Computer Science 1	**Lab 07B** **Multi-Day Major Python Assignment**
Selection with Graphics	**70, 80, 90, 100 & 110 Point Versions**

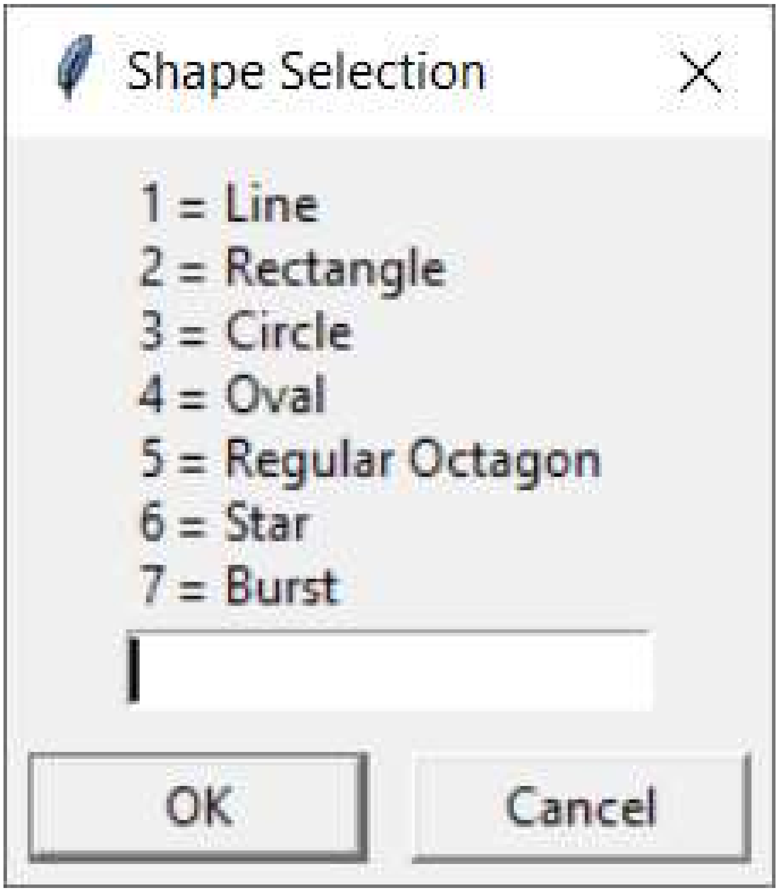
Assignment Purpose:

The purpose of this program is to demonstrate knowledge of Multi-Way Selection and how it can be integrated with Graphics and GUI Keyboard Input.

Write a program that will use graphics-based input that allows the user to choose different graphics shapes and colors and then displays the selected image. The program essentially starts with this provided **numinput** command:

```
14 shapeNum = numinput("Shape Selection", "1 = Line \n2 = Rectangle \n3 = Circle \n4 = Oval \n5 = Regular Octagon \n6 = Star \n7 = Burst")
```

which creates this input window:



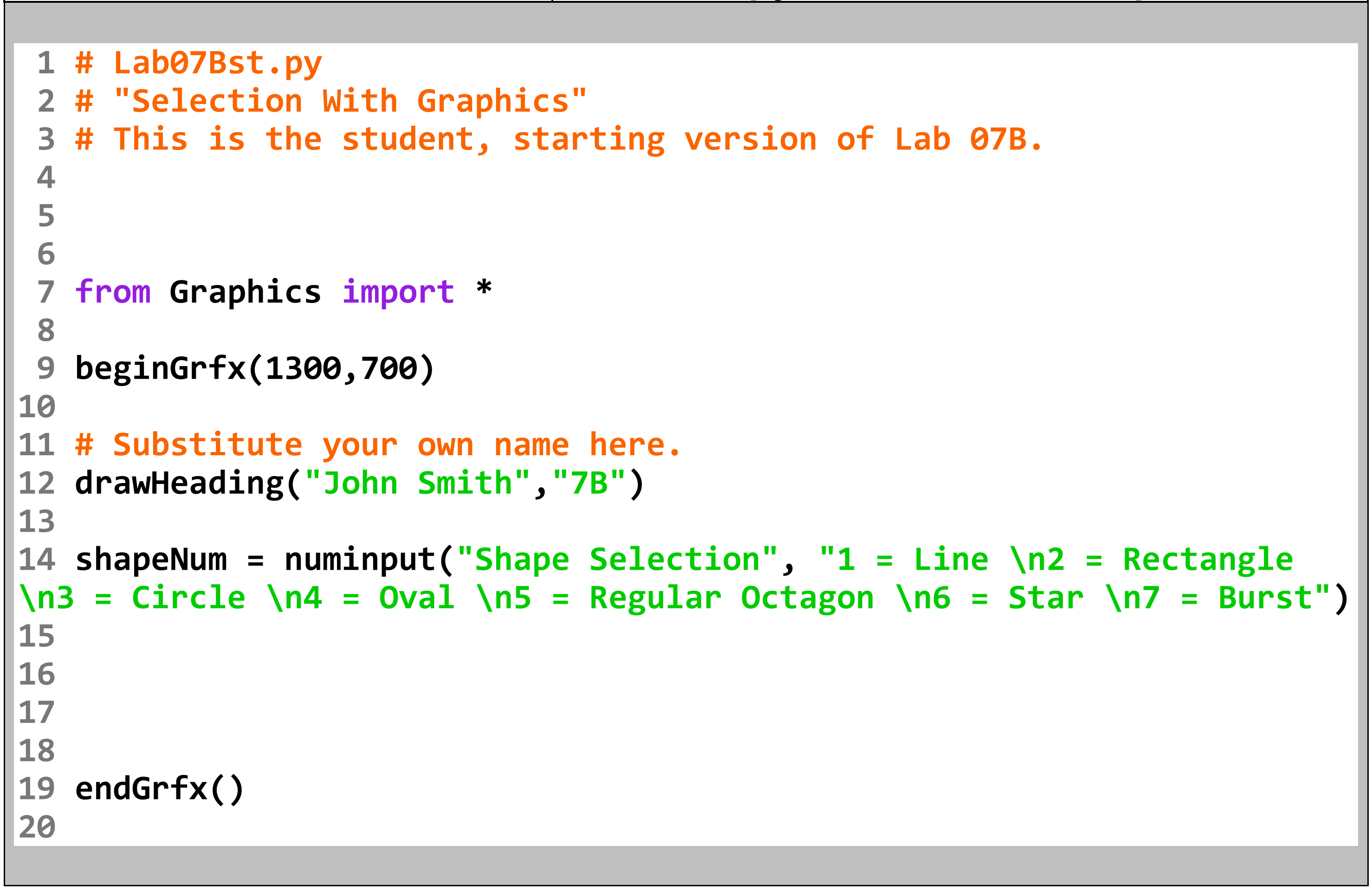
NOTE: It is the **\n** "new line" *Escape Sequences* that allow the GUI input window to have a multi-line prompt.

