiasts

We trained the model on a local machine and tested, now we going to train the model on IBM Cloud, for that - Go to IBM Cloud and Create a New dashboard in IBM Watson Studio and then create a Jupiter Notebook





Import Necessary Libraries and import the Datasets



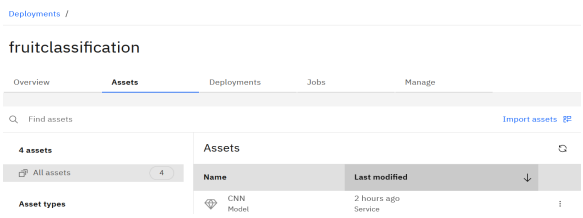
Save the model as tar.gz file

```
Epoch 1/2
/tmp/wsuser/ipykernel_164/3924664455.py:1: UserWarning: `Model.fit_generator` is deprecated and will be removed in a future version. Please use `Model.fit`, which supports generators.
  classifier.fit_generator(
526/526 [==============================] - 31s 59ms/step - loss: 0.1591 - accuracy: 0.9455 - val_loss: 0.0732 - val_accuracy: 0.9725
Epoch 2/2
526/526 [==============================] - 31s 58ms/step - loss: 0.0011 - accuracy: 1.0000 - val_loss: 0.0109 - val_accuracy: 1.0000
Out[83]: <keras.callbacks.History at 0x7f6139d87790>
```

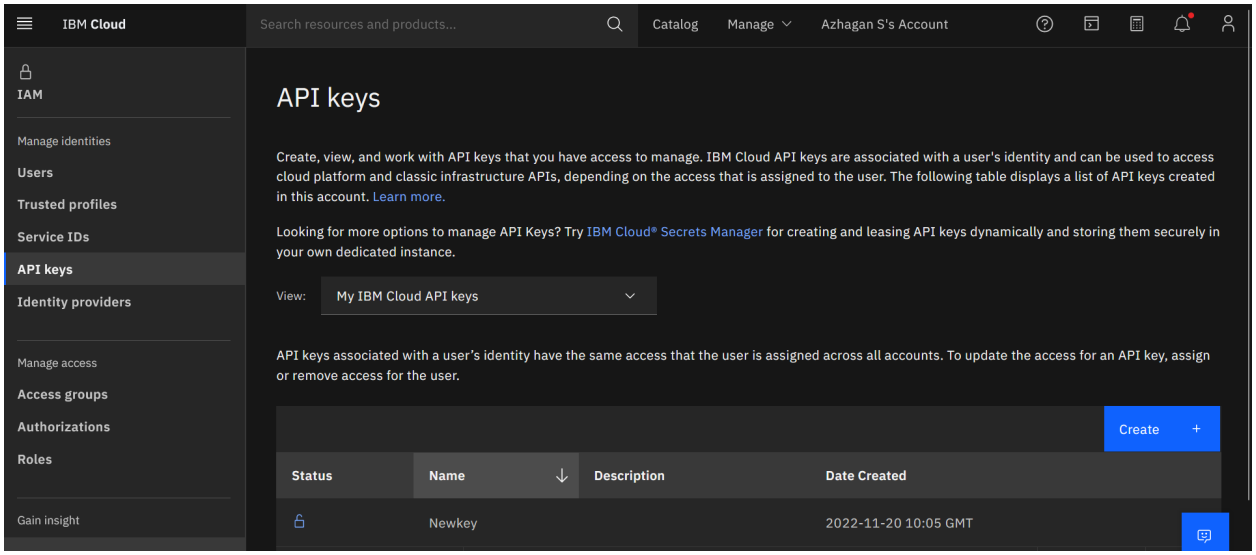
```
In [84]: classifier.save('fruits.h5')
```

```
In [85]: !tar -zcvf Food-Classifier-model_new.tgz fruits.h5
fruits.h5
```

And Import the API from IBM Cloud. Create a new Deployment Space in the Watson Machine Learning Platform. For that go through the Necessary Steps and



Use the (Dallas) URL and API keys in the Program…



Using the API Key from the Access(IAM)

In [88]:
```
from ibm_watson_machine_learning import APIClient
wml_credentials={
    "url" : "https://us-south.ml.cloud.ibm.com",
    "apikey":"6RuJNsiiYGeN8-aHFYUkDZHfqbh6Xcd-buHgPRoA7Fci"
}

client=APIClient(wml_credentials)
```

In [89]:
```
def guid_from_space_name(client, space_name):
    space=client.spaces.get_details()
    return(next(item for item in space['resources'] if item['entity']["name"]==space_name)['metadata']['id'])
```

In [90]:
```
space_uid=guid_from_space_name(client, 'fruitclassification')
print("Space UID = "+space_uid)
```

```
Space UID = febef359-356f-48f8-9541-ba82916a0754
```

