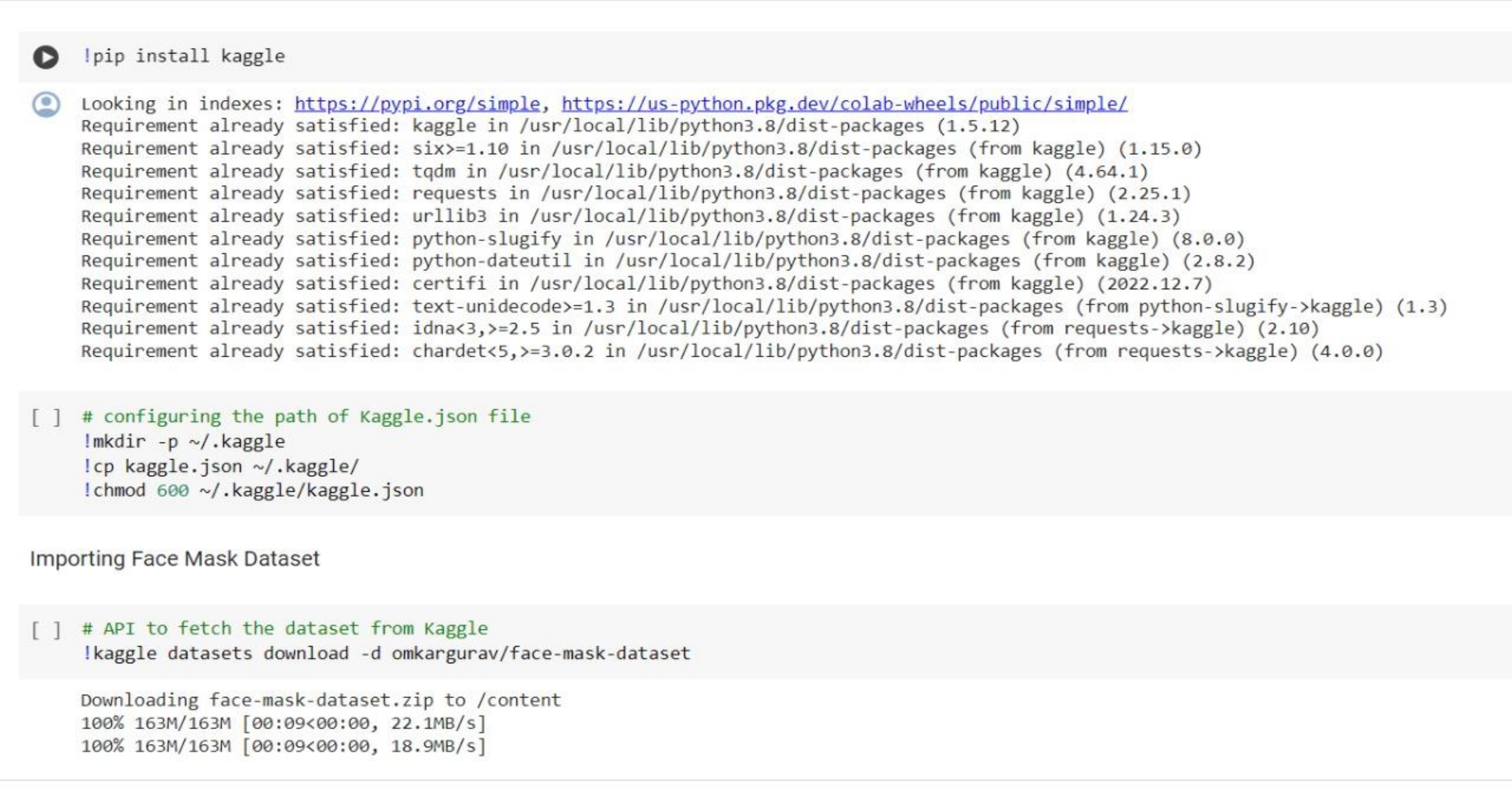
# KAGGLE DATASET LINK:-

HTTPS://WWW.KAGGLE.COM/DATASETS/OMKARGURAV/FACE-MASK-DA

# ABOUT DATASET

FACE MASK DETECTION DATA SET:-

IN RECENT TREND IN WORLD WIDE LOCKDOWNS DUE TO COVID19 OUTBREAK, AS FACE MASK IS BECAME MANDATORY FOR EVERYONE WHILE ROAMING OUTSIDE, APPROACH OF DEEP LEARNING FOR DETECTING FACES WITH AND WITHOUT MASK WERE A GOOD TRENDY PRACTICE. HERE I HAVE CREATED A MODEL THAT DETECTS FACE MASK TRAINED ON 7553 IMAGES WITH 3 COLOR CHANNELS (RGB).
ON CUSTOM CNN ARCHITECTURE MODEL TRAINING ACCURACY REACHED 94% AND VALIDATION ACCURACY 96%.
CONTENT
DATA SET CONSISTS OF 7553 RGB IMAGES IN 2 FOLDERS AS WITH_MASK AND WITHOUT_MASK. IMAGES ARE NAMED AS LABEL WITH_MASK AND WITHOUT_MASK. IMAGES OF FACES WITH MASK ARE 3725 AND IMAGES OF FACES WITHOUT MASK ARE 3828.



```
!pip install kaggle
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Requirement already satisfied: kaggle in /usr/local/lib/python3.8/dist-packages (1.5.12)
Requirement already satisfied: six>=1.10 in /usr/local/lib/python3.8/dist-packages (from kaggle) (1.15.0)
Requirement already satisfied: tqdm in /usr/local/lib/python3.8/dist-packages (from kaggle) (4.64.1)
Requirement already satisfied: requests in /usr/local/lib/python3.8/dist-packages (from kaggle) (2.25.1)
Requirement already satisfied: urllib3 in /usr/local/lib/python3.8/dist-packages (from kaggle) (1.24.3)
Requirement already satisfied: python-slugify in /usr/local/lib/python3.8/dist-packages (from kaggle) (8.0.0)
Requirement already satisfied: python-dateutil in /usr/local/lib/python3.8/dist-packages (from kaggle) (2.8.2)
Requirement already satisfied: certifi in /usr/local/lib/python3.8/dist-packages (from kaggle) (2022.12.7)
Requirement already satisfied: text-unidecode>=1.3 in /usr/local/lib/python3.8/dist-packages (from python-slugify->kaggle) (1.3)
Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.8/dist-packages (from requests->kaggle) (2.10)
Requirement already satisfied: chardet<5,>=3.0.2 in /usr/local/lib/python3.8/dist-packages (from requests->kaggle) (4.0.0)
```

[ ]

