Python – Nested Loops

**Purpose**

This project was designed to teach you how to use nested loops in python.

**Description**

Implement the 10 functions from the python shell provided. There are explanations with every function. You may assume all arguments are valid. A screenshot of the executed code is below. Please note that none of the outputs have trailing whitespace. rstrip() may be useful.

**Program Shell**

nestedloops\_project.py, test\_nestedloops.py

**Sample Execution**

Rectangle of stars 9 X 6

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Grid of Numbers w/ size 10:

0 0 0 0 0 0 0 0 0 0

1 1 1 1 1 1 1 1 1 1

2 2 2 2 2 2 2 2 2 2

3 3 3 3 3 3 3 3 3 3

4 4 4 4 4 4 4 4 4 4

5 5 5 5 5 5 5 5 5 5

6 6 6 6 6 6 6 6 6 6

7 7 7 7 7 7 7 7 7 7

8 8 8 8 8 8 8 8 8 8

9 9 9 9 9 9 9 9 9 9

Staircase of numbers w/ size 10:

0

0 1

0 1 2

0 1 2 3

0 1 2 3 4

0 1 2 3 4 5

0 1 2 3 4 5 6

0 1 2 3 4 5 6 7

0 1 2 3 4 5 6 7 8

0 1 2 3 4 5 6 7 8 9

Staircase of numbers w/ size 10 reflected:

0 1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8

0 1 2 3 4 5 6 7

0 1 2 3 4 5 6

0 1 2 3 4 5

0 1 2 3 4

0 1 2 3

0 1 2

0 1

0

Multiplication table(size=9):

1 2 3 4 5 6 7 8 9

2 4 6 8 10 12 14 16 18

3 6 9 12 15 18 21 24 27

4 8 12 16 20 24 28 32 36

5 10 15 20 25 30 35 40 45

6 12 18 24 30 36 42 48 54

7 14 21 28 35 42 49 56 63

8 16 24 32 40 48 56 64 72

9 18 27 36 45 54 63 72 81

Pyramid w/ 9 rows:

1

1 2 1

1 2 3 2 1

1 2 3 4 3 2 1

1 2 3 4 5 4 3 2 1

1 2 3 4 5 6 5 4 3 2 1

1 2 3 4 5 6 7 6 5 4 3 2 1

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

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

Diamond:

1

1 2 1

1 2 3 2 1

1 2 3 4 3 2 1

1 2 3 4 5 4 3 2 1

1 2 3 4 5 6 5 4 3 2 1

1 2 3 4 5 6 7 6 5 4 3 2 1

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

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

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

1 2 3 4 5 6 7 7 6 5 4 3 2

1 2 3 4 5 6 6 5 4 3 2

1 2 3 4 5 5 4 3 2

1 2 3 4 4 3 2

1 2 3 3 2

1 2 2

1

Box: 10 X 5

XXXXXXXXXX

X X

X X

X X

XXXXXXXXXX

Box: 16 X 8

XXXXXXXXXXXXXXXX

X X

X X

X X

X X

X X

X X

XXXXXXXXXXXXXXXX

X marks the spot:

X\_\_\_\_\_\_\_X

\_X\_\_\_\_\_X\_

\_\_X\_\_\_X\_\_

\_\_\_X\_X\_\_\_

\_\_\_\_X\_\_\_\_

\_\_\_X\_X\_\_\_

\_\_X\_\_\_X\_\_

\_X\_\_\_\_\_X\_

X\_\_\_\_\_\_\_X

Reverse Diamond(3):

1 3 5 5 3 1

3 5 5 3

5 5

5 5

3 5 5 3

1 3 5 5 3 1

Reverse Diamond(6):

1 3 5 7 9 11 11 9 7 5 3 1

3 5 7 9 11 11 9 7 5 3

5 7 9 11 11 9 7 5

7 9 11 11 9 7

9 11 11 9

11 11

11 11

9 11 11 9

7 9 11 11 9 7

5 7 9 11 11 9 7 5

3 5 7 9 11 11 9 7 5 3

1 3 5 7 9 11 11 9 7 5 3 1