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Console output from Eclipse for Image 8

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Binary Image Input:

\_\_\_\_\_BINARY IMAGE INPUT\_\_\_\_\_

```
      111111
     1111
    1  1      11111 111
  1111      111
   1111      11111
  111 111      1111
   111      1111
   111      11 11
      1111      11
     1111
      1111 11 11
      111      111
      11      1111
     1111      111
     1111      111
  1111 11      1111
  1111 111111
  111
     1111
```

---

Result of Binary Image Smoothing using 3x3 filter mask:

BINARY IMAGE AFTER SMOOTHING

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```
      111111
     1111
    1  1      11111 111
1111      111
   1111      11111
111 111      1111
   111      1111
   111      11 11
       1111      11
     1111
       1111 11 11
       111      111
       11      1111
       1111      111
       1111      111
1111 11      1111
   1111 111111
   111
   111
```

---

Result of 4 Neighbors filling :

\_\_\_\_\_BINARY IMAGE AFTER 4 NEIGHBORS FILLING\_\_\_\_\_

```
      111111
    1111
  1111      11111 111
111111      111111
111111      11111
1111111      111111
  111      1111
  111      11111
    111111      11
    111111
      111111 11111
      111      1111
      111      1111
      111      1111
    1111      111
    1111      1111
1111111      11111
  1111 111111
  1111
    111
```

\_\_\_\_\_

Result of 8 Neighbors filling :

\_\_\_\_\_BINARY IMAGE AFTER 8 NEIGHBORS FILLING\_\_\_\_\_

```
      111111
    11111  11
  11111    1111111111
111111    111111111
111111    1111111
1111111   111111
111111    11111
  11111    11111
    11111  11111
      111111111111
      111111111111
      111111111111
      111111111111
        1111    1111
        111     1111
        1111    111
        1111    1111
11111111    111111
11111111111111
  111111
    111
```

---

Result of Size Normalization Binary Image:

Row Size before size normalization : 26

Row Size before size normalization : 34

Normalized Row Size : 12

Normalized Column Size : 16

\_\_\_\_\_BINARY IMAGE AFTER SIZE NORMALIZATION\_\_\_\_\_

```

  111
11 11111
111 111
111 111
  111111
  1111111
    1 11
    11 11
  1111111
    1
```

Binary Image's "Center Of Gravity" is at Row Index: 11 Column Index: 17  
Center of Gravity pixel denoted by NUMBER '8'

```

      111111
    11111 11
  11111 111111111111
111111 1111111111
111111 1111111
1111111 111111
111111 11111
  111111 11111
    111118111111
    111111111111
      111111111111
        1111 1111
        111 1111
        1111 111
        11111 1111
11111111 111111
  11111111111111
    111111
      111
```

Size Normalized Binary Image's "Center Of Gravity" is at Row Index: 5  
Column Index: 8  
Center of Gravity pixel denoted by NUMBER '8'

```
  111
 11  111
111   11
111   11
  118111
 111111
   1   1
  11   1
1111111
   1
```

---

Result of Zhang-Suen Skeletonization Binary Image:

\_\_\_\_\_BINARY IMAGE AFTER ZHANG-SUEN THINNING\_\_\_\_\_

```
  111
  1  111
 1    1
  1   1
  1  11
   111 1
   1   1
   1   1
  11111
```

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