It is not required that your program displays the exact same shapes that are listed in the GUI input window on the left. Feel free to edit line #14 if you wish to display different shapes. Keep in mind that while you are allowed to change the shapes, you still are required to display 7 completely different shapes.

Also, your shapes can involve just about any of the draw/fill commands in the **Graphics** library – even ones that we have not learned yet in class – however, do not choose **drawPixel** or **drawPoint**. A dot is simply not enough.

HINT: If you are having difficulty getting started, you should refer to program example **Selection13.py**.

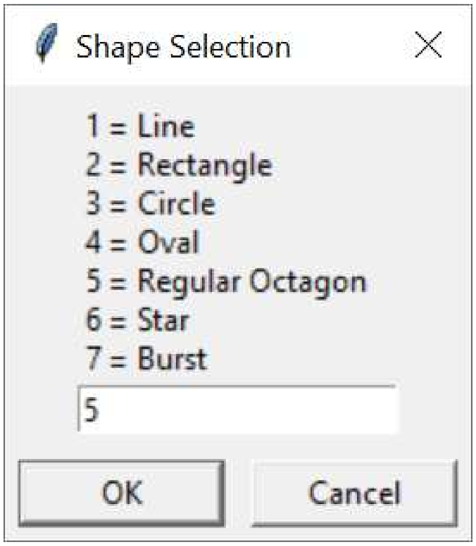
Lab 07B Student Version	Do not copy this file, which is provided.



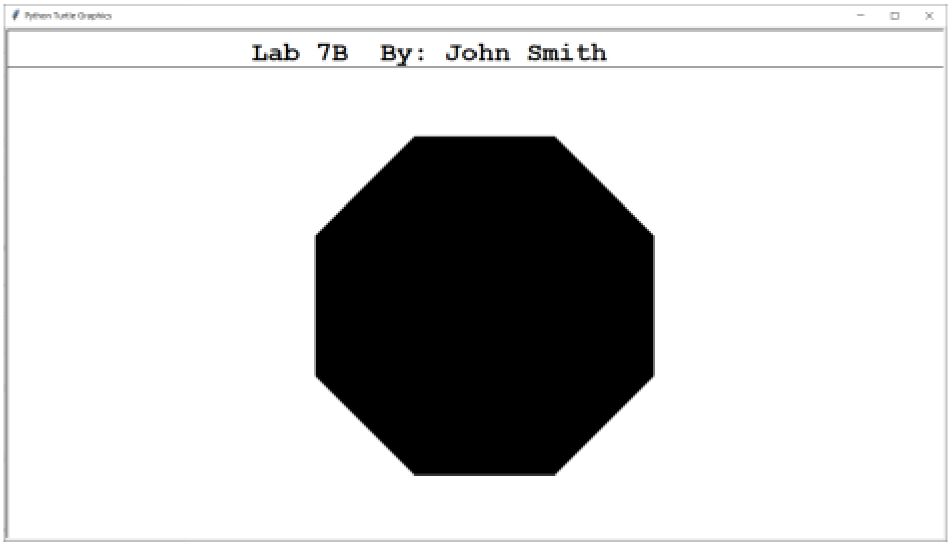
```python
# Lab07Bst.py
# "Selection With Graphics"
# This is the student, starting version of Lab 07B.



from Graphics import *

beginGrfx(1300,700)

# Substitute your own name here.
drawHeading("John Smith","7B")

shapeNum = numinput("Shape Selection", "1 = Line \n2 = Rectangle \n3 = Circle \n4 = Oval \n5 = Regular Octagon \n6 = Star \n7 = Burst")




endGrfx()

```

70 Point Version Specifics and Sample Output

The 70-point version is strictly concerned with the ability to display any of the shapes listed in the “Shape Selection” menu. Remember, you need at least 7 different shapes, but they do not need to be the exact same shapes as mine. On the next page, you will see one issue with this version.



```
Shape Selection

1 = Line
2 = Rectangle
3 = Circle
4 = Oval
5 = Regular Octagon
6 = Star
7 = Burst
5
```