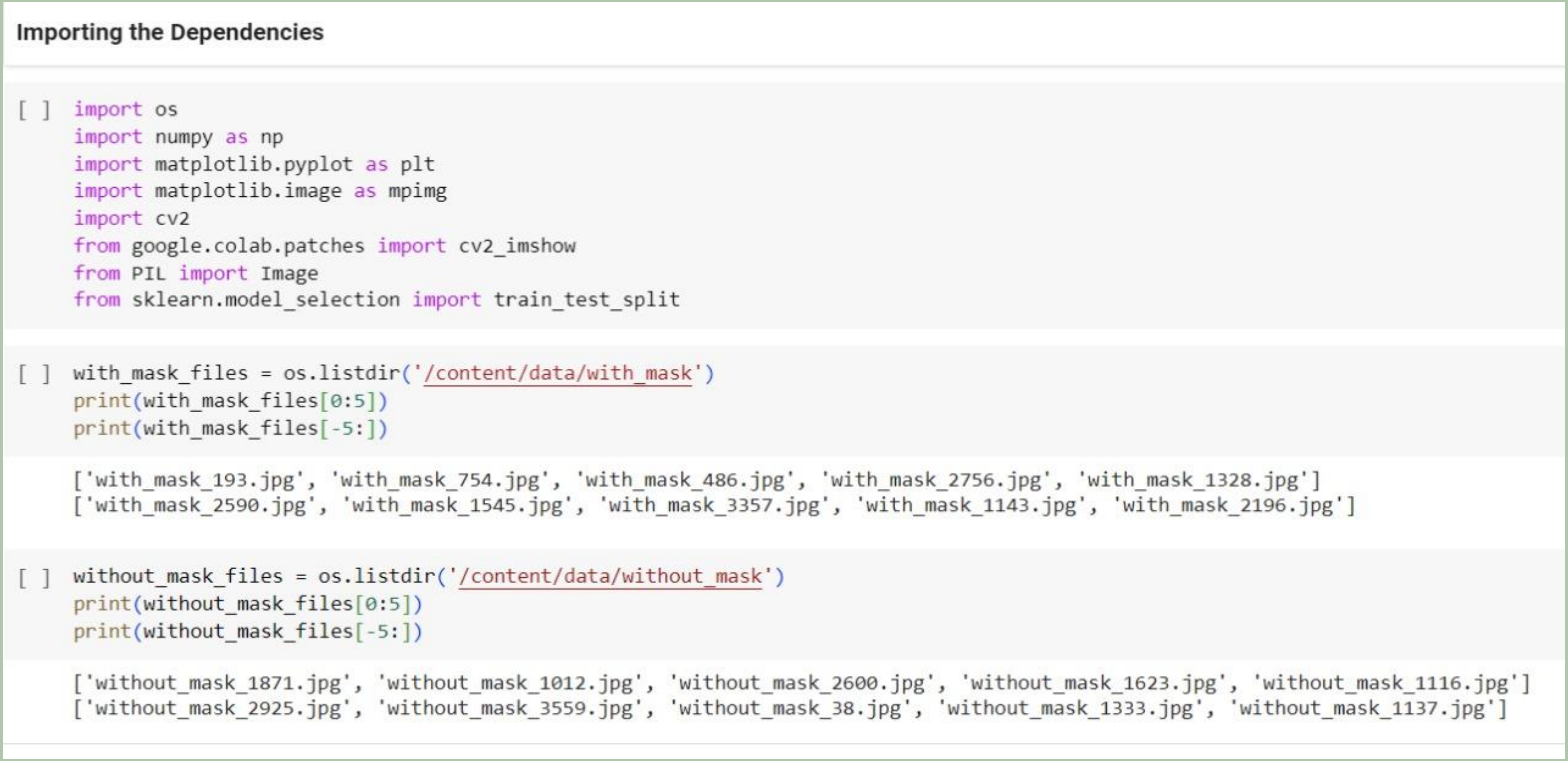
```
# configuring the path of Kaggle.json file
!mkdir -p ~/.kaggle
!cp kaggle.json ~/.kaggle/
!chmod 600 ~/.kaggle/kaggle.json
```

Importing Face Mask Dataset

[ ]

```
# API to fetch the dataset from Kaggle
!kaggle datasets download -d omkargurav/face-mask-dataset
```

```
Downloading face-mask-dataset.zip to /content
100% 163M/163M [00:09<00:00, 22.1MB/s]
100% 163M/163M [00:09<00:00, 18.9MB/s]
```



