# For loop patterns

# 30 Points Possible

Attempt 1	~	In Progress	
Attempt		NEXT UP: Submit Assignme	nt



### **Unlimited Attempts Allowed**

5/6/2024 to 5/14/2024

#### ∨ Details

In this assignment, you will write a program that creates patterns using for-loops given the size - an odd number between 7 and 15 (both inclusive).

#### This program

- Asks for size (an odd number between 7 and 15 (both inclusive))
- Validates that size is an odd number between 7 and 15 (both inclusive) See the first sample run to see validation.
- Prints two patterns based on the given size.
  - Pattern 1: A pattern of (, \* and ) as shown below in the sample programs. This pattern has as many lines
    as the size of the pattern (user input) with each line having 2\*size+1 characters total.
  - Pattern 2: A pattern with mirror image made up of letter "A" (See sample runs below). Hint: Split the figure in top-half and bottom-half parts, drawing them with two different for-loops. Look at each pattern closely and come up with a formula for the number of 'A's and number of spaces required on each row in the pattern.

Add a comment block at the top of the file, providing your name, date, assignment name etc. Save the program to a file with a name of the format first\_last\_forloops.py and submit it as your solution.

Sample run 1 with validation and size = 7

Course Chat

```
IDLE Shell 3.10.4
                                                                                                File Edit Shell <u>Debug Options Window H</u>elp
   Welcome to pattern generator
   Please enter the size (an odd number between 7 and 15): -3
   Size should be an odd number between 7 and 15.
   Please enter the size (an odd number between 7 and 15): 8
   Size should be an odd number between 7 and 15.
   Please enter the size (an odd number between 7 and 15): 7
   Pattern 1 of size 7
    (************)
    ((********))
    (((********)))
    ((((*******))))
    (((((******)))))
    ((((((***))))))
    (((((((**)))))))
   Mirror image pattern of size 7
                A
   AA
               AA
   AAA
              AAA
   AAAA
             AAAA
   AAAAA
            AAAAA
   AAAAAA AAAAAA
   AAAAAAAAAAA
   AAAAAA AAAAAA
   AAAAA
            AAAAA
   AAAA
             AAAA
   AAA
              AAA
   AA
               AA
   A
   Bye
>>>
                                                                                                Ln: 165 Col: 0
```

#### Sample Run 2: size = 9

```
IDLE Shell 3.10.4
                                                                                        File Edit Shell Debug Options Window Help
   Welcome to pattern generator
   Please enter the size (an odd number between 7 and 15): 9
   Pattern 1 of size 9
   (***************)
   ((************))
   (((***********)))
   ((((**********))))
   (((((*********)))))
   ((((((********))))))
   (((((((******)))))))
   ((((((((***))))))))
   (((((((((**)))))))))
   Mirror image pattern of size 9
                   A
   AA
                  AA
   AAA
                 AAA
   AAAA
                AAAA
   AAAAA
               AAAAA
   AAAAA
              AAAAA
   AAAAAA
             AAAAAA
   AAAAAAA AAAAAAA
   AAAAAAAAAAAAAAA
   ΑΑΑΑΑΑΑ ΑΑΑΑΑΑΑ
   AAAAAA
            AAAAAA
   AAAAA
              AAAAA
   AAAAA
              AAAAA
   AAAA
                AAAA
   AAA
                 AAA
   AA
                  AA
   A
   Bye
>>>
                                                                                       Ln: 133 Col: 0
```

## ∨ View Rubric

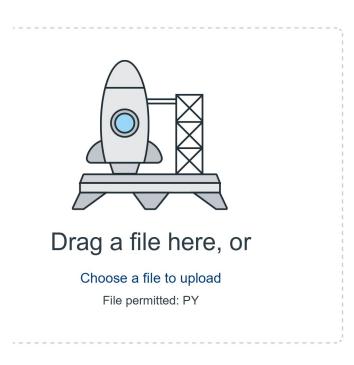
## Some Rubric

Criteria	Ratings	Pts
Welcome message printed		/ 1 pts
Prompt the user for size and input validated using a while loop.		/ 5 pts
First pattern printed correctly		/ 10 pts
Mirror image pattern printed correctly using 2 for-loops		/ 10 pts
Code is well written, useful comments added.		/ 4 pts
		Total Points: 0

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