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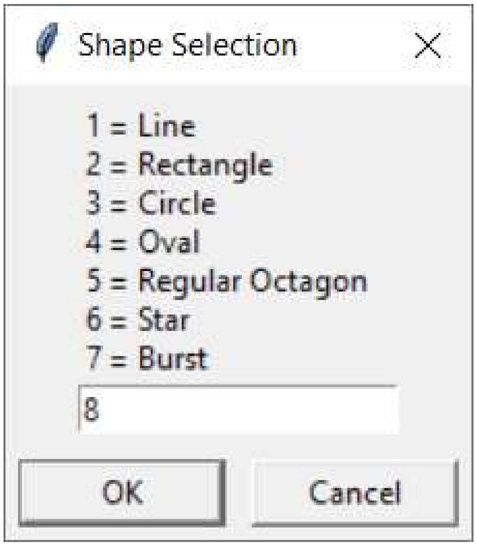
70 Point Version Specifics and Sample Output Continued

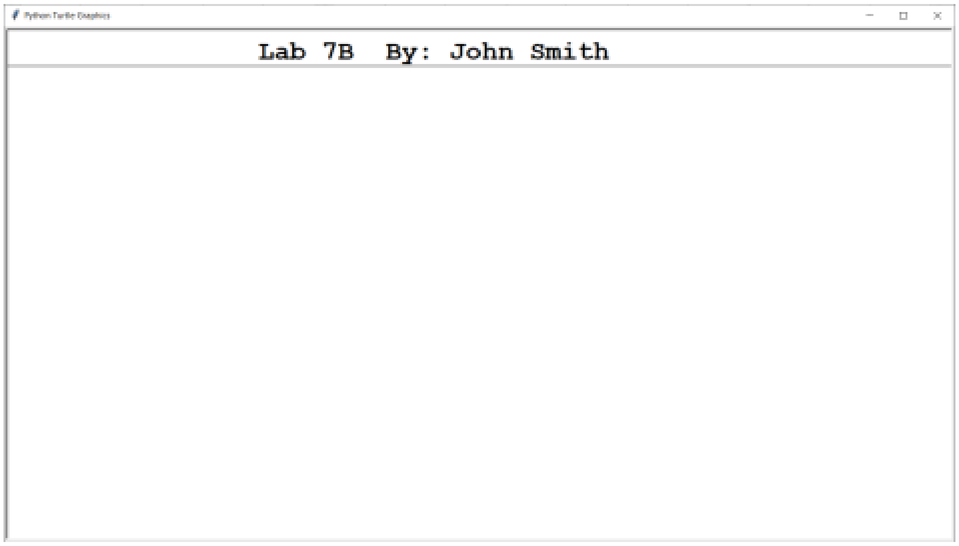
Note, if the user enters a value that is outside of the proper range, nothing is displayed.
This is fine for the 70-point version.



Shape Selection

1 = Line
2 = Rectangle
3 = Circle
4 = Oval
5 = Regular Octagon
6 = Star
7 = Burst

8



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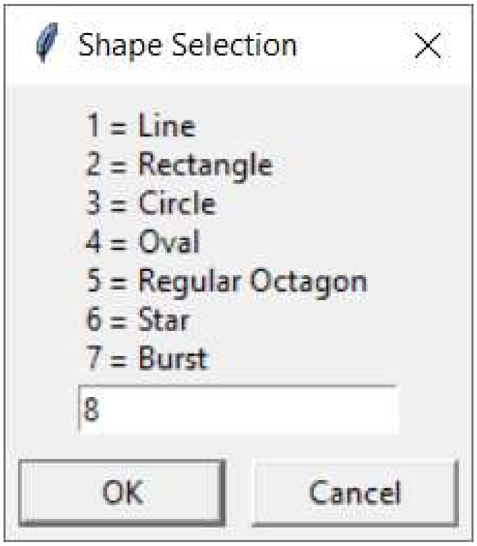
80 Point Version Specifics and Sample Output

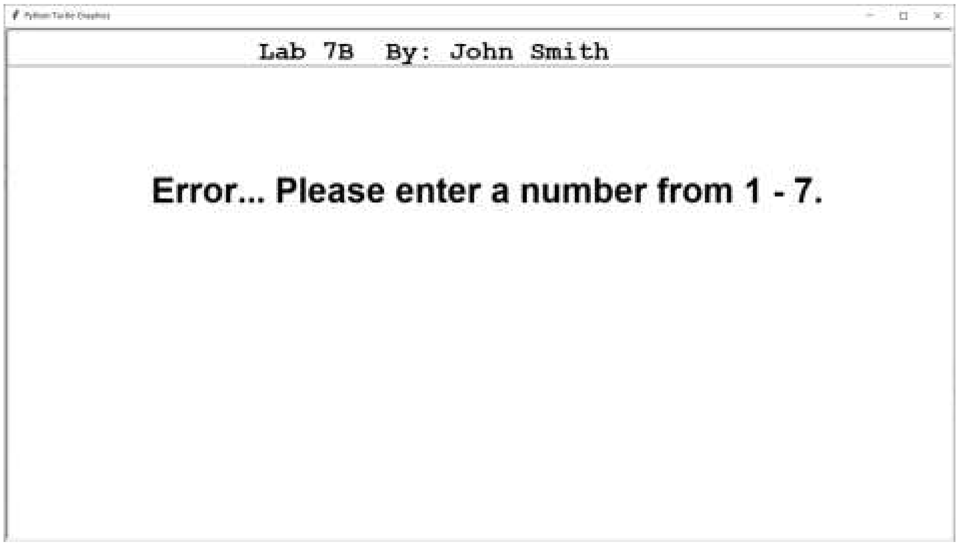
The 80-point version displays the same shapes as the 70-point version; however, if the user enters a value that is outside of the proper range, an error message, like the one below, needs to be displayed.



