

For loop patterns

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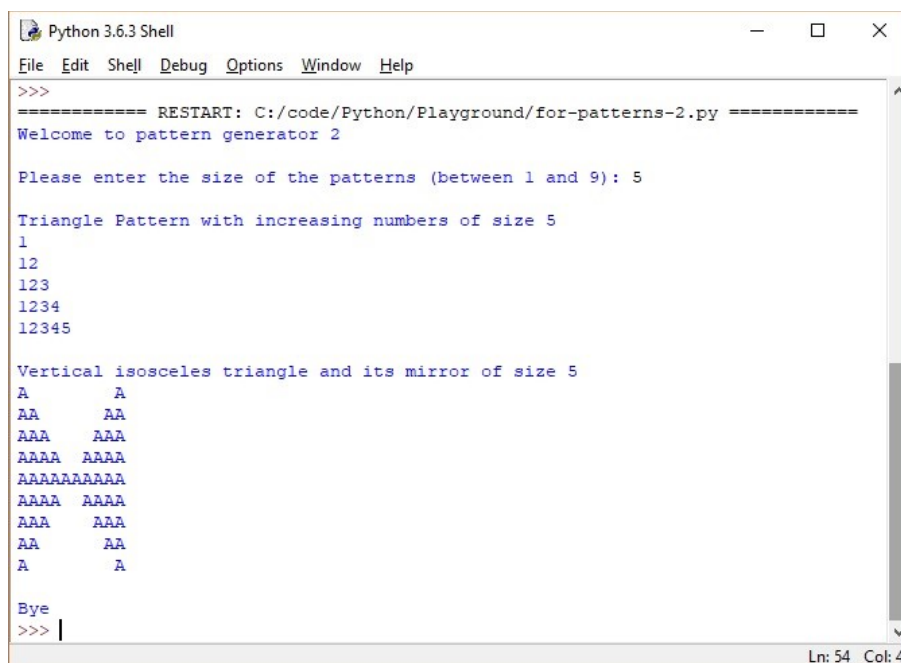
Due Oct 29 by 11:59pm **Points** 30 **Submitting** a file upload **File Types** py
Available Oct 19 at 6am - Oct 29 at 11:59pm 11 days

In this assignment, you will write a program that creates patterns using for-loops given a number between 1 and 9 (both inclusive).

This program

- Asks for a number between 1 and 9
- Validates that number is between 1 and 9 (both inclusive)
- Prints two patterns based on the given number. (See sample runs below)
 - Pattern 1: A triangle with height equal to the size, with each line of increasing length displaying increasing number values starting with 1. (See sample runs below) Hint: Use a nested-for loop to get this pattern working.
 - Pattern 2: A vertical isosceles triangle and its mirror image made up of letter "A" (See sample runs below). Hint: You don't need a nested-for loop here. Split the figure in top-half and bottom-half parts. Analyze the pattern and come up with a formula for the number of 'A's and number of spaces required on each row.

Sample runs:



```
Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
>>>
===== RESTART: C:/code/Python/Playground/for-patterns-2.py =====
Welcome to pattern generator 2

Please enter the size of the patterns (between 1 and 9): 5

Triangle Pattern with increasing numbers of size 5
1
12
123
1234
12345

Vertical isosceles triangle and its mirror of size 5
A      A
AA     AA
AAA    AAA
AAAA   AAAA
AAAAA  AAAAA
AAAAA  AAAAA
AAAA   AAAA
AAA    AAA
AA     AA
A      A

Bye
>>> |
```

Ln: 54 Col: 4

```
Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
===== RESTART: C:/code/Python/Playground/for-patterns-2.py =====
Welcome to pattern generator 2

Please enter the size of the patterns (between 1 and 9): 7

Triangle Pattern with increasing numbers of size 7
1
12
123
1234
12345
123456
1234567

Vertical isosceles triangle and its mirror of size 7
A      A
AA     AA
AAA    AAA
AAAA   AAAA
AAAAA  AAAAA
AAAAAA AAAAAA
AAAAAAA AAAAAA
AAAAAAA AAAAAA
AAAAAA  AAAAA
AAAAA   AAAAA
AAAA    AAAA
AAA     AAA
AA      AA
A       A

Bye
>>>
```

Ln: 85 Col: 4

Some Rubric		
Criteria	Ratings	Pts
Welcome message printed		1.0 pts
Prompt the user for size and input validated using a while loop.		5.0 pts
Triangle pattern printed correctly Triangle pattern printed correctly using a nested-loop.		10.0 pts
Mirror image pattern printed correctly Mirror image pattern printed correctly using a for-loop		10.0 pts
Code is well written, useful comments added.		4.0 pts
		Total Points: 30.0