INTRODUCTION TO IMAGE PROCESSING HOMEWORK-1

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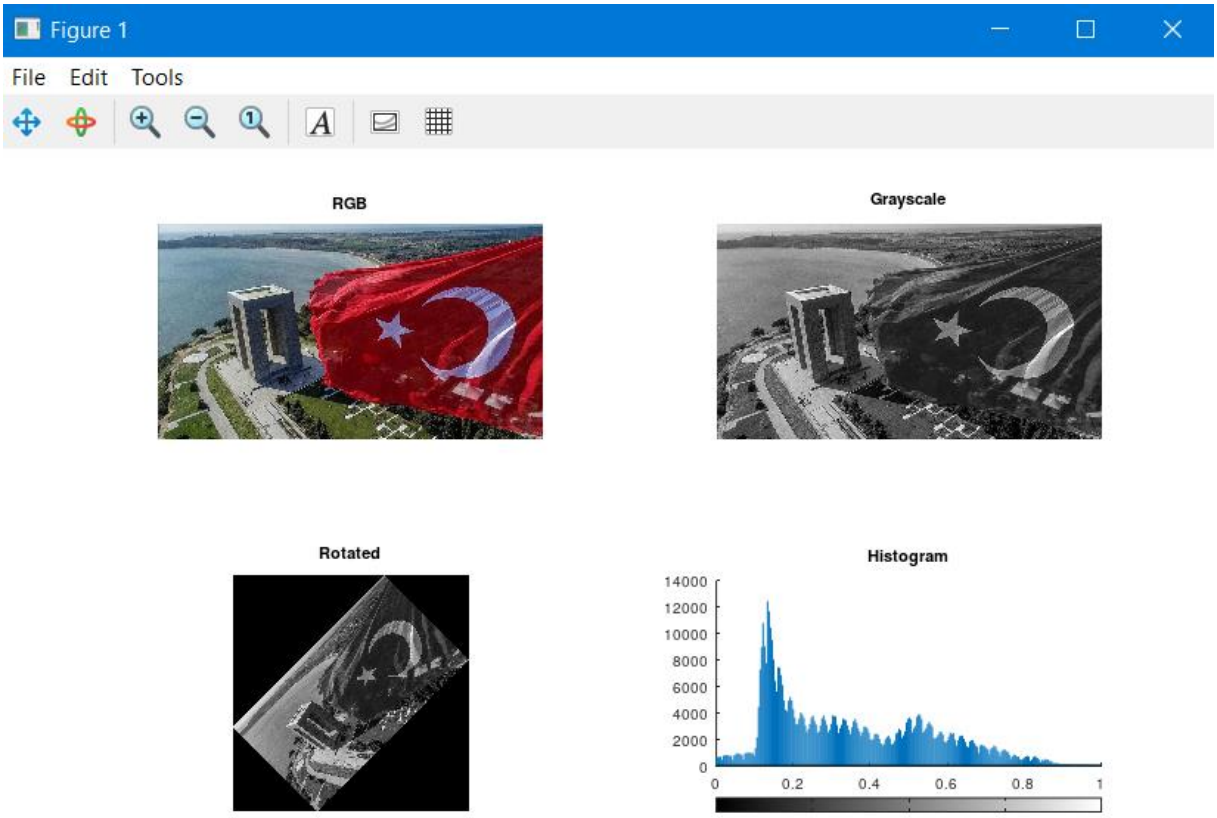
1. Task 3

Here is the output of the code written by me.



2. Task 3.1.

Here is each output for images if ‘imfinfo’ used for them.

a. blobs.png

```
ans =

  scalar structure containing the fields:

    Filename = C:\Users\ferha\OneDrive\Masaüstü\OCTAVE\blobs.png
    FileModDate = 19-Nov-2002 00:13:30
    FileSize = 1094
    Format = PNG
    FormatVersion =
    Width = 329
    Height = 272
    BitDepth = 1
    ColorType = grayscale
    DelayTime = 0
    DisposalMethod =
    LoopCount = 0
    ByteOrder = undefined
    Gamma = 0
    Chromaticities = [](1x0)
    Comment =
    Quality = 75
    Compression = undefined
    Colormap = [](0x0)
    Orientation = 1
    ResolutionUnit = undefined
    XResolution = 0
    YResolution = 0
    Software =
    Make =
    Model =
    DateTime =
    ImageDescription =
    Artist =
    Copyright = Copyright The Mathworks, Inc.
    DigitalCamera =

      scalar structure containing the fields:


    GPSInfo =

      scalar structure containing the fields:
```

b. lighthouse.png

```
Filename = C:\Users\ferha\OneDrive\Masaüstü\OCTAVE\lighthouse.png
FileModDate = 27-Mar-2015 22:28:28
FileSize = 484362
Format = PNG
FormatVersion =
Width = 480
Height = 640
BitDepth = 8
ColorType = truecolor
DelayTime = 0
DisposalMethod =
LoopCount = 0
ByteOrder = undefined
Gamma = 0
Chromaticities = [](1x0)
Comment =
Quality = 75
Compression = undefined
Colormap = [](0x0)
Orientation = 1
ResolutionUnit = undefined
XResolution = 0
YResolution = 0
Software =
Make =
Model =
DateTime =
ImageDescription =
Artist =
Copyright = The MathWorks Inc.
DigitalCamera =

  scalar structure containing the fields:


GPSInfo =

  scalar structure containing the fields:
```

c. mandi.tif

```
    Filename = C:\Users\ferha\OneDrive\Masaüstü\OCTAVE\mandi.tif
    FileModDate =  1-Jun-2007 23:20:38
    FileSize = 6100662
    Format = TIFF
    FormatVersion =
    Width = 3039
    Height = 2014
    BitDepth = 8
    ColorType = grayscale
    DelayTime = 0
    DisposalMethod =
    LoopCount = 0
    ByteOrder = undefined
    Gamma = 0
    Chromaticities = [](1x0)
    Comment = Bayer pattern-encoded image courtesy of Jeremy Barry.  The image was pho
BGGR sensor alignment.
    Quality = 75
    Compression = undefined
    Colormap = [](0x0)
    Orientation = 1
    ResolutionUnit = Inch
    XResolution = 72
    YResolution = 72
    Software =
    Make =
    Model =
    DateTime =
    ImageDescription =
    Artist =
    Copyright =
    DigitalCamera =

      scalar structure containing the fields:


    GPSInfo =
```

d. shadow.tif

The Colormap section was so long that I had to cut middle of it to make it fit in report.

```
Filename = C:\Users\ferha\OneDrive\Masaüstü\OCTAVE\shadow.tif
FileModDate = 13-Apr-2015 16:23:14
FileSize = 70020
Format = TIFF
FormatVersion =
Width = 298
Height = 223
BitDepth = 16
ColorType = indexed
DelayTime = 0
DisposalMethod =
LoopCount = 0
ByteOrder = undefined
Gamma = 0
Chromaticities = [](1x0)
Comment = Copyright The MathWorks, Inc.
Quality = 75
Compression = undefined
Colormap =

   1.0000   1.0000   1.0000
   1.0000   1.0000        0
   1.0000        0   1.0000
   1.0000        0        0

             ...

   0.3882   0.3882   0.3882
   0.2902   0.2902   0.2902
   0.1922   0.1922   0.1922
   0.1608   0.1608   0.1608

Orientation = 1
ResolutionUnit = Inch
XResolution = 72
YResolution = 72
Software =
Make =
Model =
DateTime =
ImageDescription =
Artist =
Copyright =
DigitalCamera =

  scalar structure containing the fields:


GPSInfo =

  scalar structure containing the fields:
```

3. Task 4

The HW1_Task4.py will use the same Example.jpg with Task3. Here is a screenshot of the code.

```
from PIL import Image, ImageFilter

image1 = Image.open('example.jpg')
image1.show()
image1.save('example.png')

size = (300, 300)
image2 = image1.copy()
image2.thumbnail(size)
image2.save('resized.png')
image2.show()

image3 = image1.copy()
image3.filter(ImageFilter.BLUR).save('filtered.png')
image3.show()
```