Shape Selection

1 = Line
2 = Rectangle
3 = Circle
4 = Oval
5 = Regular Octagon
6 = Star
7 = Burst

8



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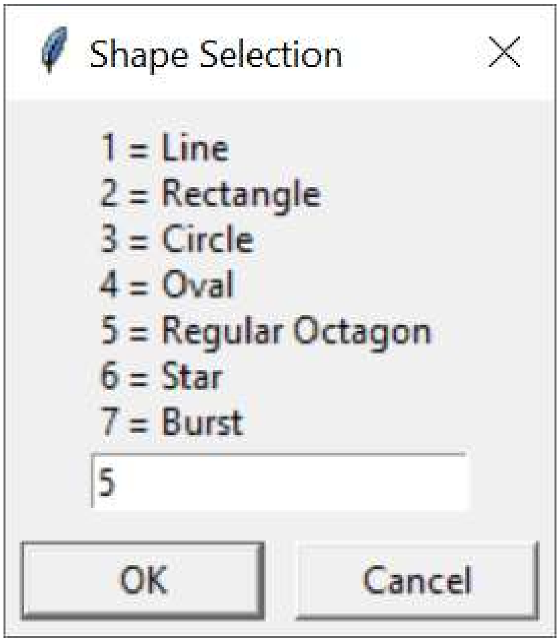
Error... Please enter a number from 1 - 7.

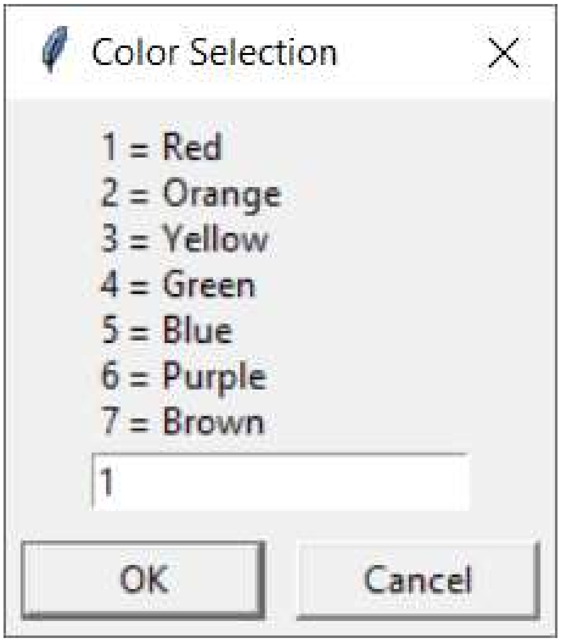
90 Point Version Specifics and Sample Output

The 90-point version requires everything from the 80-point version and adds a second input window to select among a minimum of 7 different colors. You do not need to use the exact same colors that I have in my example below. You can use any 7 colors.



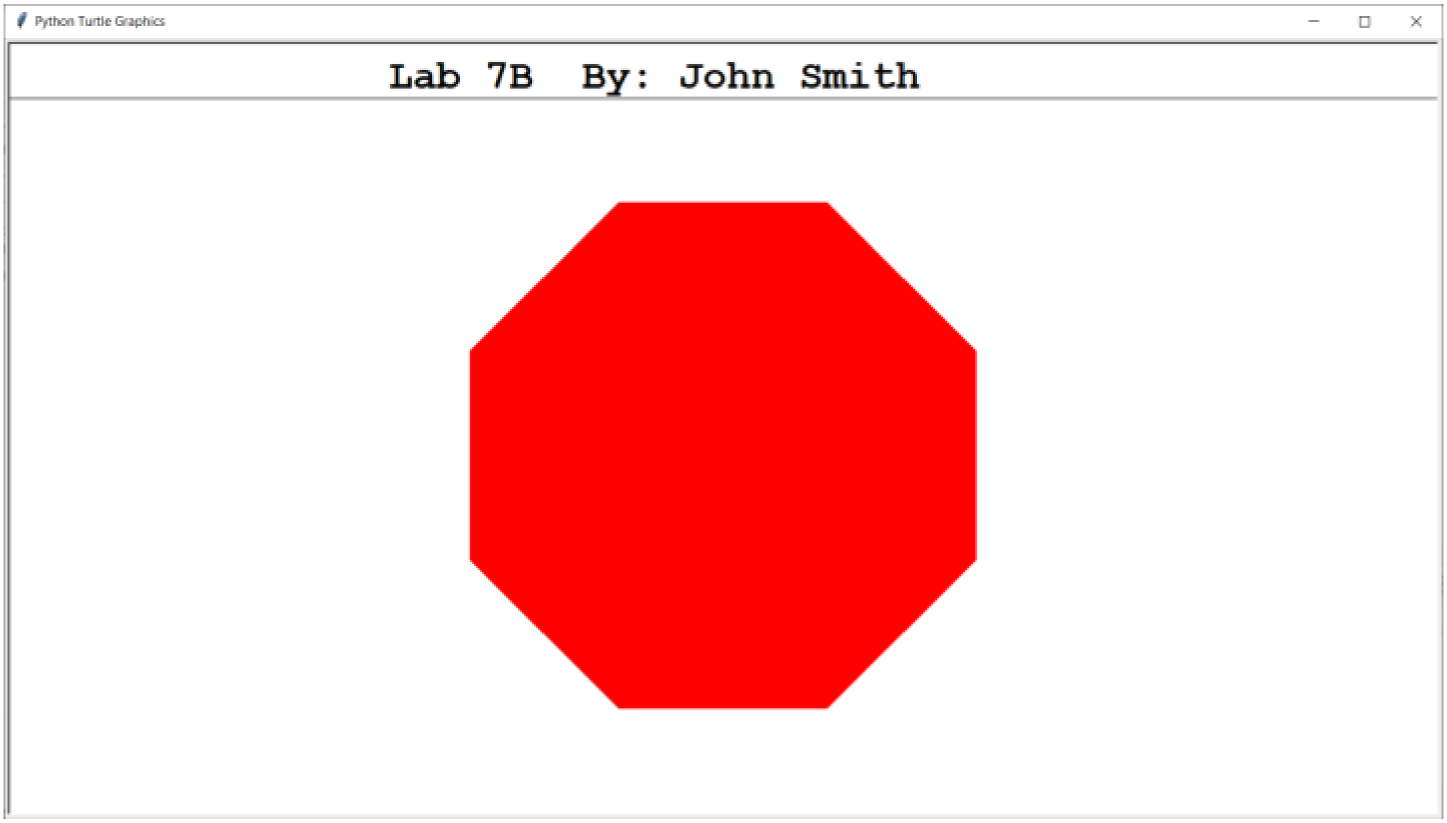
```
1 = Line
2 = Rectangle
3 = Circle
4 = Oval
5 = Regular Octagon
6 = Star
7 = Burst
```

