Nishchal Karwade

Data Science

21-27-10

CV assignment no. 01

Setting up python with openCV

In [24]:
```
import cv2
from matplotlib import pyplot as plt
img = cv2.imread('ny.jpg')
img = cv2.cvtColor(img ,cv2.COLOR_BGR2RGB)
plt.imshow(img)
cv2.waitKey(0)
```

Out[24]:
```
-1
```

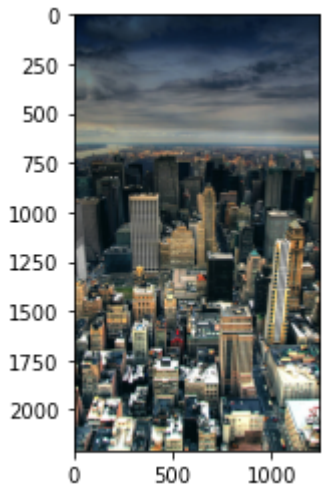


IMAGE DIMENSIONS

In [25]:
```
print('number of pixels:', img.size)
print('dimension:',img.shape)
```

```
number of pixels: 8227008
dimension: (2208, 1242, 3)
```

GRAY SCALING OF IMAGE

In [26]:
```
img_gray = cv2.imread('ny.jpg ',0)
img_gray = cv2.cvtColor(img_gray, cv2.COLOR_BGR2RGB)
plt.imshow(img_gray)
```

```
plt.xticks([]),plt.yticks([])
plt.show()
```

Resizing OF IMAGE

In [27]:

```
width,height = 400,200
img_resized = cv2.resize(img,(width,height))
plt.imshow(img_resized)
plt.xticks([]),plt.yticks([])
plt.show()
```

Cropping of Image

In [28]:

```
img_cropped = img[800:1800,900:1700]
plt.imshow(img_cropped)
plt.xticks([]),plt.yticks([])
plt.show()
```

Flipping of image

In [29]:
```
img_flip=cv2.flip(img,0)
plt.imshow(img_flip)
plt.xticks([]),plt.yticks([])
plt.show()
```

Drawing shapes on image

In [30]:
```
img = cv2.imread('ny.jpg')
img_circle = cv2.circle(img,(650,700),400,(121,0,0),10)
img_circle = cv2.circle(img,(650,700),300,(0,225,0),10)
img_circle = cv2.circle(img,(650,700),200,(0,0,325),10)
img_circle = cv2.cvtColor(img_circle, cv2.COLOR_BGR2RGB)
plt.imshow(img_circle)
plt.xticks([]),plt.yticks([])
plt.show()
```

Inserting text on image

In [31]:
```
font = cv2.FONT_HERSHEY_SIMPLEX
img_text = cv2.putText(img,'NEW YORK', (50,400),font,7,(0,0,350),10,cv2.LINE_AA)
img_text= cv2.cvtColor(img_text,cv2.COLOR_BGR2RGB)
plt.imshow(img_text)
plt.xticks([]),plt.yticks([])
plt.show()
```

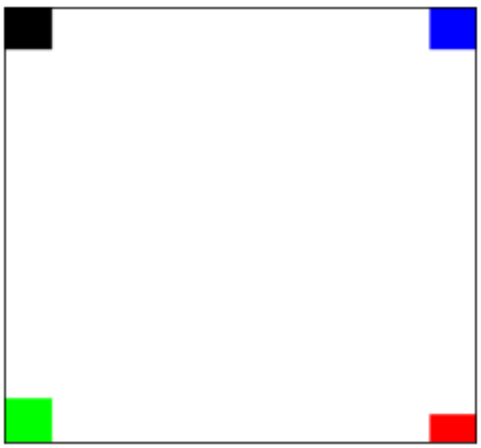
Program to create a white image with user entered size and coloured corner boxes of different colors

In [32]:
```
import numpy as np
import cv2
from matplotlib import pyplot as plt
```

In [33]:
```
height = int(input("Enter the height of the image(pixels): "))
width = int(input("Enter the widtht of the image (pixels) :"))
img = np.zeros([height,width,3], dtype = np.uint8)
img.fill(255)
img_rect = cv2.rectangle(img, (0,0), (int(width/10), int (height/10)),(0,0,0),-1)
img_rect= cv2.rectangle(img, (int(width-width/10),0), (int(width), int (height/10)),
img_rect = cv2.rectangle(img, (0, int (height - height/10)), (int (width/10), int (h
img_rect = cv2.rectangle(img, (int(width - width/10),int (height - height/16)), (int
```

```
img_rect = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
plt.imshow(img_rect)
plt.xticks([]),plt.yticks([])
plt.show()
```

```
Enter the height of the image(pixels): 600
Enter the widtht of the image (pixels) :650
```



In [ ]: