PROJECT DEVELOPMENT PHASE

SPRINT 4

- **Train The Model On IBM**

1.Register For IBM Cloud

2. Train Model On IBM

TOPIC : AI powered nutrition analyzer for fitness enthusiasts

Team id : PNT2022TMID15800

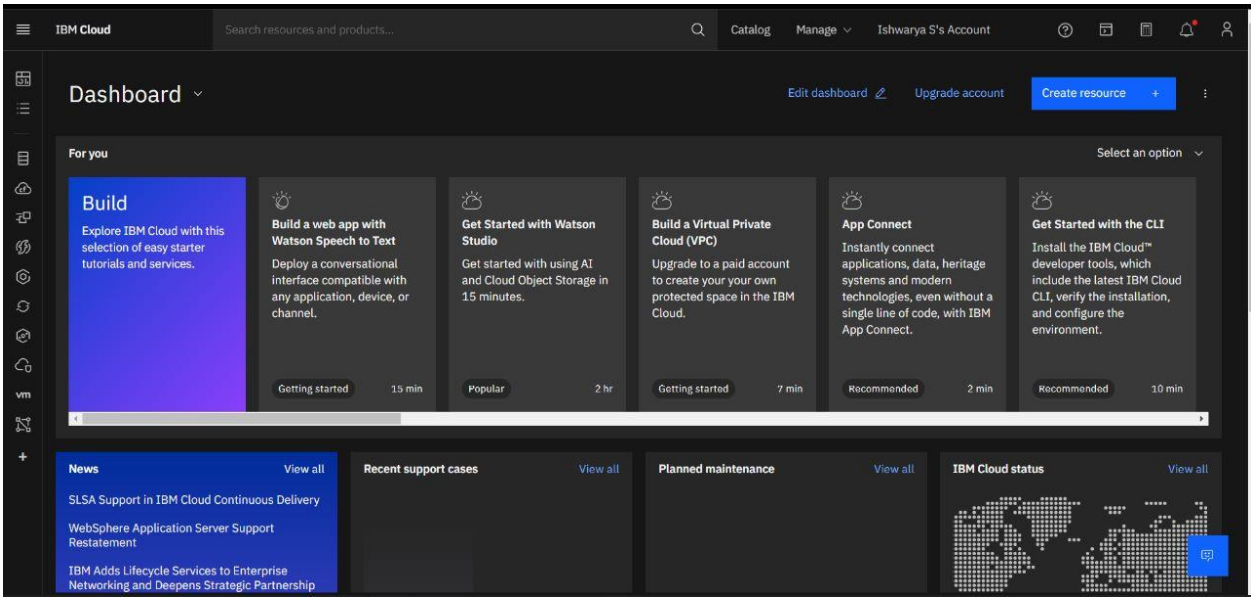
In this milestone, we made Deep Learning Model Using the IBM cloud.

Register For IBM Cloud

IBM Account :

Register link : https://www.ibm.com/academic/home

Log in : https://cloud.ibm.com/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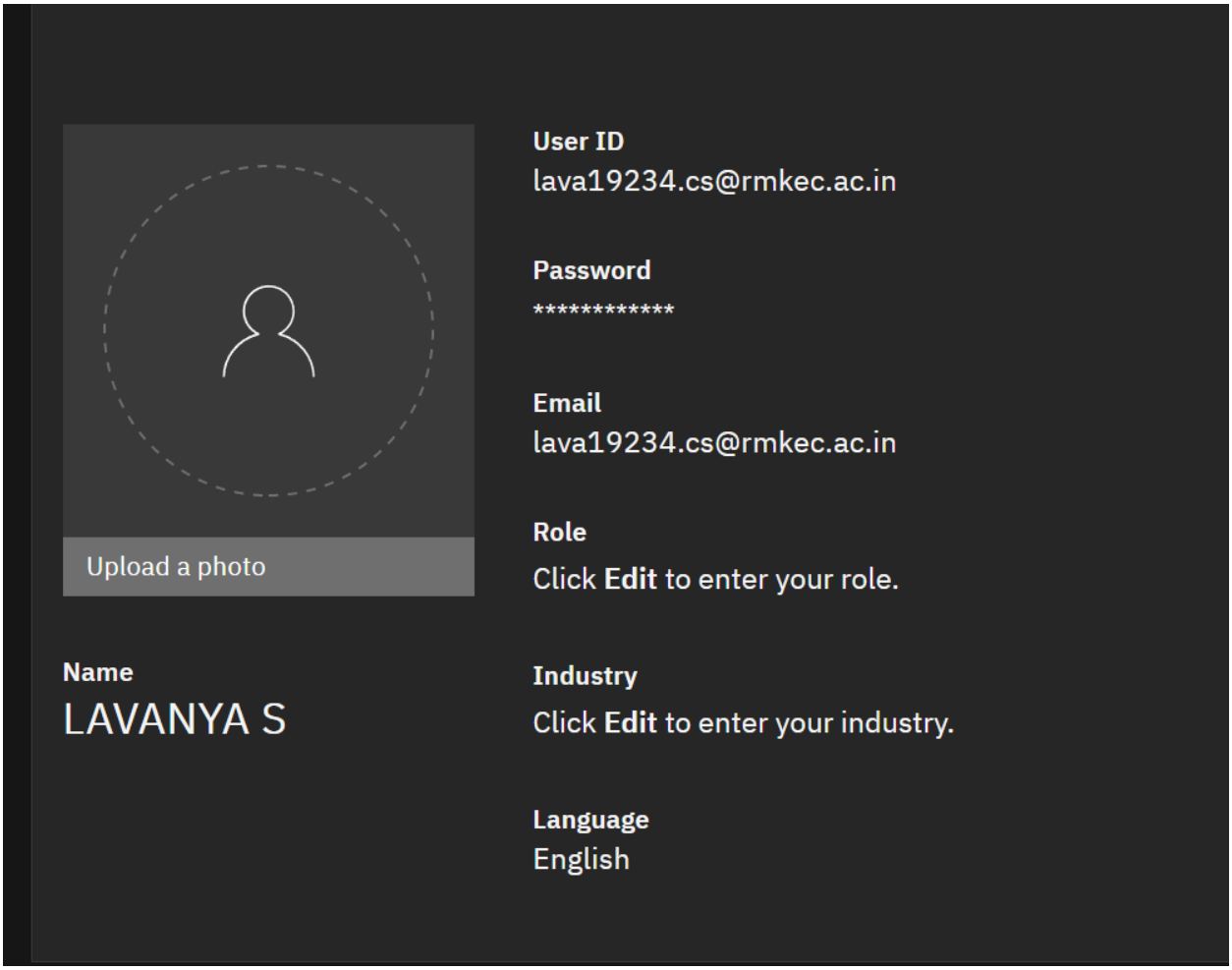
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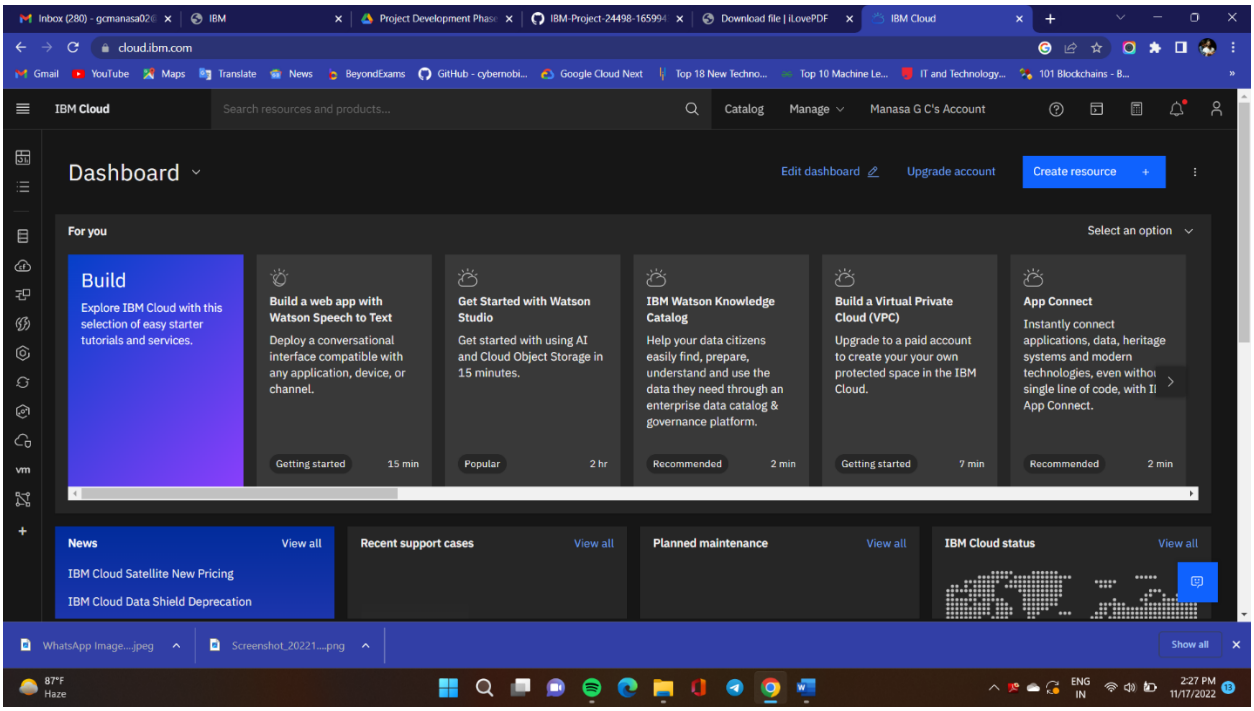
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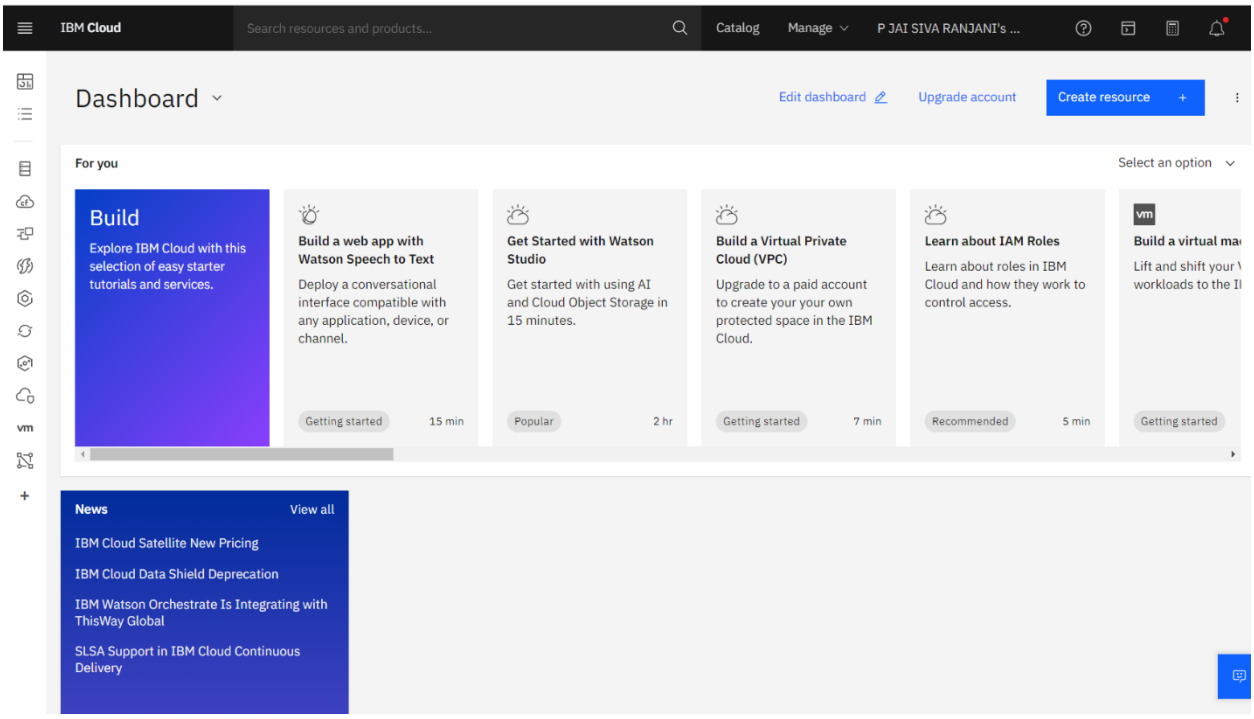