5



```
1 = Red
2 = Orange
3 = Yellow
4 = Green
5 = Blue
6 = Purple
7 = Brown
```

1



```
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```
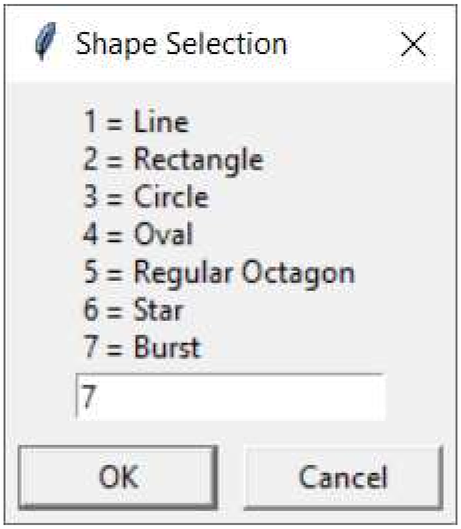

NOTE: It does not matter which menu is displayed first; however, you need to make sure you set the color BEFORE you draw the shape. Setting the color afterward is too late.

100 Point Version Specifics and Sample Output

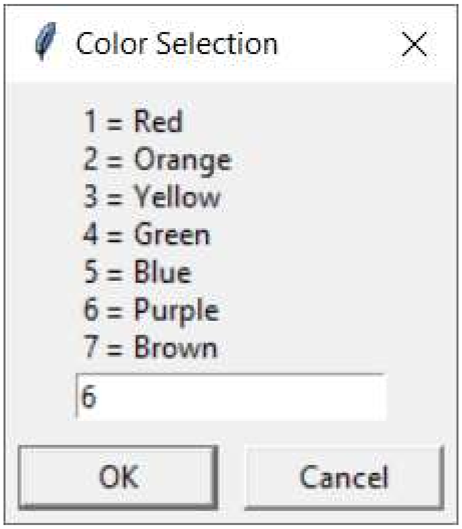
The 100-point version requires everything from the 90-point version and adds a third input window to enter the thickness of the lines. To properly test this effect, you should select a shape that is merely “drawn” and not “filled”.



Shape Selection

1 = Line
2 = Rectangle
3 = Circle
4 = Oval
5 = Regular Octagon