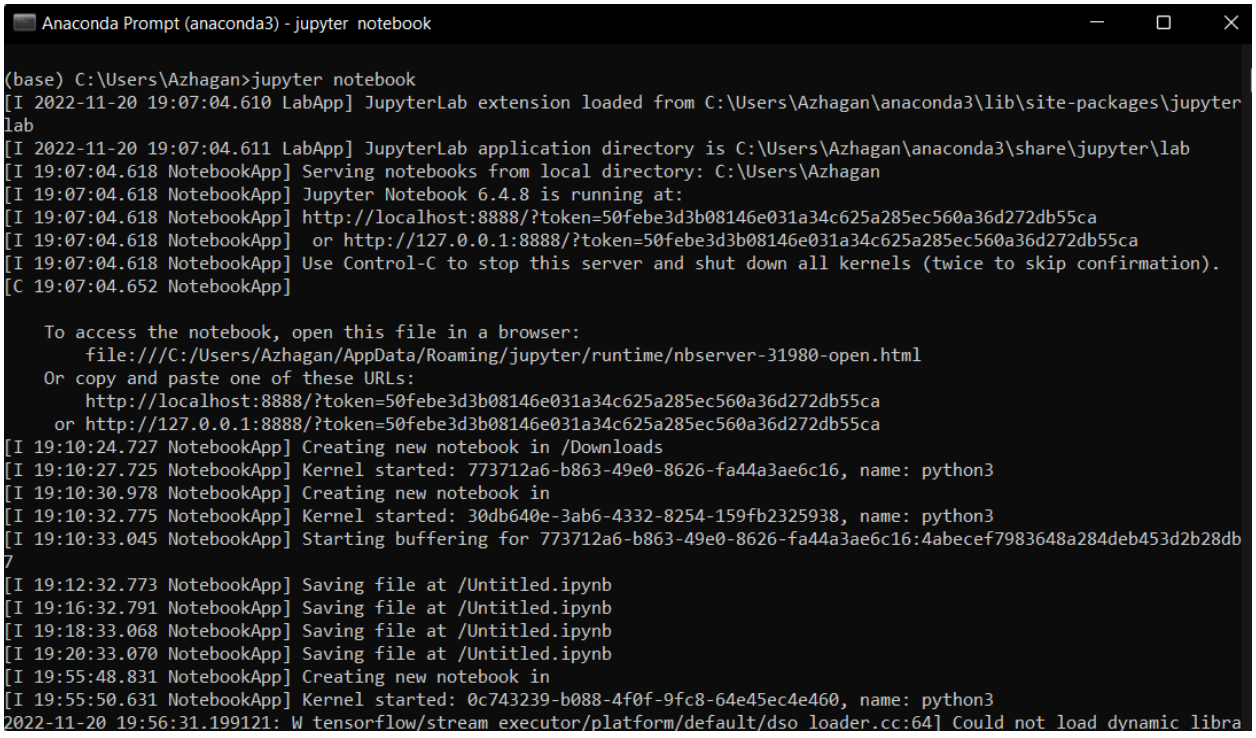
In [91]:
```
client.set.default_space(space_uid)
```

Out[91]:
```
'SUCCESS'
```

Save the model and Download it

```
In [93]: software_spec_uid = client.software_specifications.get_uid_by_name("tensorflow_rt22.1-py3.9")

In [94]: software_spec_uid

   Out[94]: 'acd9c798-6974-5d2f-a657-ce06e986df4d'

In [95]: !tar -zcvf Food-Classifier-model_new.tgz fruits.h5

            fruits.h5

In [96]: model_details=client.repository.store_model(model='Food-Classifier-model_new.tgz',meta_props={
             client.repository.ModelMetaNames.NAME:"CNN",
             client.repository.ModelMetaNames.TYPE:"tensorflow_2.7",
             client.repository.ModelMetaNames.SOFTWARE_SPEC_UID:software_spec_uid}
                                                  )
         model_id=client.repository.get_model_id(model_details)

In [99]: model_id

   Out[99]: 'e1106521-6922-457f-ad66-ffa5a833da9c'

:n [101]: client.repository.download(model_id,'my_model1.tar.gz')

            Successfully saved model content to file: 'my_model1.tar.gz'

  Out[101]: '/home/wsuser/work/my_model1.tar.gz'
```

Now Go to Anaconda Prompt and open a Jupyter Notebook



Now in Jupyter Notebook , Import the IBM Credentials and Download the model to the Local Machine as a Tar.gz file

jupyter IBM_cloud_pred Last Checkpoint: an hour ago (autosaved)

Logout

File Edit View Insert Cell Kernel Widgets Help

Not Trusted | Python 3 (ipykernel)

Run Code

```
Requirement already satisfied: colorama in c:\users\azhagan\anaconda3\lib\site-packages (from tqdm->watson-machine-learning-cli
ent) (0.4.4)
```

In [3]:
```
from ibm_watson_machine_learning import APIClient
wml_credentials={
    "url" : "https://us-south.ml.cloud.ibm.com",
    "apikey":"6RuJNsiiYGeN8-aHFYUkDZHfqbh6Xcd-buHgPRoA7Fci"
}

client=APIClient(wml_credentials)
```

In [4]:
```
def guid_from_space_name(client, space_name):
    space=client.spaces.get_details()
    return(next(item for item in space['resources'] if item['entity']["name"]==space_name)['metadata']['id'])
```

In [5]:
```
space_uid=guid_from_space_name(client, 'fruitclassification')
print("Space UID = "+space_uid)
```

```
Space UID = febef359-356f-48f8-9541-ba82916a0754
```

In [6]:
```
client.set.default_space(space_uid)
```

Out[6]:
```
'SUCCESS'
```

In [7]:
```
client.repository.download("e1106521-6922-457f-ad66-ffa5a833da9c",'fruits.tar.gz')
```

```
Successfully saved model content to file: 'fruits.tar.gz'
```

Out[7]:
```
'C:\\Users\\Azhagan/fruits.tar.gz'
```

In [ ]:

As Usual Test the Downloaded IBM Cloud Trained model with some Test images