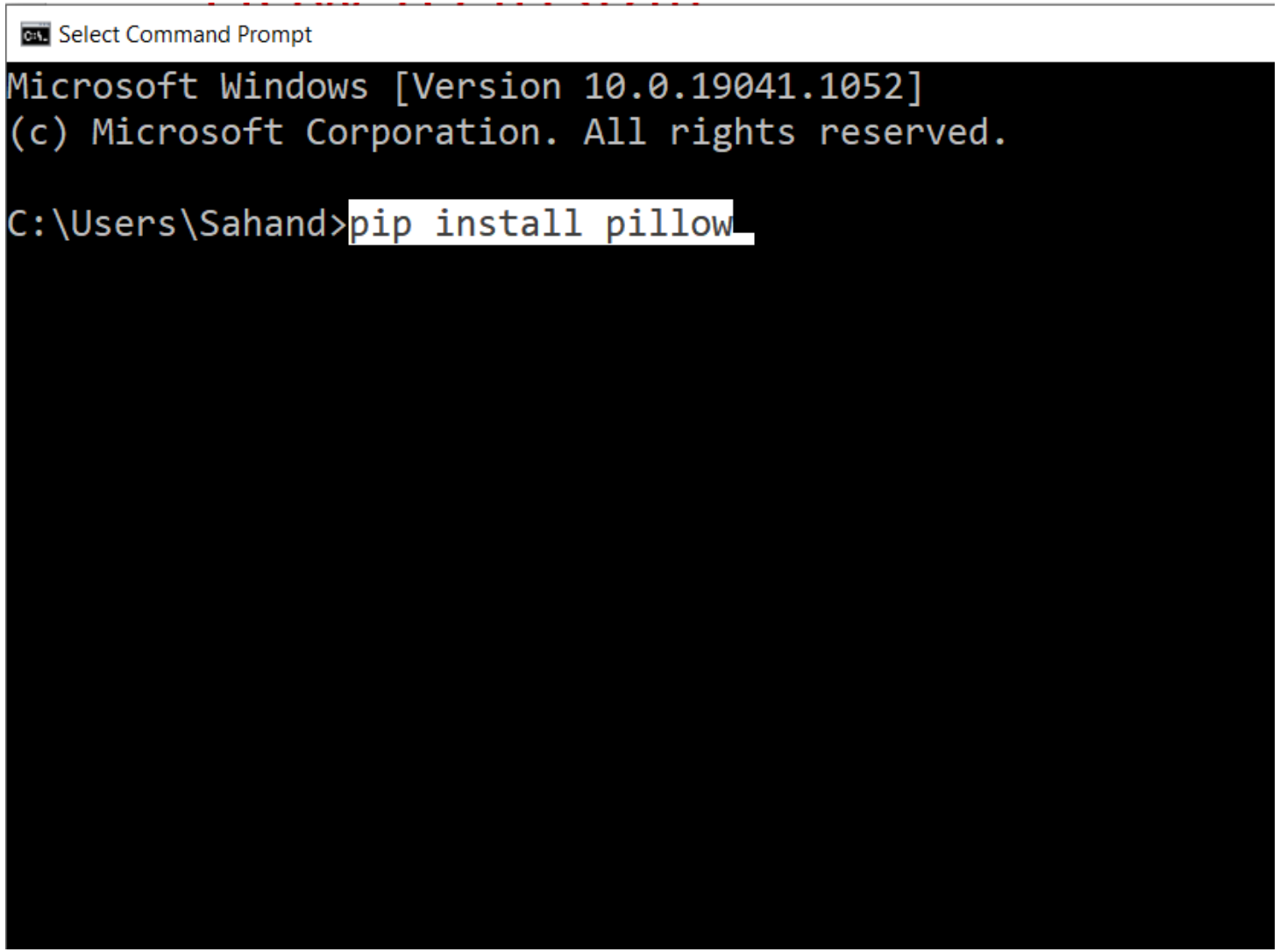
Python Imaging Library (Pillow)

How to install



Introduction

```
1  from PIL import Image
2
3  img  = Image.open('images/profile.jpg')
4  img.show()
5
```

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2
3  img  = Image.open('images/profile.jpg')
4  new_img = img.convert('L')
5  new_img.show();
```

Basic Manipulation

```
1  from PIL import Image
2
3  img = Image.open('images/profile.jpg')
4
5  #Resize
6  smaller_img = img.resize((150,150))
7  smaller_img.show()
8
9  #Crop
10 #box = (100,100,400,400)
11 #region = img.crop(box)
12
13 #region.show()
14 #Rotation
15 #rotated_img = img.rotate(45)
16 #rotated_img.show()
```

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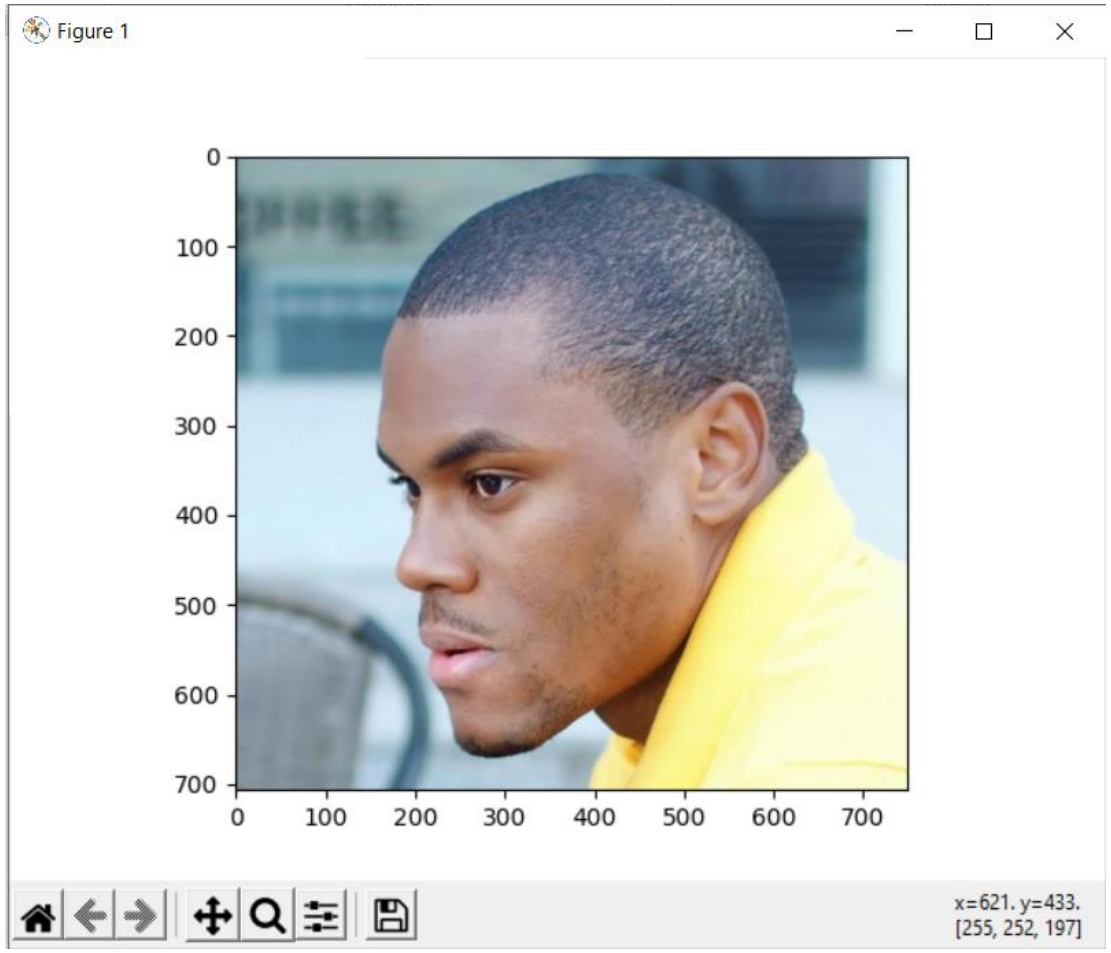
Image conversion

```
1  from PIL import Image
2  import os
3
4  filelist=['images/profile.jpg','images/moon.jpg']
5
6
7  for infile  in filelist:
8      splittedPath = os.path.splitext(infile)
9      outfile = splittedPath[0]+".png"
10     if infile !=outfile:
11         try:
12             Image.open(infile).save(outfile)
13         except IOError:
14                 print("Cannot convert"), infile
```

Analyzing an Image using **numpy** and **matplotlib**

```
1  import numpy as np
2  import matplotlib.pyplot as plt
3
4  A = plt.imread('images/profile.jpg')
5  #print(A)
6  print(np.shape(A))
7  print(type(A))
8  print(A.dtype)
9  plt.imshow(A)
10 plt.show()
```

```
(707, 749, 3)
<class 'numpy.ndarray'>
uint8
```

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