6 = Star
7 = Burst

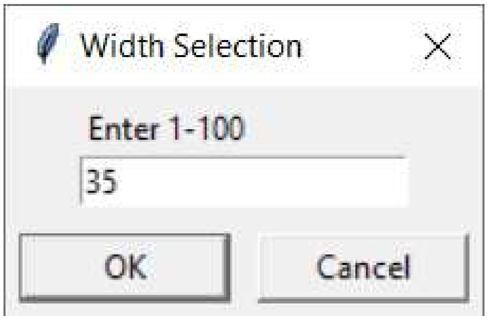
7



Color Selection

1 = Red
2 = Orange
3 = Yellow
4 = Green
5 = Blue
6 = Purple
7 = Brown

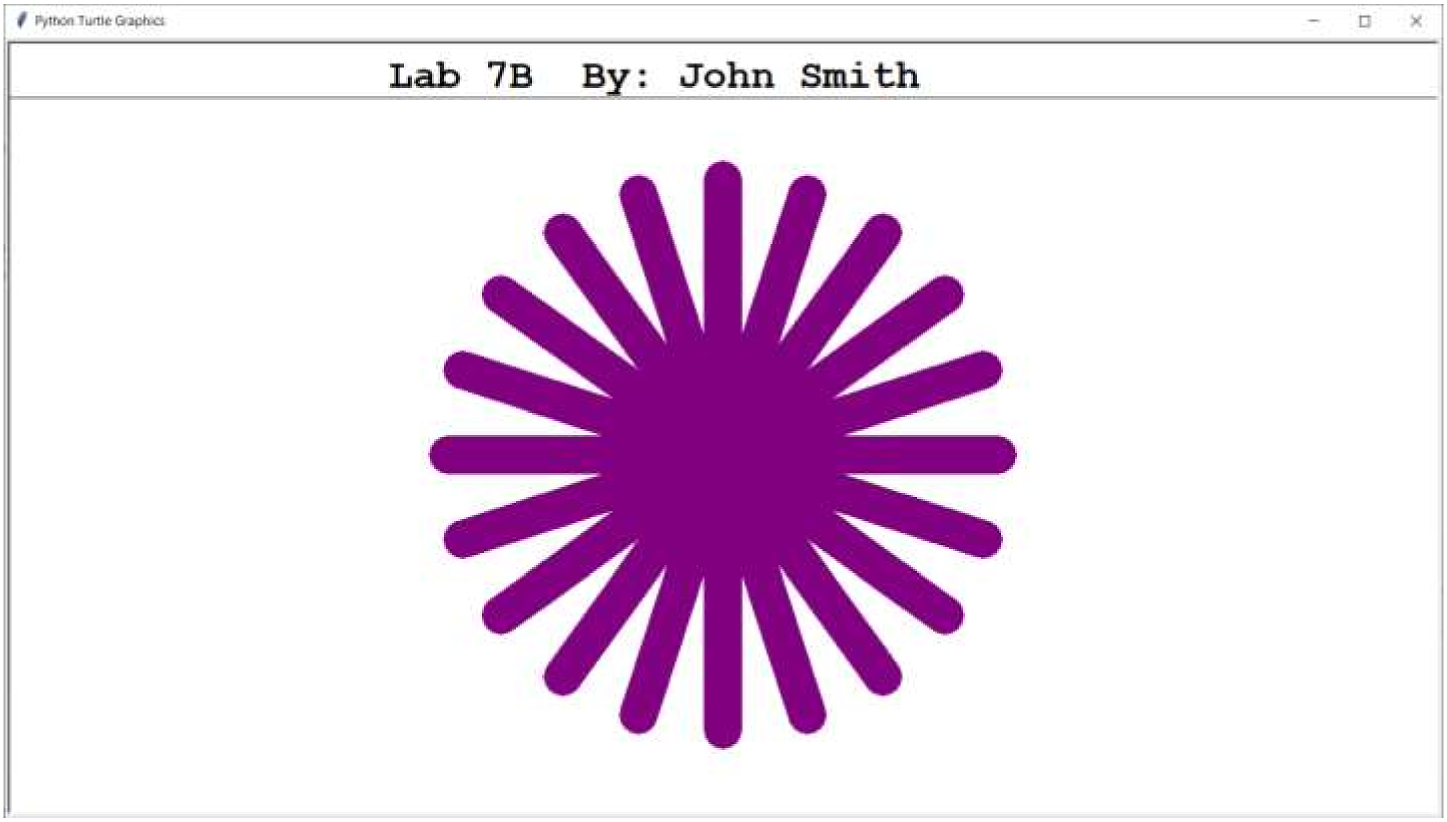
6



Width Selection

Enter 1-100

35



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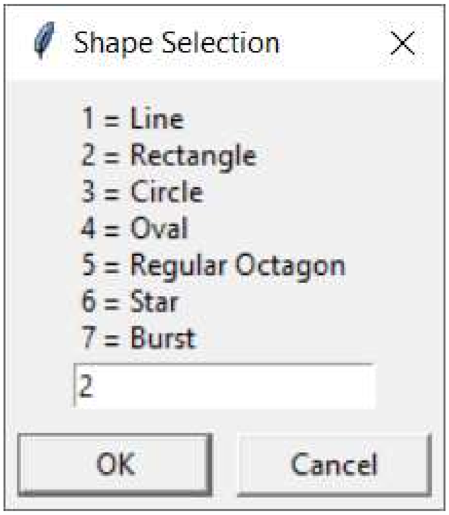
NOTE: As with the 90-point version, it does not matter which menu is displayed first; however, you need to make sure you set BOTH the width AND the color BEFORE you draw the shape. Setting the width and/or the color afterward is too late.

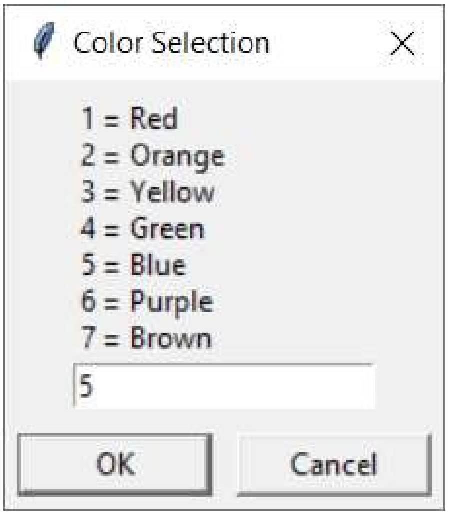
110 Point Version Specifics and Sample Output #1

