

*#import keras libraries*

```
from keras.models import Sequential
from keras.layers import Dense
from keras.layers import Conv2D
from keras.layers import MaxPooling2D
from keras.layers import Flatten
from keras.preprocessing.image import ImageDataGenerator
```

*#Intialize CNN model*

```
model=Sequential()
```

*#Add Convolution Layer*

```
model.add(Conv2D(32,3,3,input_shape=(64,64,3),activation='relu'))
```

*#Add Pooling Layer*

```
model.add(MaxPooling2D(pool_size=(2,2)))
```

*#Add flatten layer*

```
model.add(Flatten())
```

*#Adding Dense layer*

```
model.add(Dense(300,activation='relu'))
model.add(Dense(150,activation='relu'))
```

*#Configure the Learning process*

```
model.compile(optimizer='adam',loss='binary_crossentropy',metrics=['accuracy'])
```

*#Train the model*

```
model.fit_generator(x_train,samples_per_epoch =
8000,epochs=25,validation_data=x_test,nb_val_samples=2000)
```

*#Save the model*

```
model.save('nutrition.h5')
```

*#Test the model*

```
import numpy as np
from tensorflow.keras.models import load_model
from tensorflow.keras.preprocessing import image
model=load_model('nutrition.h5')
```

```
img=image.load_img(r'/content/drive/MyDrive/nutrition/Watermelon/
10386503264_e05387e1f7_m.jpg')
img
x=image.img_to_array(img) x=np.expand_dims(x,axis=0)
pred_prob=model.predict(x)
class_name=["Apple,Banana,Orange,Pineapple,Watermelon"]
pred_id=pred_prob.argmax(axis=1)[0] pred_id
```