

CSE 1321L: Programming and Problem Solving I Lab

Lab 5

Flow Control (Part 2)

What students will learn:

- Using **WHILE** loops.
- Using **FOR** loops.
- Using **Nested FOR** loops.

Content

- Overview
- Lab5A: Largest of 10
- Lab5B: The Box
- Lab5C: Say "please"

Flow Control

FOR

WHILE

FOR

FORd WHILEp

WHILE

```
while <condition>:  
    <body>
```

```
for <element> in <iterable>:  
    <body>
```

WHILE

Boolean `True` or `False`

when

Use a **FOR** loop when you want to repeat something a **certain number of times**. For example:

- If you want to repeat something 100 times.
- If you want to count from 50 to 3000 in increments of 10.

Use a **WHILE** loop when you **do not know how many times** something will repeat. For example:

- If you ask the user to enter a number between 1 to 10 and they consistently enter a higher number such as 45, then this loop could go on forever. Eventually, the user would enter a valid number.

Lab5A.py
Lab5B.py
Lab5C.py

Lab5A: Largest of 10

10

at a time

10

10

10 positive integer 10 one

Requirements:

Lab5B: The Box

File Edit View
Run

Run

*

Requirements:

Your solution must use **Nested FOR** loops exclusively to print the shapes.

- You **CANNOT** use the multiplication operator `*` to repeatedly print a string.

The user will enter a whole number for the size, there is no need to implement input validation.

After the size value has been read, the program should use the size value to print a box, a right-

facing right triangle, and a left-facing right triangle.

5 (t)u5 TT3-3.4 (a)-1.8 il p-0.9 50.8 5 2 c)3.2 p-0.9 of (a)-1.8 5 4 (e))2 T3 15

l(e)4.2 ng)-1.6 h(a)-0 1.9 w,)2 lid for t box-, a

```
*
**
***
****
*****
```

This is the requested left-facing 5x5 right-triangle:

```
*
**
***
****
*****
```

Sample Output #3

Please enter a value for the size: 8

This is the requested 8x8 box:

```
*****
*****
*****
*****
*****
*****
*****
*****
```

This is the requested right-facing 8x8 right-

Lab5C: Say "please"



Requirements:

Since we do not know how many times the user will say "no", the loop used here is a **WHILE** loop.

Your solution must implement a **WHILE** loop exclusively.

Keep asking 'If you would like to stop this program, say "please":

Keep looping until the user enters "please".

The program should terminate if the user enters "please"

- The user input should be case-sensitive, meaning the input **must** be exactly "please" in all lowercase letters.

Sample Output #1

If you would like to stop this program, say "please": please
Program complete

Sample Output #2

If you would like to stop this program, say "please": pLeAsE
If you would like to stop this program, say "please": Please
If you would like to stop this program, say "please": please
Program complete

Sample Output #3

If you would like to stop this program, say "please": no
If you would like to stop this program, say "please": nah
If you would like to stop this program, say "please": nuh - uh
If you would like to stop this program, say "please": ok fine
If you would like to stop this program, say "please": please
Program complete

Submission Instructions:

Programs must follow the output format provided. This includes each blank line, colons (:), and other symbols.

Programs must be working correctly.

Programs must be written in Python.

Programs must be submitted with the correct .py format.

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- Lab5A.py
- Lab5B.py
- Lab5C.py

„X: X í 1 \ ù ü \ : j X è ô ù è : î ô ù ± + ô \ ý ù 1 j \ e ù æ ô ù j U + : í ô î ù e : ù @ X í ô \ è : U ô ù æ