IBM Cloud

Create Account and Train the Model

IBM CLOUD ACCOUNT CREATION

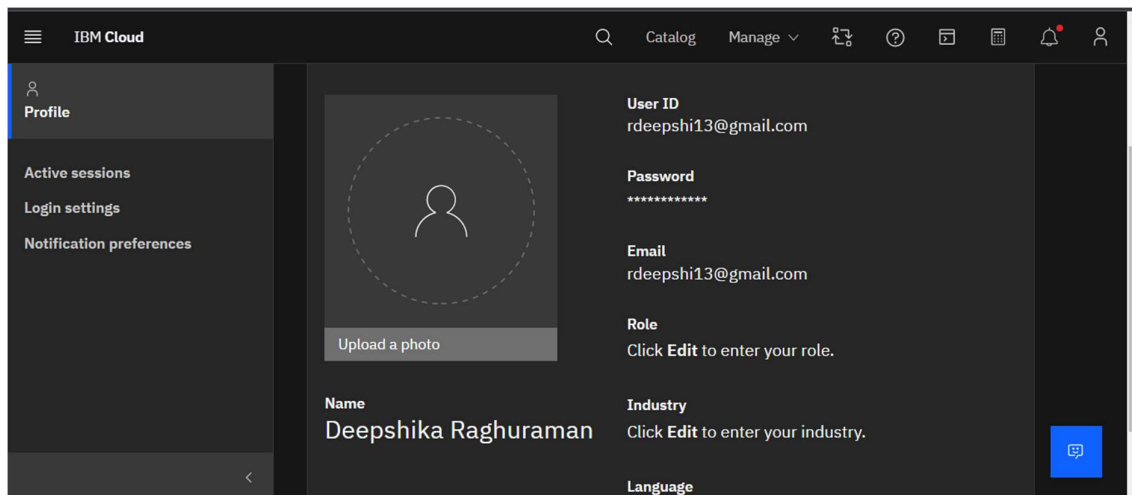ICT Academy SkillsNetwork

Account Details

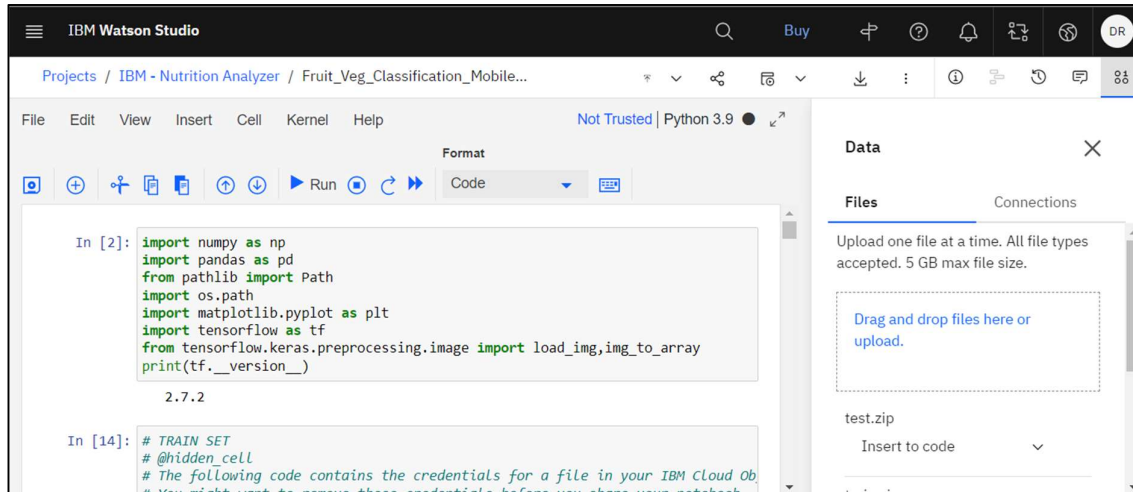Email ID: rdeepshi13@gmail.com

Username: DR13

IBM CLOUD

Feature Code: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxfa11

Account ID: 6b5741733bea4dcbba8e661f8f188b95
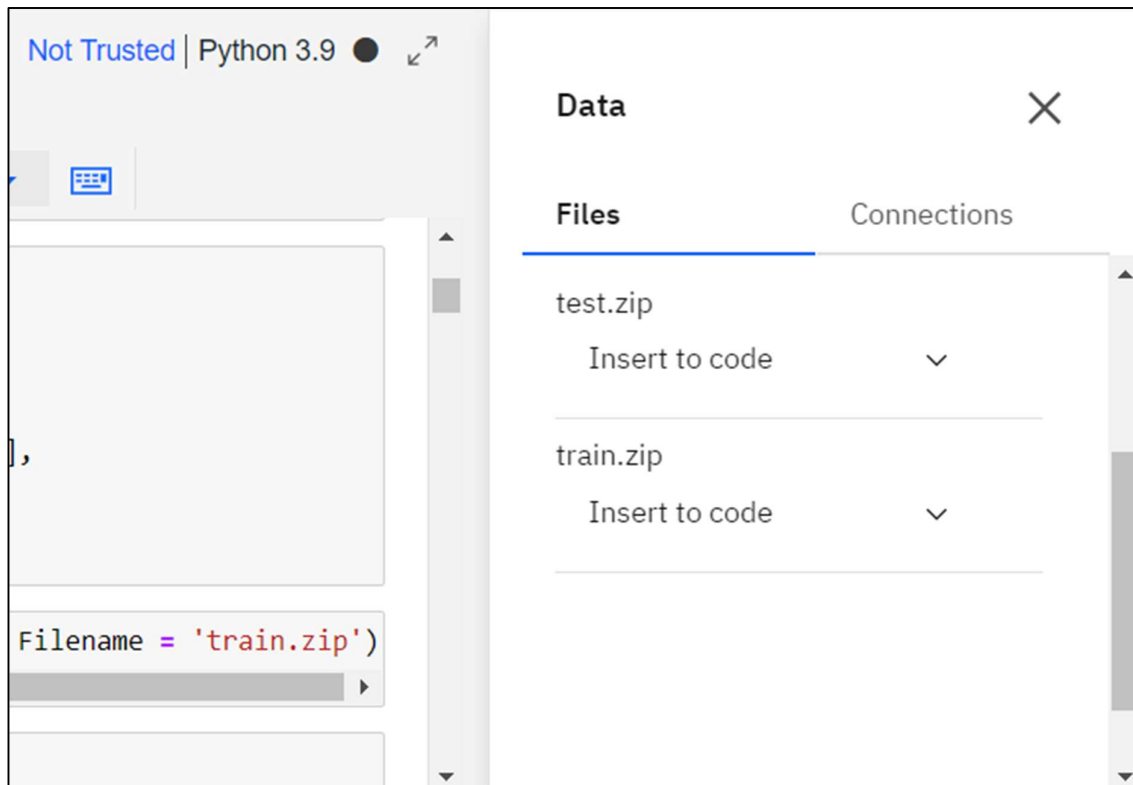
TRAIN MODEL ON IBM CLOUD

1. <u>Create a new Jupyter project in IBM's Watson Studio.</u>

2. <u>Upload the dataset zip files and extract the contents</u>

3. Train Set and Test Set Images

