

In [1]:

```
import cv2
import numpy as np
```

In []:

```
img = cv2.imread('./data/lena.jpg', cv2.IMREAD_GRAYSCALE)

(h, w) = img.shape
print(h, w)

(cy, cx) = (h//2, w//2)
print(cy, cx)

roi = img[0:cy, 0:cx]

cv2.imshow('img', img)
cv2.imshow('ROI', roi)
cv2.waitKey()
cv2.destroyAllWindows()
```

In []:

```
src = cv2.imread('./data/lena.jpg', cv2.IMREAD_GRAYSCALE)
dst = np.zeros(src.shape, dtype=src.dtype)

N = 4 # 8, 32, 64
height, width = src.shape # 그레이스케일 영상
h = height // N
w = width // N
for i in range(N):
    for j in range(N):
        y = i*h
        x = j*w
        roi = src[y:y+h, x:x+w]
        val = cv2.mean(roi)
        #print(val)
        dst[y:y+h, x:x+w] = val[0] # 그레이스케일 영상

cv2.imshow('dst', dst)
cv2.waitKey()
cv2.destroyAllWindows()
```

In []:

```
src = cv2.imread('./data/lena.jpg', cv2.IMREAD_GRAYSCALE)
roi = cv2.selectROI(src)
print('roi =', roi)

image = src[roi[1]:roi[1]+roi[3],
            roi[0]:roi[0]+roi[2]]

cv2.imshow('img', image)
cv2.waitKey()
cv2.destroyAllWindows()
```

In [2]:



```
src = cv2.imread('./data/lena.jpg', cv2.IMREAD_GRAYSCALE)
rects = cv2.selectROIs('src', src, False, False)
print('rects =', rects)

for r in rects:
    cv2.rectangle(src, (r[0], r[1]), (r[0]+r[2], r[1]+r[3]), 255)

cv2.imshow('src', src)
cv2.waitKey()
cv2.destroyAllWindows()
```

```
rects = [[ 42  36 233 193]
 [ 43 286 368 153]
 [306   6 170 236]]
```

In []:

