Sprint 2 - Task 6

Date	15 October 2022
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Project Name	AI-Based Food Analyzer for fitness Enthusiasts

Training the Model

We have Trained the Model with Training Datasets. We have given an Epoch of 2 rounds of Training and saved it as a ‘Fitness2.h5’ file.

```
[ ]  classifier.fit_generator(
        generator=x_train,steps_per_epoch=len(x_train),epochs=2 , validation_data=x_test,validation_steps=len(x_test))

    Epoch 1/2
    /usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:2: UserWarning: `Model.fit_generator` is deprecated and will be removed in a future version.

    526/526 [==============================] - 27s 50ms/step - loss: 0.1620 - accuracy: 0.9425 - val_loss: 0.0877 - val_accuracy: 0.9498
    Epoch 2/2
    526/526 [==============================] - 29s 55ms/step - loss: 0.0047 - accuracy: 0.9989 - val_loss: 0.0291 - val_accuracy: 0.9801
    <keras.callbacks.History at 0x7f6ab40c23d0>

[ ]  classifier.save('Fitness2.h5')
```

Testing the Model

We Tested the Trained model using Different Test Images Which will differ from the Training Images Datasets , Importing the libraries and Importing the test image

```
from tensorflow.keras.models import load_model

from tensorflow.keras.preprocessing import image

import numpy as np
```

```
[ ]  model=load_model("/content/drive/MyDrive/IBM PROJECT/Dataset/Fitness.h5")
```

```
[ ]  img=image.load_img(r"/content/drive/MyDrive/test/melon.jpeg",grayscale=False,target_size=(64,64))
```

Feature Extraction

We Extracted the Features of the image using NumPy and Converted the image to a Numpy array file

```
[ ]  x=image.img_to_array(img)

     x=np.expand_dims(x,axis=0)
```

After Tested the image it will shows as

```
[ ]  pred=np.argmax(model.predict(x),axis=1)
     print("predition",pred)

     1/1 [==============================] - 0s 24ms/step
     predition [4]
```

We tested with a Watermelon image , after mentioning the fruit names with index values , it will shows the name of predicted image

```
[ ]  index=['APPLES','BANANA','ORANGE','PINEAPPLE','WATERMELON']

     result=str(index[pred[0]])

     print(result)

     WATERMELON
```