The 110-point version requires everything from the 100-point version and adds a fourth input window to allow the user the ability to decide if they want their enclosed shapes – like rectangles, circles, ovals, polygons and stars – to be filled or not. The user will enter a CAPITAL '**Y**' or '**N**' for this input. For example, suppose the selected shape is a "Rectangle". If the user entered '**Y**' on this menu, the **fillRectangle** command would be executed; otherwise the **drawRectangle** command is executed.


Shape Selection

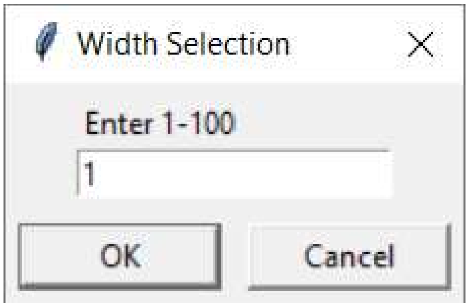
1 = Line
2 = Rectangle
3 = Circle
4 = Oval
5 = Regular Octagon
6 = Star
7 = Burst

2


Color Selection

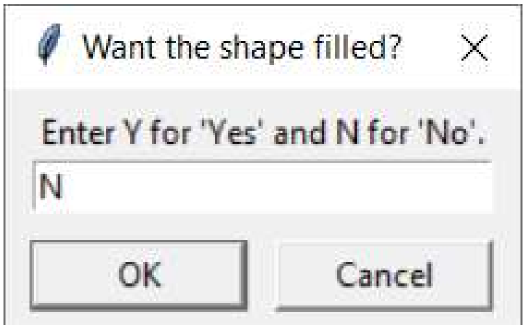
1 = Red
2 = Orange
3 = Yellow
4 = Green
5 = Blue
6 = Purple
7 = Brown

5


Width Selection

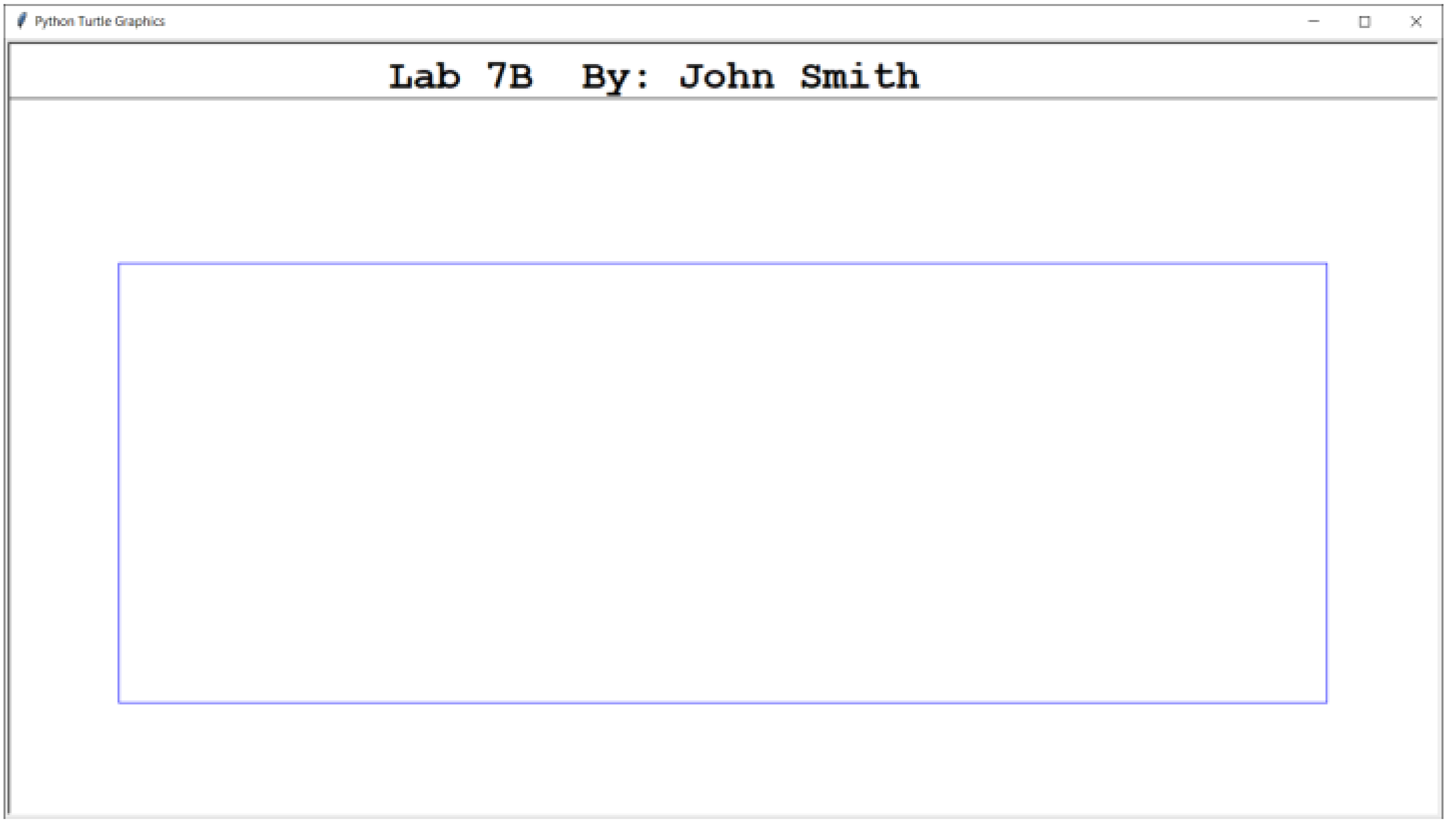