```
-- Training set --

Number of pictures: 4223

Number of different labels: 46

Labels: ['onion' 'chilli pepper' 'eggplant' 'ginger' 'pomegranate' 'spina
ch'
 'watermelon' 'carrot' 'mutton' 'apple' 'fish' 'tomato' 'jalepeno'
 'capsicum' 'mango' 'bean' 'garlic' 'broccoli' 'lettuce' 'potato'
 'bottle gourd' 'beetroot' 'pineapple' 'bellpepper' 'paprika' 'pumpkin'
 'soy beans' 'peas' 'cucumber' 'turnip' 'egg' 'raddish' 'lemon' 'pear'
 'chicken' 'orange' 'cauliflower' 'corn' 'bitter gourd' 'kiwi' 'papaya'
 'banana' 'cabbage' 'sweetcorn' 'sweetpotato' 'grapes']
```
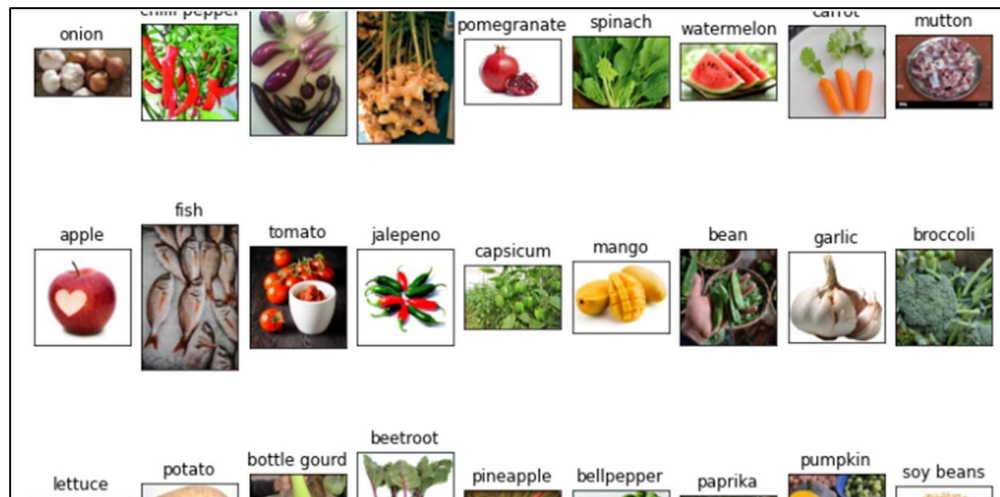

