

## Quiz 8

COMP9021 Principles of Programming

2015 session 2

### Sample outputs

We print out a list (we pass a list as argument to `print()`).  
So this list is printed out on one line.

```
$ python3 quiz_8.py
Enter five integers: 0 2 0 0 0
Here is the grid that has been generated:
  1  1  0  1  1  1  1  1  1  0
  0  1  0  0  1  0  1  0  0  1
  1  0  1  1  1  0  1  1  1  0
  0  0  1  0  1  1  0  1  0  0
  0  0  0  1  0  0  1  1  0  1
  1  0  1  0  1  1  0  1  1  0
  1  0  0  0  0  1  1  0  0  0
  0  0  0  1  1  0  0  1  1  1
  1  1  0  1  0  1  1  0  0  0
  1  0  0  1  0  1  1  0  0  0
```

There is no way to get a sum of 0 starting from (0, 0)

```
$ python3 quiz_8.py
Enter five integers: 0 2 0 0 4
Here is the grid that has been generated:
  1  1  0  1  1  1  1  1  1  0
  0  1  0  0  1  0  1  0  0  1
  1  0  1  1  1  0  1  1  1  0
  0  0  1  0  1  1  0  1  0  0
  0  0  0  1  0  0  1  1  0  1
  1  0  1  0  1  1  0  1  1  0
  1  0  0  0  0  1  1  0  0  0
  0  0  0  1  1  0  0  1  1  1
  1  1  0  1  0  1  1  0  0  0
  1  0  0  1  0  1  1  0  0  0
```

With North as initial direction, and exploring the space clockwise,  
the path yielding a sum of 4 starting from (0, 0) is:  
[(0, 0), (0, 1), (0, 2), (0, 3), (0, 4)]

```

$ python3 quiz_8.py
Enter five integers: 0 2 0 0 12
Here is the grid that has been generated:
  1  1  0  1  1  1  1  1  1  0
  0  1  0  0  1  0  1  0  0  1
  1  0  1  1  1  0  1  1  1  0
  0  0  1  0  1  1  0  1  0  0
  0  0  0  1  0  0  1  1  0  1
  1  0  1  0  1  1  0  1  1  0
  1  0  0  0  0  1  1  0  0  0
  0  0  0  1  1  0  0  1  1  1
  1  1  0  1  0  1  1  0  0  0
  1  0  0  1  0  1  1  0  0  0

```

With North as initial direction, and exploring the space clockwise,  
the path yielding a sum of 12 starting from (0, 0) is:  
[(0, 0), (0, 1), (0, 2), (0, 3), (0, 4), (0, 5), (0, 6), (0, 7), (0, 8), (0, 9),  
(1, 9), (2, 9), (3, 9), (4, 9), (5, 9), (6, 9), (7, 9), (8, 9), (9, 9), (9, 8),  
(9, 7), (9, 6)]

```

$ python3 quiz_8.py
Enter five integers: 0 2 0 0 50
Here is the grid that has been generated:
  1  1  0  1  1  1  1  1  1  0
  0  1  0  0  1  0  1  0  0  1
  1  0  1  1  1  0  1  1  1  0
  0  0  1  0  1  1  0  1  0  0
  0  0  0  1  0  0  1  1  0  1
  1  0  1  0  1  1  0  1  1  0
  1  0  0  0  0  1  1  0  0  0
  0  0  0  1  1  0  0  1  1  1
  1  1  0  1  0  1  1  0  0  0
  1  0  0  1  0  1  1  0  0  0

```

With North as initial direction, and exploring the space clockwise,  
the path yielding a sum of 50 starting from (0, 0) is:  
[(0, 0), (0, 1), (0, 2), (0, 3), (0, 4), (0, 5), (0, 6), (0, 7), (0, 8), (0, 9),  
(1, 9), (2, 9), (3, 9), (4, 9), (5, 9), (6, 9), (7, 9), (8, 9), (9, 9), (9, 8),  
(9, 7), (9, 6), (9, 5), (9, 4), (9, 3), (9, 2), (9, 1), (9, 0), (8, 0), (7, 0),  
(6, 0), (5, 0), (4, 0), (3, 0), (2, 0), (1, 0), (1, 1), (1, 2), (1, 3), (1, 4),  
(1, 5), (1, 6), (1, 7), (1, 8), (2, 8), (3, 8), (4, 8), (5, 8), (6, 8), (7, 8),  
(8, 8), (8, 7), (8, 6), (8, 5), (8, 4), (8, 3), (8, 2), (8, 1), (7, 1), (6, 1),  
(5, 1), (4, 1), (3, 1), (2, 1), (2, 2), (2, 3), (2, 4), (2, 5), (2, 6), (2, 7),  
(3, 7), (4, 7), (5, 7), (6, 7), (7, 7), (7, 6), (7, 5), (7, 4), (7, 3), (7, 2),  
(6, 2), (5, 2), (4, 2), (3, 2), (3, 3), (3, 4), (3, 5), (3, 6), (4, 6), (5, 6),  
(6, 6), (6, 5), (6, 4), (6, 3), (5, 3), (4, 3), (4, 4), (4, 5), (5, 5), (5, 4)]

```
$ python3 quiz_8.py
Enter five integers: 0 10 2 7 20
Here is the grid that has been generated:
```