Enter 1-100

1


Want the shape filled?

Enter Y for 'Yes' and N for 'No'.

N



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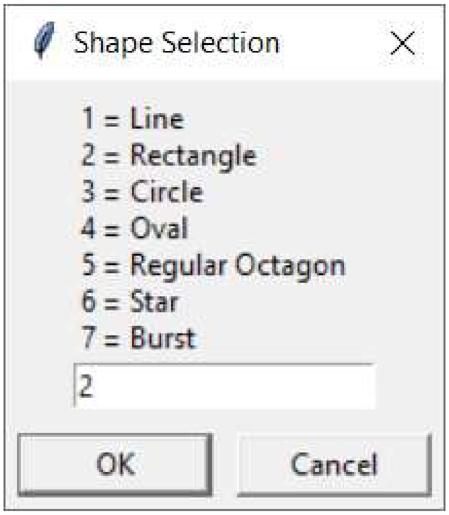
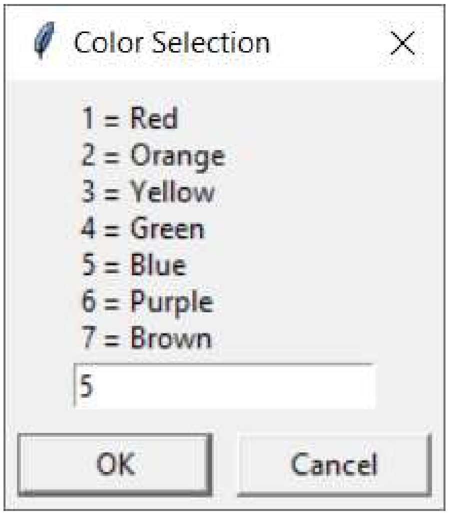
110 Point Version Sample Output #2



Shape Selection

1 = Line
2 = Rectangle
3 = Circle
4 = Oval
5 = Regular Octagon
6 = Star
7 = Burst

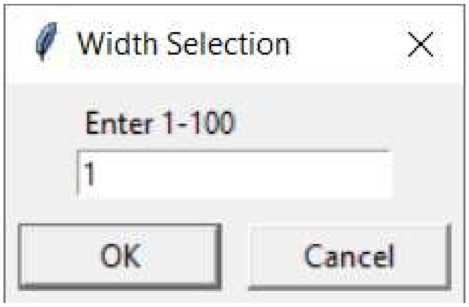
2



Color Selection

1 = Red
2 = Orange
3 = Yellow
4 = Green
5 = Blue
6 = Purple
7 = Brown

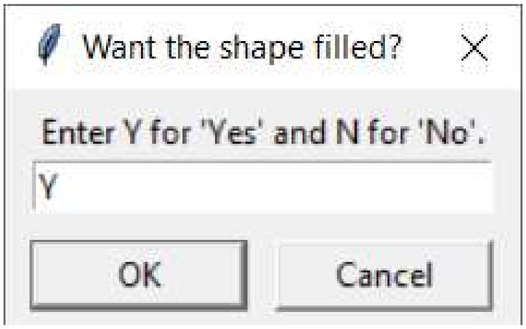
5



Width Selection

Enter 1-100

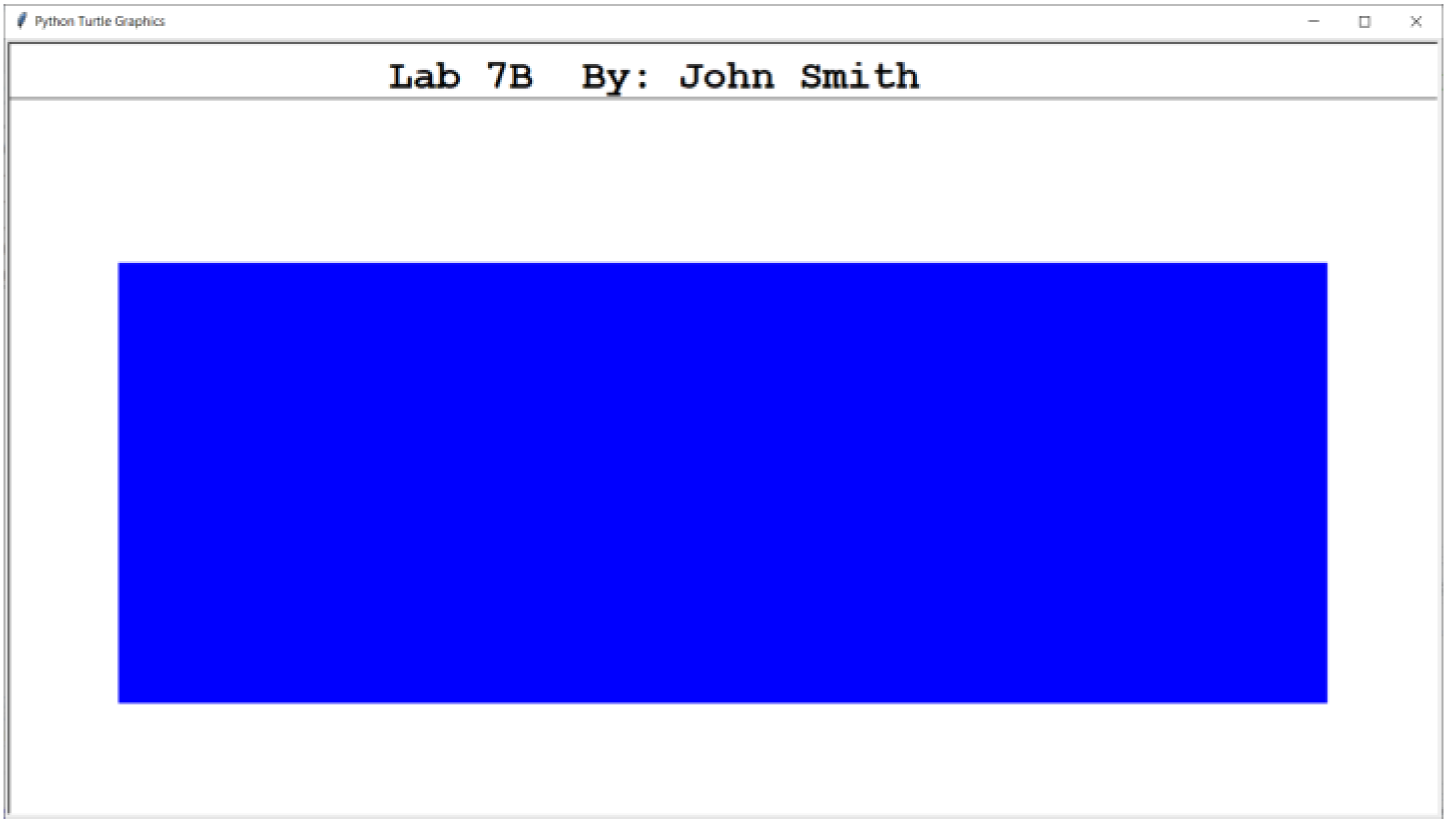
1



Want the shape filled?

Enter Y for 'Yes' and N for 'No'.

Y



Python Turtle Graphics

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