

## **Quiz 1：熟悉开发环境及 VI 程序创建**

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### **1. What is image compression?**

Image compression is a type of data compression applied to digital images, to reduce their cost for storage or transmission. Algorithms may take advantage of visual perception and the statistical properties of image data to provide superior results compared with generic data compression methods which are used for other digital data.

### **2. What is segmentation?**

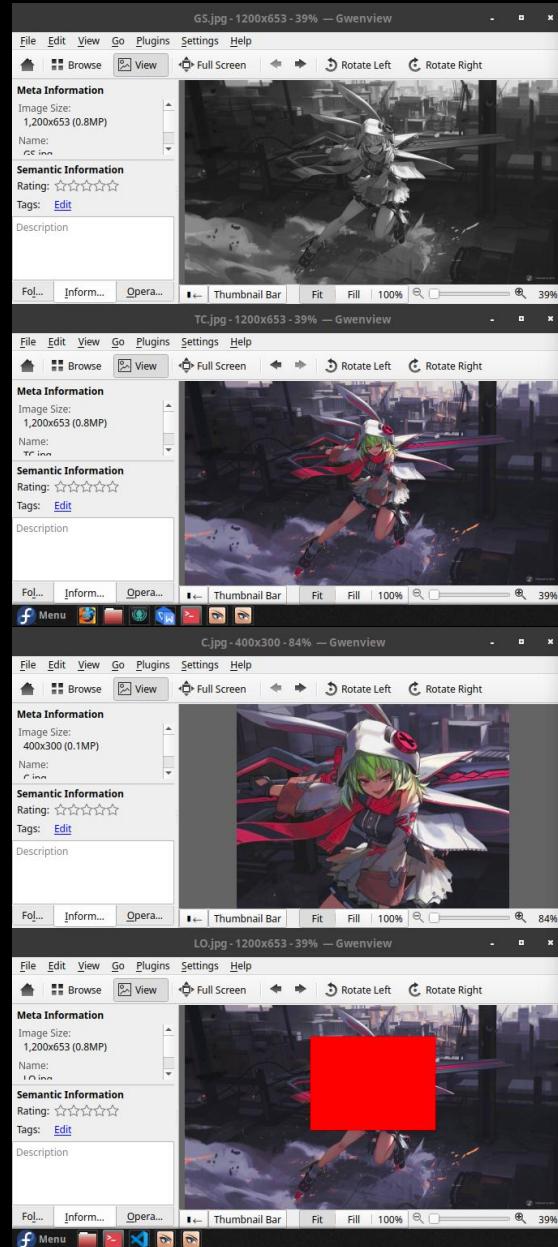
In computer vision, image segmentation is the process of partitioning a digital image into multiple segments (sets of pixels, also known as image objects). The goal of segmentation is to simplify and/or change the representation of an image into something that is more meaningful and easier to analyze.

### **3. What is noise reduction?**

Noise reduction is the process of removing noise from a signal. Noise reduction techniques exist for audio and images. Noise reduction algorithms tend to alter signals to

a greater or lesser degree.

4. Finish the programing in lecture2, you can select any images. Put the codes and results here.



```
[sierra117@ARX-7Arbalest Payload 01]$ ls -asl
total 725
4 drwxrwxrwx. 1 sierra117 sierra117 4096 Feb 20 10:24 .
4 drwxrwxrwx. 1 sierra117 sierra117 4096 Feb 19 20:41 ..
1 -rwxrwxrwx. 1 sierra117 sierra117 162 Feb 20 10:24 ..-DIP01.docx
16 -rwxrwxrwx. 1 sierra117 sierra117 14160 Feb 19 23:45 DIP01.docx
184 -rwxrwxrwx. 1 sierra117 sierra117 184391 Feb 20 10:22 G5.jpg
1 -rwxrwxrwx. 1 sierra117 sierra117 208 Feb 20 10:22 TC2G5.py
516 -rwxrwxrwx. 1 sierra117 sierra117 524727 Feb 5 19:50 TC.jpg
[sierra117@ARX-7Arbalest Payload 01]$ cat TC2G5.py
import cv2
cv2.namedWindow("Color Image")
im = cv2.imread('TC.jpg')
gray = cv2.cvtColor(im, cv2.COLOR_BGR2GRAY)
cv2.imwrite('G5.jpg', gray)
cv2.imshow("Color Image", im)
cv2.waitKey(0)
cv2.destroyAllWindows()
[sierra117@ARX-7Arbalest Payload 01]$
```

```
[sierra117@ARX-7Arbalest:run/media/sierra117/Media\] + - x
[sierra117@ARX-7Arbalest Payload 01]$ ls -asl
total 725
4 drwxrwxrwx. 1 sierra117 sierra117 4096 Feb 20 10:24 .
4 drwxrwxrwx. 1 sierra117 sierra117 4096 Feb 19 20:41 ..
1 -rwxrwxrwx. 1 sierra117 sierra117 162 Feb 20 10:24 ..-DIP01.docx
16 -rwxrwxrwx. 1 sierra117 sierra117 14160 Feb 19 23:45 DIP01.docx
184 -rwxrwxrwx. 1 sierra117 sierra117 184391 Feb 20 10:22 G5.jpg
1 -rwxrwxrwx. 1 sierra117 sierra117 208 Feb 20 10:22 TC2G5.py
516 -rwxrwxrwx. 1 sierra117 sierra117 524727 Feb 5 19:50 TC.jpg
[sierra117@ARX-7Arbalest Payload 01]$ cat crop.py
from __future__ import print_function
import argparse
import cv2
ap = argparse.ArgumentParser()
args = vars(ap.parse_args())

image = cv2.imread('TC.jpg')
cv2.imshow("Original", image)
(b, g, r) = image[0, 0]
print("Pixel at (0, 0) - Red: {}, Green: {}, Blue: {}".format(r, g, b))
image[0, 0] = (0, 0, 255)
(b, g, r) = image[0, 0]
print("Pixel at (0, 0) - Red: {}, Green: {}, Blue: {}".format(r, g, b))
corner = image[100:400, 400:800]
cv2.imshow("Corner", corner)
cv2.imwrite('C.jpg', corner)

image[100:400, 400:800] = (0, 0, 255)

cv2.imshow("Updated", image)
cv2.imwrite('LO.jpg', image)
cv2.waitKey(0)
[sierra117@ARX-7Arbalest Payload 01]$
```

Thursday February 20, 10:30:38

Thursday February 20, 11:45:08