Crop and Flip

Crop and flip an image using Numpy array indexing.

In [9]:

```
import cv2
import matplotlib.pyplot as plt
import numpy as np
%matplotlib inline
```

In [15]:

```
def cropCenter(img, x_center, y_center):
    y, x, c = img.shape
    xoff = (x - x_center) // 2
    yoff = (y - y_center) // 2
    img2= img[yoff:-yoff,xoff:-xoff]
    return img2

def crop(img, x_start, x_end, y_start, y_end):
    img2= img[y_start:y_end,x_start:x_end]
    return img2
```

In [11]:

```
def flipImg(img):
    height = width = img.shape[0]
    blank_image = np.zeros((height,width,3), np.uint8)
    for i in range(img.shape[0]):
        for j in range(img.shape[1]):
             blank_image[i][j] = img[i][width-1-j]

    return blank_image
```

In [17]:

```
imfile = '../db/lena.png'
img = cv2.imread(imfile)
img = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
img_flipped = flipImg(img)
img_cropped = cropCenter(img, 200, 200)
#or
#img_cropped = crop(img, 150,350,150,350)

plt.figure(figsize=(8,8))
plt.subplot(221)
plt.title("Original")
plt.imshow(img)

plt.subplot(222)
plt.title("Flipped")
plt.imshow(img_flipped)

plt.subplot(223)
plt.title("Original")
plt.imshow(img)

plt.subplot(224)
plt.title("Cropped")
plt.imshow(img_cropped)
```

Out[17]:

```
<matplotlib.image.AxesImage at 0x90f13d0>
```