### Importing the Dependencies

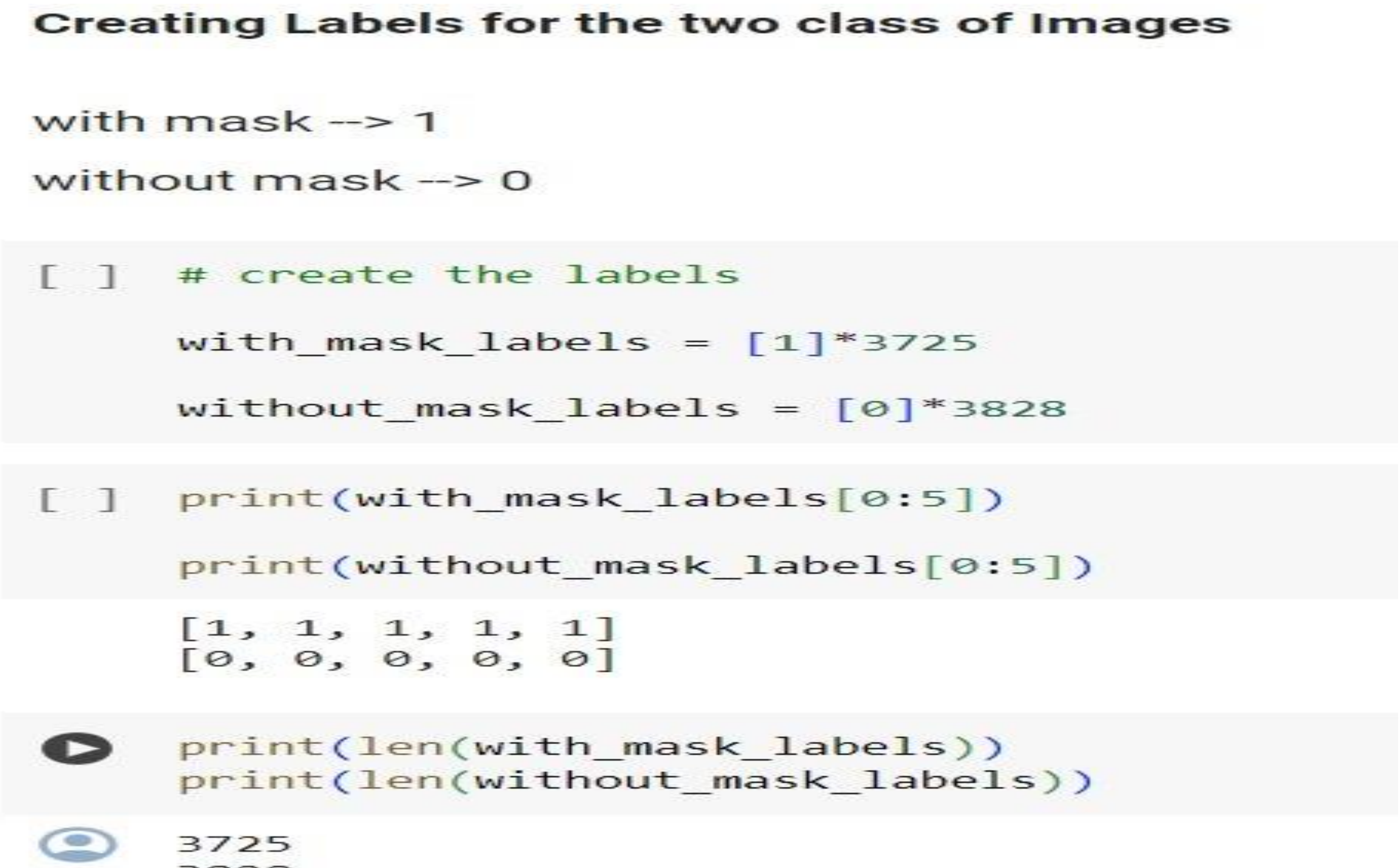
```
[ ] import os
    import numpy as np
    import matplotlib.pyplot as plt
    import matplotlib.image as mpimg
    import cv2
    from google.colab.patches import cv2_imshow
    from PIL import Image
    from sklearn.model_selection import train_test_split
```

```
[ ] with_mask_files = os.listdir('/content/data/with_mask')
    print(with_mask_files[0:5])
    print(with_mask_files[-5:])
```

```
['with_mask_193.jpg', 'with_mask_754.jpg', 'with_mask_486.jpg', 'with_mask_2756.jpg', 'with_mask_1328.jpg']
['with_mask_2590.jpg', 'with_mask_1545.jpg', 'with_mask_3357.jpg', 'with_mask_1143.jpg', 'with_mask_2196.jpg']
```

```
[ ] without_mask_files = os.listdir('/content/data/without_mask')
    print(without_mask_files[0:5])
    print(without_mask_files[-5:])
```

```
['without_mask_1871.jpg', 'without_mask_1012.jpg', 'without_mask_2600.jpg', 'without_mask_1623.jpg', 'without_mask_1116.jpg']
['without_mask_2925.jpg', 'without_mask_3559.jpg', 'without_mask_38.jpg', 'without_mask_1333.jpg', 'without_mask_1137.jpg']
```



### Creating Labels for the two class of Images

with mask --> 1

without mask --> 0

```
# create the labels

with_mask_labels = [1]*3725

without_mask_labels = [0]*3828
```

