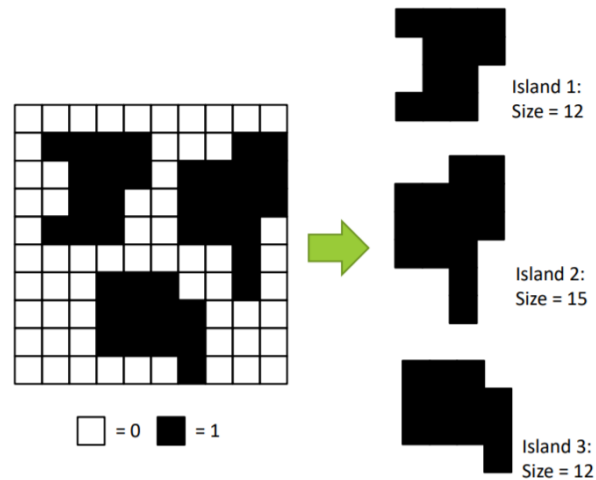


segment left image into 3 isolated islands and count their size.



Step1: turn the image into matrix.

```
[[0 0 0 0 0 0 0 0 0 0]
 [0 1 1 1 1 0 0 0 1 1]
 [0 0 1 1 1 0 1 1 1 1]
 [0 0 1 1 0 0 1 1 1 1]
 [0 1 1 1 0 0 1 1 1 0]
 [0 0 0 0 0 0 0 0 1 0]
 [0 0 0 1 1 1 0 0 1 0]
 [0 0 0 1 1 1 1 0 0 0]
 [0 0 0 1 1 1 1 0 0 0]
 [0 0 0 0 0 0 1 0 0 0]]
```

Step2: Algorithm

```
def segmentation(x, y, island):
    island[x, y] = 1
    raw_image[x, y] = 0
    for i in range(-1, 2, 2):
        try:
            if raw_image[x+i, y] == 1:
                segmentation(x+i, y, island)
        except IndexError:
            continue
    for i in range(-1, 2, 2):
        try:
            if raw_image[x, y+i] == 1:
                segmentation(x, y+i, island)
        except IndexError:
            continue
```

```

count = 0
for row in range(raw_image.shape[0]):
    for column in range(raw_image.shape[0]):
        if raw_image[row, column] == 1:
            island = np.zeros((10, 10))
            count+=1
            segmentation(row, column, island)
            print('island'+str(count)+':')
            print(island)
            print('size:', np.sum(island))

```

Result:

island1:	island2:	island3:
[[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]	[[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]	[[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
[0. 1. 1. 1. 1. 0. 0. 0. 0. 0.]	[0. 0. 0. 0. 0. 0. 0. 0. 1. 1.]	[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
[0. 0. 1. 1. 1. 0. 0. 0. 0. 0.]	[0. 0. 0. 0. 0. 0. 1. 1. 1. 1.]	[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
[0. 0. 1. 1. 0. 0. 0. 0. 0. 0.]	[0. 0. 0. 0. 0. 0. 1. 1. 1. 1.]	[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
[0. 1. 1. 1. 0. 0. 0. 0. 0. 0.]	[0. 0. 0. 0. 0. 0. 1. 1. 1. 0.]	[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]	[0. 0. 0. 0. 0. 0. 0. 0. 1. 0.]	[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]	[0. 0. 0. 0. 0. 0. 0. 0. 1. 0.]	[0. 0. 0. 1. 1. 1. 0. 0. 0. 0.]
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]	[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]	[0. 0. 0. 1. 1. 1. 1. 0. 0. 0.]
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]	[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]	[0. 0. 0. 1. 1. 1. 1. 0. 0. 0.]
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]]	[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]]	[0. 0. 0. 0. 0. 0. 0. 1. 0. 0.]]
size: 12.0	size: 15.0	size: 12.0