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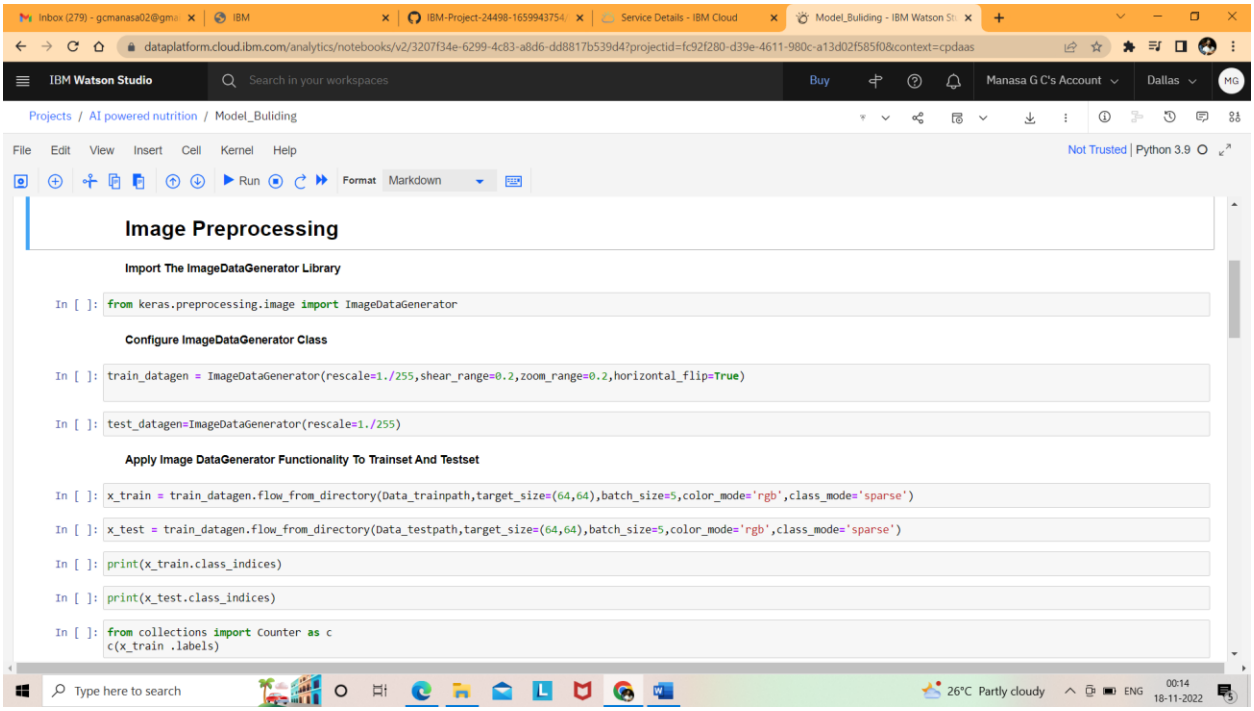
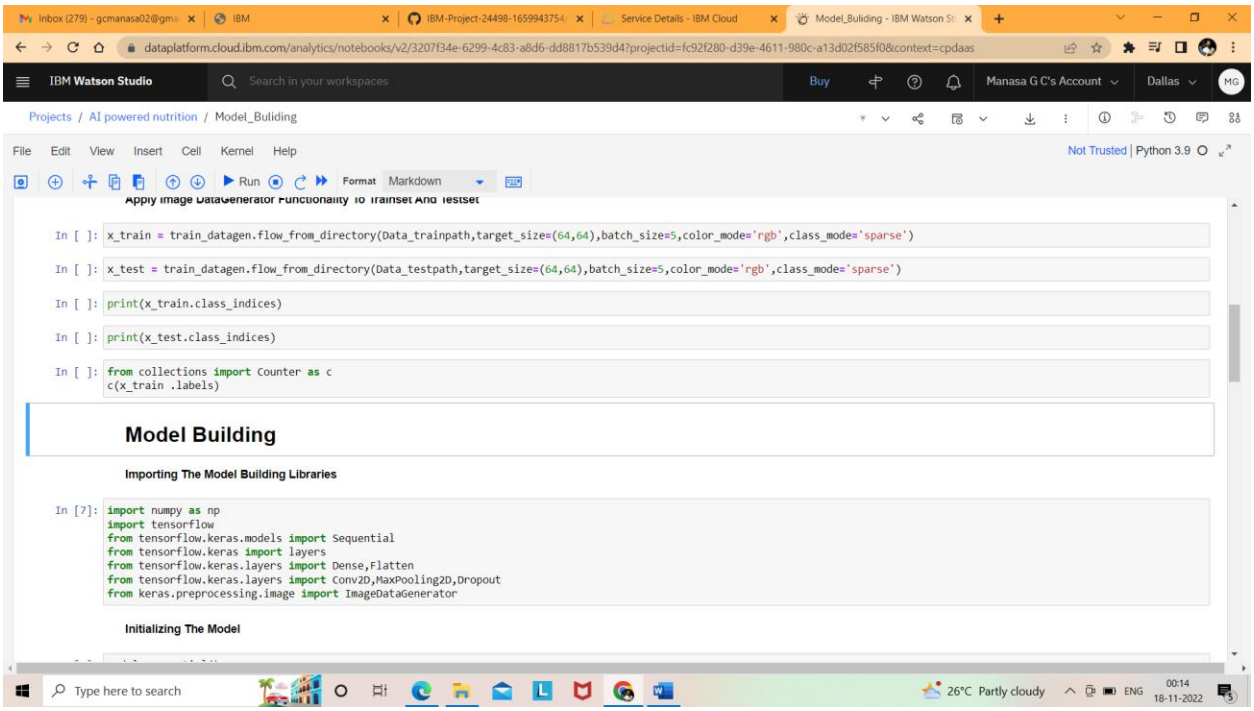
Train Model On IBM