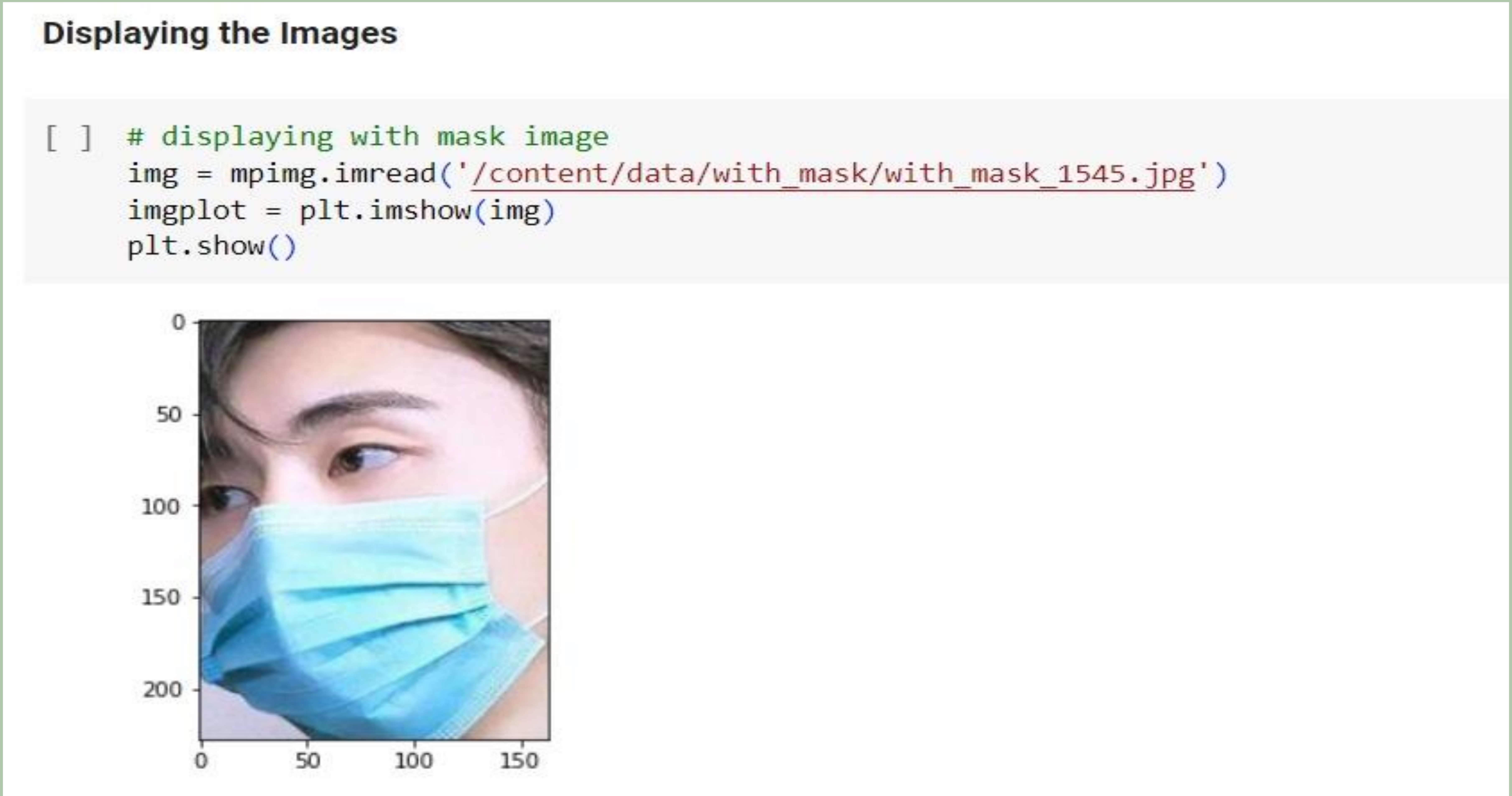
```
print(with_mask_labels[0:5])

print(without_mask_labels[0:5])
```

```
[1, 1, 1, 1, 1]
[0, 0, 0, 0, 0]
```

