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**Re: Program to generate a Spiral Matrix**

3 messages

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**pradyot** <pdot.sam@gmail.com>

Wed, Jul 19, 2017 at 12:05 AM

To: Varun Gupta &lt;varungupta3009@gmail.com&gt;, CAT\_2017\_BATCH1 &lt;cat\_2017\_batch1@googlegroups.com&gt;

Hey..

Tried something with the algorithm.. Though I'm not very sure whether it'll actually work..

```
//Initialize m*n matrix to 0..
```

```
c=n
```

```
d=m
```

```
For i=1 to n do
```

```
For j=1 to m do
```

```
  If a(i,j+1) = 0 do
```

```
    While j < c do
```

```
      a(i,j+1) = a(i,j) + 1
```

```
    Else if a(i+1,j) = 0 do
```

```
      While i<d-1 do
```

```
        a(i+1,j+1) = a(i,j+1) + 1
```

```
    c=c-1
```

```
    d=d-1
```

Pls correct me if and where I'm going wrong

On July 18, 2017, at 10:51 PM, Varun Gupta <[varungupta3009@gmail.com](mailto:varungupta3009@gmail.com)> wrote:

The program has been created in Python.

Those who do not have Python, download the latest version from <https://www.python.org/ftp/python/3.6.2/python-3.6.2.exe>

The Source Code has been attached below.

Raw File:

```
|  #! python 3
|
|  # spiralMatrixGenerator.py - Creates a spiral matrix given dimensions
|
|  # Created by Varun R. Gupta
|
|
|  while True:
|
|      row = input("Please enter the number of rows in the matrix - ")
|
|      try:
|
|          row = int(row)
|
|          break
|
|      except ValueError:
```

```

        print("Please enter a valid integer")
        continue
    if row < 1:
        print("Please enter a valid integer greater than 1")

while True:
    col = input("Please enter the number of columns in the matrix - ")
    try:
        col = int(col)
        break
    except ValueError:
        print("Please enter a valid integer")
        continue
    if col < 1:
        print("Please enter a valid integer greater than 1")

a = [[]]

for i in range(0, row):
    for j in range(0, col):
        a[i].append(0)
    a.append([])

direc = "U"
n = row*col
l = 0
RR = 0
DC = col - 1
LR = row - 1
UC = 0

while l != n:
    if direc == "U":
        r = RR
        RR += 1

        for c in range(0, col):

```

```

        if a[r][c] == 0:
            a[r][c] = 1 + 1
            l += 1
            direc = "R"
elif direc == "R":
    c = DC
    DC -= 1
    for r in range(0, row):
        if a[r][c] == 0:
            a[r][c] = 1 + 1
            l += 1
            direc = "D"
elif direc == "D":
    r = LR
    LR -= 1
    for c in range(col-1, -1, -1):
        if a[r][c] == 0:
            a[r][c] = 1 + 1
            l += 1
            direc = "L" ;
elif direc == "L":
    c = UC
    UC += 1
    for r in range(row-1, -1, -1):
        if a[r][c] == 0:
            a[r][c] = 1 + 1
            l += 1
            direc = "U"

for i in range(0, row):
    for j in range(0, col):
        print(a[i][j], end = "\t")
    print()

input()

```

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**pradyot** <pdot.sam@gmail.com>

Wed, Jul 19, 2017 at 12:22 AM

To: Varun Gupta <varungupta3009@gmail.com>, CAT\_2017\_BATCH1 <cat\_2017\_batch1@googlegroups.com>

Hey..

Tried writing an algorithm, but not sure about it..

#initialize m\*n matrix to 0

c = n

d = m

For i=1 to m

For j=1 to n

  If a(i,j+1)= 0 do

    While j<c do

      a(i,j+1)= a(i,j) + 1

  Else if a(i+1,j)=0

    While i<d-1 do

      a(i+1,j+1)=a(i,j+1) + 1

c=c-1

d=d-1

Please feel free to point out if and where I may be going wrong..

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**pradyot** <pdot.sam@gmail.com>

Wed, Jul 19, 2017 at 6:44 AM

To: Varun Gupta <varungupta3009@gmail.com>, CAT\_2017\_BATCH1 <cat\_2017\_batch1@googlegroups.com>

Spotted a mistake in my algorithm..

The if conditions should be

If a(i,(j+(-1)^(c+1)))=0 do

And

Else if a(i+(-1)^(d+1),j)=0

For the while loop, it has to be a(i,j+(-1)^(c+1)) = a(i,j) + 1

And

a((i+1)^(d+1),(j+1)^(c+1))=a(i,j+1) + 1

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