Login to ibm cloud and create ibm Watson studio to train the model on ibm. Copy the file, paste it and run the file in notebook.

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Apply image DataGenerator Functionality To Trainset And Testset
In [ ]: x_train = train_datagen.flow_from_directory(Data_trainpath,target_size=(64,64),batch_size=5,color_mode='rgb',class_mode='sparse')
In [ ]: x_test = train_datagen.flow_from_directory(Data_testpath,target_size=(64,64),batch_size=5,color_mode='rgb',class_mode='sparse')
In [ ]: print(x_train.class_indices)
In [ ]: print(x_test.class_indices)
In [ ]: from collections import Counter as c
c(x_train .labels)
Model Building
Importing The Model Building Libraries
In [7]: import numpy as np
import tensorflow
from tensorflow.keras.models import Sequential
from tensorflow.keras import layers
from tensorflow.keras.layers import Dense,Flatten
from tensorflow.keras.layers import Conv2D,MaxPooling2D,Dropout
from keras.preprocessing.image import ImageDataGenerator
Initializing The Model
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ENG
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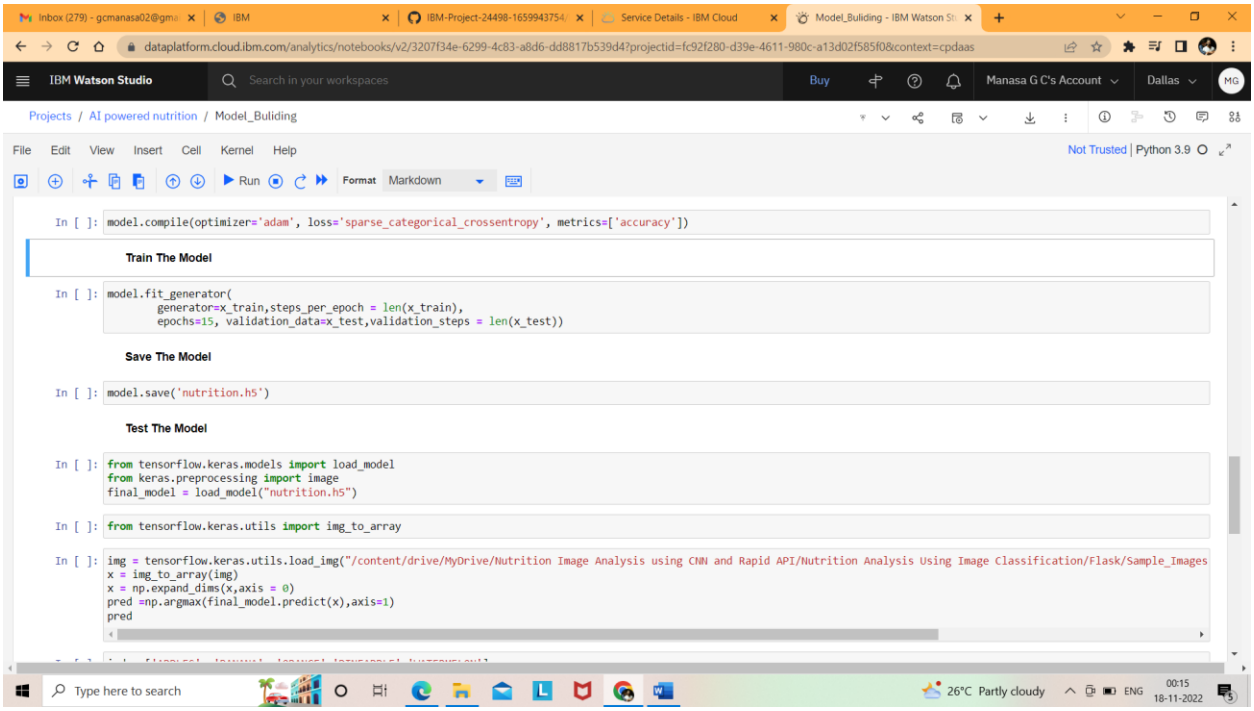
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In [ ]: model.compile(optimizer='adam', loss='sparse_categorical_crossentropy', metrics=['accuracy'])
Train The Model
In [ ]: model.fit_generator(
generator=x_train,steps_per_epoch = len(x_train),
epochs=15, validation_data=x_test,validation_steps = len(x_test))
Save The Model
In [ ]: model.save('nutrition.h5')
Test The Model
In [ ]: from tensorflow.keras.models import load_model
from keras.preprocessing import image
final_model = load_model("nutrition.h5")
In [ ]: from tensorflow.keras.utils import img_to_array
In [ ]: img = tensorflow.keras.utils.load_img("/content/drive/MyDrive/Nutrition Image Analysis using CNN and Rapid API/Nutrition Analysis Using Image Classification/Flask/Sample_Images
x = img_to_array(img)
x = np.expand_dims(x,axis = 0)
pred =np.argmax(final_model.predict(x),axis=1)
pred
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