Note: I am Using Scipy v1.1.0. In case of any errors you can install scipy 1.1.0 by the following command: pip install scipy==1.1.0

```
In [26]: import scipy
         scipy.__version__
```

Out[26]: '1.1.0'

To download images Click on this url: https://drive.google.com/drive/folders/1pcaTwofZGfoCxZ3Hv2X6vW6xf_1i88eb?usp=sharing (https://drive.google.com/drive/folders/1pcaTwofZGfoCxZ3Hv2X6vW6xf_1i88eb?usp=sharing)

Import Libraries

```
In [71]: from skimage import data
         from scipy.misc import imread, imresize
         import numpy as np
         from scipy import ndimage
         import matplotlib.pyplot as plt
```

Image Negatives Transformation

Formula of Image Negative Transformation is: s =(L-1)-r

Original Image

```
In [94]: original_image =imread('sydney.png',True, 'L')    #read image as grey scale image
```

```
C:\ProgramData\Anaconda3\lib\site-packages\ipykernel_launcher.py:1: DeprecationWarning: `imread` is deprecate
d!
`imread` is deprecated in SciPy 1.0.0, and will be removed in 1.2.0.
Use ``imageio.imread`` instead.
  """Entry point for launching an IPython kernel.
```

Processed Image

```
In [95]: processed_image =original_image.copy()
```

```
In [99]: greyscale_image =imread('sydney.png',True, 'L')     #read image as grey scale image
         greyscale_image =greyscale_image.astype(np.uint8)

         print(greyscale_image.dtype)
         greyscale_image=(256-1)-greyscale_image
         processed_img=greyscale_image.copy()
         print(np.amin(processed_img),np.amax(processed_img))
```

```
uint8
0 255

C:\ProgramData\Anaconda3\lib\site-packages\ipykernel_launcher.py:1: DeprecationWarning: `imread` is deprecate
d!
`imread` is deprecated in SciPy 1.0.0, and will be removed in 1.2.0.
Use ``imageio.imread`` instead.
  """Entry point for launching an IPython kernel.
```
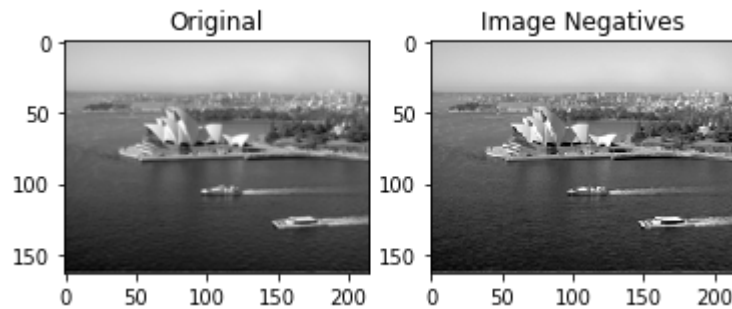
```
In [100]: processed_img[processed_img<0]=0
          processed_img[processed_img>=255]=255
```

In [101]:
```python
fig, axes = plt.subplots(1, 2)
ax = axes.ravel()

ax[0].imshow(original_image,cmap=plt.cm.gray,interpolation='bilinear')
ax[0].set_title("Original")
ax[1].imshow(processed_img, cmap=plt.cm.gray,interpolation='bilinear')
ax[1].set_title("Image Negatives")
plt.imshow(processed_image,cmap=plt.cm.gray)
```

Out[101]: <matplotlib.image.AxesImage at 0x18263544d48>

Demo of Array

In [102]:
```python
print(original_image[1:5,1:5])
print(greyscale_image[1:5,1:5])
```

```
[[189. 191. 190. 191.]
 [189. 190. 191. 192.]
 [191. 191. 192. 192.]
 [192. 192. 193. 193.]]
[[66 64 65 64]
 [66 65 64 63]
 [64 64 63 63]
 [63 63 62 62]]
```