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ImageDataGenerator(rescale=1./255,shear_range=0.2,zoom_range=0.2,horizontal_flip=True)\n",
        "test_datagen =ImageDataGenerator(rescale=1./255)"
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  "Found 929 images belonging to 5 classes.\n"
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],
"source": [
  "x_train = train_datagen.flow_from_directory(\n",
  "  r'C:\\Users\\HP\\Documents\\DataSet\\TRAIN_SET-20221021T095226Z-001\\TRAIN_SET',target_size=(64, 64),batch_size=5,color_mode='rgb',class_mode='sparse')\n",
  "x_test = test_datagen.flow_from_directory(\n",
  "  r'C:\\Users\\HP\\Documents\\DataSet\\TEST_SET-20221021T095157Z-001\\TEST_SET',target_size=(64, 64),batch_size=5,color_mode='rgb',class_mode='sparse')\n"
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        "{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}\n"
      ]
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"print (x_train.class_indices)"
]
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  ]
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  "c(x_train.labels)\n",  
  "\n"  
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  "outputs": [],  
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    "from keras.layers import Dense\n",  
    "from keras.layers import Conv2D\n",  
    "from keras.layers import MaxPooling2D\n",  
    "from keras.layers import Flatten\n"  
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  },  
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    "from tensorflow.keras.models import Sequential"  
  ]  
}
```

```
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    "from tensorflow.keras.layers import Conv2D,MaxPooling2D,Dropout"
```

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]
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    "model.add(Conv2D(32,3,3,input_shape=(64,64,3),activation='relu'))"
  ]
}

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```
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```

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    "classifier.add(Conv2D(32, (3, 3), input_shape=(64, 64, 3), activation='relu'))\n",
    "classifier.add(MaxPooling2D(pool_size=(2, 2)))"
  ]
},

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    "\n"
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```

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"classifier.add(Flatten())"
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"classifier.add(Dense(units=128, activation='relu'))\n",
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"_____ \n",
" Layer (type)      Output Shape      Param #   \n",
"===== \n",
" conv2d_6 (Conv2D)  (None, 62, 62, 32)  896      \n",
" \n",
" max_pooling2d_8 (MaxPooling (None, 31, 31, 32)  0      \n",

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" 2D)                                \n",
"                                    \n",
" conv2d_7 (Conv2D)      (None, 29, 29, 32)    9248    \n",
"                                    \n",
" max_pooling2d_9 (MaxPooling (None, 14, 14, 32)    0    \n",
" 2D)                                \n",
"                                    \n",
" flatten_6 (Flatten)    (None, 6272)         0    \n",
"                                    \n",
" dense_4 (Dense)        (None, 128)          802944    \n",
"                                    \n",
" dense_5 (Dense)        (None, 5)            645    \n",
"                                    \n",
"===== \n",
"Total params: 813,733 \n",
"Trainable params: 813,733 \n",
"Non-trainable params: 0 \n",
"_____ \n"
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"classifier.summary() \n"
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metrics=['accuracy'])"
]
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`Model.fit_generator` is deprecated and will be removed in a future version. Please use `Model.fit`,
which supports generators.\\n",
                " classifier.fit_generator(\\n"
            ]
        },
        {
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            "output_type": "stream",
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                "Epoch 1/10\\n",
                "824/824 [=====] - 41s 48ms/step - loss: 0.6049 - accuracy: 0.7739
- val_loss: 0.5004 - val_accuracy: 0.8116\\n",
                "Epoch 2/10\\n",
                "824/824 [=====] - 41s 50ms/step - loss: 0.4198 - accuracy: 0.8473
- val_loss: 0.4984 - val_accuracy: 0.8235\\n",
                "Epoch 3/10\\n",

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```
"824/824 [=====] - 43s 52ms/step - loss: 0.3806 - accuracy: 0.8555
- val_loss: 0.4393 - val_accuracy: 0.8332\n",

"Epoch 4/10\n",

"824/824 [=====] - 38s 45ms/step - loss: 0.3472 - accuracy: 0.8681
- val_loss: 0.4119 - val_accuracy: 0.8504\n",

"Epoch 5/10\n",

"824/824 [=====] - 37s 45ms/step - loss: 0.3323 - accuracy: 0.8779
- val_loss: 0.4166 - val_accuracy: 0.8428\n",

"Epoch 6/10\n",

"824/824 [=====] - 37s 44ms/step - loss: 0.3072 - accuracy: 0.8834
- val_loss: 0.4251 - val_accuracy: 0.8428\n",

"Epoch 7/10\n",

"824/824 [=====] - 39s 47ms/step - loss: 0.2990 - accuracy: 0.8905
- val_loss: 0.5612 - val_accuracy: 0.7783\n",

"Epoch 8/10\n",

"824/824 [=====] - 48s 58ms/step - loss: 0.2626 - accuracy: 0.8975
- val_loss: 0.3379 - val_accuracy: 0.8859\n",

"Epoch 9/10\n",

"824/824 [=====] - 49s 59ms/step - loss: 0.2587 - accuracy: 0.9004
- val_loss: 0.4058 - val_accuracy: 0.8568\n",

"Epoch 10/10\n",

"824/824 [=====] - 46s 56ms/step - loss: 0.2350 - accuracy: 0.9053
- val_loss: 0.3717 - val_accuracy: 0.8794\n"

]

},

{
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    ]
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```

```

    }
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    "    epochs=10, validation_data=x_test,validation_steps = len(x_test))"
  ]
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    "classifier.save('nutrition.h5')"
  ]
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  "outputs": [],
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  ]
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```

```

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"outputs": [],

"source": [

    "from keras.preprocessing import image\n",

    "from tensorflow.keras.preprocessing import image \n",

    "model = load_model(\"nutrition.h5\")"

]

},

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