6	6	0	4	8	7	6	4	7	5
9	3	8	2	4	2	1	9	4	8
9	2	4	1	1	5	7	8	1	5
6	5	9	3	8	7	7	8	4	0
8	0	1	6	0	9	7	5	3	5
1	3	9	3	3	2	8	7	1	1
5	8	7	1	4	8	4	1	8	5
8	3	9	8	9	4	7	1	9	6
5	9	3	4	2	3	2	0	9	4
7	1	1	2	2	0	1	8	6	8

With North as initial direction, and exploring the space clockwise,  
the path yielding a sum of 20 starting from (2, 7) is:

[(2, 7), (1, 7), (1, 6), (1, 5)]

```
Enter five integers: 0 10 2 7 52
Here is the grid that has been generated:
```

6	6	0	4	8	7	6	4	7	5
9	3	8	2	4	2	1	9	4	8
9	2	4	1	1	5	7	8	1	5
6	5	9	3	8	7	7	8	4	0
8	0	1	6	0	9	7	5	3	5
1	3	9	3	3	2	8	7	1	1
5	8	7	1	4	8	4	1	8	5
8	3	9	8	9	4	7	1	9	6
5	9	3	4	2	3	2	0	9	4
7	1	1	2	2	0	1	8	6	8

With North as initial direction, and exploring the space clockwise,  
the path yielding a sum of 52 starting from (2, 7) is:

[(2, 7), (1, 7), (0, 7), (0, 8), (0, 9), (1, 9), (2, 9), (3, 9), (4, 9), (5, 9)]

```
$ python3 quiz_8.py
Enter five integers: 0 6 9 5 11
Here is the grid that has been generated:
  3 3 0 2 4 3 3 2 3 2
  4 1 4 1 2 1 0 4 2 4
  5 4 1 2 0 5 0 5 2 3
  4 0 2 3 2 4 5 1 4 3
  3 4 2 0 4 0 0 5 3 5
  5 5 0 4 3 2 1 5 2 5
  0 1 4 1 1 1 4 3 0 0
  2 4 3 0 2 4 2 5 0 4
  2 4 1 4 4 4 2 3 0 4
  3 2 4 1 2 1 1 1 0 4
```

With North as initial direction, and exploring the space clockwise,  
the path yielding a sum of 11 starting from (9, 5) is:

```
[(9, 5), (8, 5), (7, 5), (6, 5), (6, 4)]
```

```
$ python3 quiz_8.py
Enter five integers: 0 6 9 5 100
Here is the grid that has been generated:
  3 3 0 2 4 3 3 2 3 2
  4 1 4 1 2 1 0 4 2 4
  5 4 1 2 0 5 0 5 2 3
  4 0 2 3 2 4 5 1 4 3
  3 4 2 0 4 0 0 5 3 5
  5 5 0 4 3 2 1 5 2 5
  0 1 4 1 1 1 4 3 0 0
  2 4 3 0 2 4 2 5 0 4
  2 4 1 4 4 4 2 3 0 4
  3 2 4 1 2 1 1 1 0 4
```

With North as initial direction, and exploring the space clockwise,  
the path yielding a sum of 100 starting from (9, 5) is:

```
[(9, 5), (8, 5), (7, 5), (6, 5), (5, 5), (4, 5), (3, 5), (2, 5), (1, 5), (0, 5),
(0, 6), (0, 7), (0, 8), (0, 9), (1, 9), (2, 9), (3, 9), (4, 9), (5, 9), (6, 9),
(7, 9), (8, 9), (9, 9), (9, 8), (9, 7), (9, 6), (8, 6), (7, 6), (6, 6), (5, 6),
(4, 6), (3, 6), (2, 6), (1, 6), (1, 7), (1, 8), (2, 8), (3, 8), (4, 8), (5, 8)]
```