4. Build the model

```
132/132 [==============================] - 300s 2s/step - loss: 1.5084 -
accuracy: 0.6109 - val_loss: 0.4428 - val_accuracy: 0.8763
Epoch 2/5
132/132 [==============================] - 284s 2s/step - loss: 0.4513 -
accuracy: 0.8612 - val_loss: 0.2671 - val_accuracy: 0.9182
Epoch 3/5
132/132 [==============================] - 285s 2s/step - loss: 0.2698 -
accuracy: 0.9143 - val_loss: 0.2639 - val_accuracy: 0.9140
Epoch 4/5
132/132 [==============================] - 292s 2s/step - loss: 0.1975 -
accuracy: 0.9399 - val_loss: 0.2330 - val_accuracy: 0.9371
Epoch 5/5
132/132 [==============================] - 295s 2s/step - loss: 0.1231 -
accuracy: 0.9628 - val_loss: 0.1921 - val_accuracy: 0.9476
```

5. Evaluate the Model

Accuracy Graph
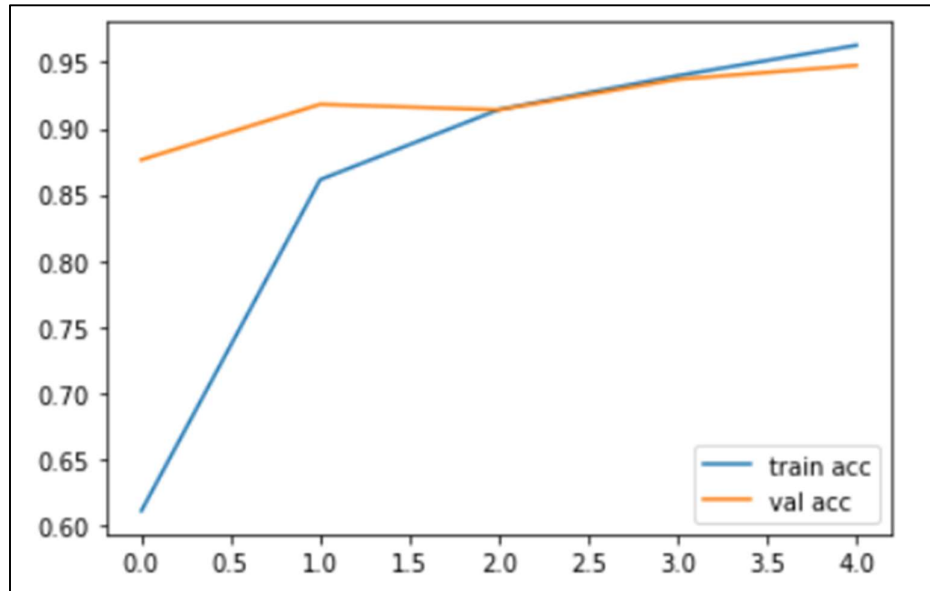
Confusion Matrix

```
array([[ 8,  0,  0, ...,  0,  0,  0],
       [ 0,  7,  0, ...,  0,  0,  0],
       [ 0,  0, 10, ...,  0,  0,  0],
       ...,
       [ 0,  0,  0, ...,  9,  0,  0],
       [ 0,  0,  0, ...,  0, 10,  0],
       [ 0,  0,  0, ...,  0,  0, 10]])
```

Evaluation Metrics

```
PRECISION SCORE :  0.952140452140452
RECALL SCORE :  0.9475890985324947
F1 SCORE :  0.9454436033097522
```

----- X -----