

Lab 6 – Thursday June 21, 2018

This lab covers:

- if statements
- functions
- input
- exception handling

Question 1

The purpose of this question is to write a python program (script) that draws a series of triangles.

Write a function that begins with the header:

```
def getPosInt(prompt):
```

This function returns a positive integer if the user enters a positive. The function repeatedly asks for a positive integer until the user enters either a positive.

Hint: Strip the leading and trailing whitespace from the input from the user.

If *value* is the value returned by *input* the function must perform the following tests:

- if *value* is not an integer display value of *value* and the message 'is not an integer!'.
- if *value* is an integer but is less than zero display value of *value* and the message 'is not a positive integer!'.
- if *eval(value, {}, {})* causes an exception display the message 'Invalid input!'.
- if *value* is an empty string (that is the user did not type anything in and pressed return/enter) display the message 'Missing input!'

Note: You should be able to modify an example given in class to do this.

Write a function that begins with the header:

```
def drawTriangle(size):
```

The function is given the size of a triangle to draw. The size must be a positive integer. For example if size is 3 the output should be

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

and if size is 5 the output should be

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



Write a function that begins with the header:

```
def main():
```

This function repeatedly calls **getPosInt** in a loop. If the value returned by **getPosInt** is 0 exit from the loop, otherwise call **drawTriangle** with the value returned by **getPosInt**.

The main program (not to be confused with the function **main**) should contain any import statements needed, the definitions of the functions and the statement *main()*.

Sample output from the program is given below:

```
Enter the size of the triangle (0 to end): 4
```

```
Draw a triangle whose size is 4.
```

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

```
Enter the size of the triangle (0 to end):
Missing input!
```

```
Enter the size of the triangle (0 to end): 1.5
1.5 is not an integer!
```

```
Enter the size of the triangle (0 to end): -1
-1 is not a positive integer!
```

```
Enter the size of the triangle (0 to end): True
True is not an integer!
```

```
Enter the size of the triangle (0 to end): 'hi'
hi is not an integer!
```

```
Enter the size of the triangle (0 to end): junk
Invalid input!
```

```
Enter the size of the triangle (0 to end): 3
```

```
Draw a triangle whose size is 3.
```

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

```
Enter the size of the triangle (0 to end): 0
```

```
Programmed by Stew Dent.
```

```
Date: Thu Jun 7 10:20:21 2018
```



End of processing.