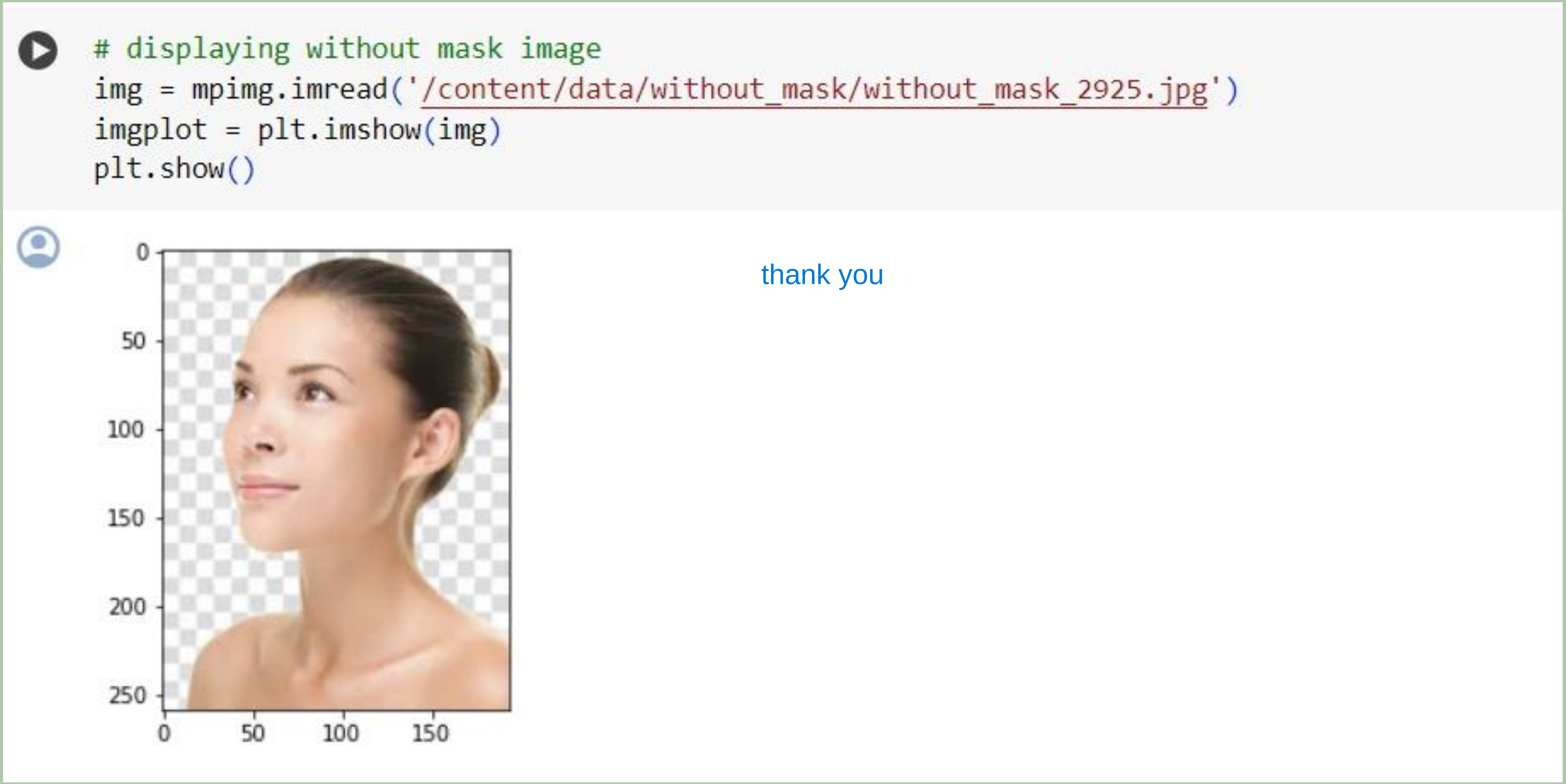
```
print(len(with_mask_labels))
print(len(without_mask_labels))
```

```
3725
```



## Displaying the Images

```
# displaying with mask image
img = mpimg.imread('/content/data/with_mask/with_mask_1545.jpg')
imgplot = plt.imshow(img)
plt.show()
```



```
# displaying without mask image
img = mpimg.imread('/content/data/without_mask/without_mask_2925.jpg')
imgplot = plt.imshow(img)
plt.show()
```

thank you