In [1]:
```
import cv2
```

In [4]:
```
img=cv2.imread("f:/images/sachin.jpg",cv2.IMREAD_COLOR)
```

In [5]:
```
img.shape
```

Out[5]:
```
(606, 420, 3)
```

In [6]:
```
img.ndim
```

Out[6]:
```
3
```

In [8]:
```
img
```

Out[8]:
```
array([[[ 11,  12,  10],
        [ 11,  12,  10],
        [ 10,  11,   9],
        ...,
        [ 22,  23,  33],
        [ 22,  24,  34],
        [ 22,  24,  34]],

       [[  7,   8,   6],
        [  8,   9,   7],
        [  9,  10,   8],
        ...,
        [ 23,  24,  34],
        [ 23,  25,  35],
        [ 23,  25,  35]],

       [[  4,   5,   3],
        [  6,   7,   5],
        [  8,   9,   7],
        ...,
        [ 25,  26,  36],
        [ 25,  27,  37],
        [ 25,  27,  37]],

       ...,

       [[ 30,  32,  12],
        [ 33,  35,  15],
        [ 37,  38,  18],
        ...,
        [ 26,  27, 115],
        [ 28,  26, 115],
        [ 27,  25, 114]],

       [[ 35,  37,  17],
        [ 39,  40,  20],
        [ 41,  42,  22],
        ...,
        [ 28,  28, 118],
        [ 28,  28, 118],
        [ 29,  27, 117]],

       [[ 39,  41,  21],
        [ 42,  43,  23],
        [ 44,  45,  25],
        ...,
        [ 31,  31, 121],
```

```
        [ 31,  31, 121],
        [ 34,  32, 122]]], dtype=uint8)
```

In [10]:
```
b,g,r=cv2.split(img)
```

In [12]:
```
img2=cv2.flip(img,-1) #horizomtal(mirror effect)
img3=cv2.flip(img,0)  #both horizontal & vertical
img4=cv2.flip(img,1)  #vertical



cv2.imshow("img",img)
cv2.imshow("img2",img2)
cv2.imshow("img3",img3)
cv2.imshow("img4",img4)

cv2.waitKey()
cv2.destroyAllWindows()
```

In [13]:
```
img5=cv2.resize(img,(300,200))
cv2.imshow("img5",img5)

cv2.waitKey()
cv2.destroyAllWindows()
```

In [28]:
```
img5=cv2.convertScaleAbs(img,alpha=1) #contrast
img5=cv2.convertScaleAbs(img,beta=50) #brightness
cv2.imshow("img5",img5)

cv2.waitKey()
cv2.destroyAllWindows()
```

In [46]:
```
img=cv2.imread("f:/images/sachin.jpg",cv2.IMREAD_COLOR)
cv2.line(img,(100,100),(300,100),(255,255,255),2)
cv2.rectangle(img,(200,150),(350,300),(255,0,255),2)
cv2.putText(img,"Sachin",(200,130),cv2.FONT_HERSHEY_PLAIN,2,(0,255,255),2)
cv2.imshow("img",img)
cv2.imwrite("f:/sachin_30oct.jpg",img)
cv2.waitKey()
cv2.destroyAllWindows()
```

In [48]:
```
import cv2
vdo=cv2.VideoCapture("f:/video2.avi")
while True:
    isImg,img=vdo.read()
    if isImg==False:
        break
    cv2.imshow("img",img)
    cv2.waitKey()
cv2.destroyAllWindows()
vdo.release()
```

```
---------------------------------------------------------------------------
KeyboardInterrupt                         Traceback (most recent call last)
Cell In[48], line 7
      5         break
      6     cv2.imshow("img",img)
----> 7     cv2.waitKey()
      8 cv2.destroyAllWindows()
      9 vdo.release()

KeyboardInterrupt:
```

In [51]:
```
import cv2
vdo=cv2.VideoCapture("f:/video2.avi")
while True:
    isImg,img=vdo.read()
    if isImg==False:
        break
    cv2.imshow("img",img)
    cv2.waitKey(50)
cv2.destroyAllWindows()
vdo.release()
```

```
---------------------------------------------------------------------------
KeyboardInterrupt                         Traceback (most recent call last)
Cell In[51], line 8
      6         break
      7     cv2.imshow("img",img)
----> 8     cv2.waitKey(50)
      9 cv2.destroyAllWindows()
     10 vdo.release()

KeyboardInterrupt:
```

In [52]:
```
import cv2
vdo=cv2.VideoCapture("f:/video2.avi")
while True:
    isImg,img=vdo.read()
    if isImg==False:
        break
    cv2.imshow("img",img)
    key=cv2.waitKey(50)
    if key==ord('c'):
        break
cv2.destroyAllWindows()
vdo.release()
```

In [53]:
```
import cv2
vdo=cv2.VideoCapture(0)
while True:
    isImg,img=vdo.read()
    if isImg==False:
        break
    cv2.imshow("img",img)
    key=cv2.waitKey(50)
    if key==ord('c'):
        break
cv2.destroyAllWindows()
vdo.release()
```

In [54]:
```
import cv2
vdo=cv2.VideoCapture(0)
i=1
while True:
    isImg,img=vdo.read()
    if isImg==False:
        break
    cv2.imshow("img",img)
    cv2.imwrite(f"f:/myimgs/{i}.png",img)
    i+=1
    key=cv2.waitKey(50)
    if key==ord('c'):
        break
cv2.destroyAllWindows()
vdo.release()
```

In [ ]: