Pre-lab6

We encourage you to work together on the Pre Lab. The Pre Lab is not graded but will help you prepare for your lab session. In the Pre Lab, you may find questions to answer. We do not require you to provide us the answers, but we do recommend you to try to answer these questions. If you have any questions on the material in the pre lab, first check the book and recitation slides, if you do not find your answer please email your recitation TA or the course instructors.

* This is a tutorial on while Loops: while

**isClosed()**

This is a function defined in the graphics library. It returns the boolean False if the window is not closed.

**Example**

```python
from graphics import *

win = GraphWin("Window", 500, 500)
win.setBackground("blue")
t = win.isClosed()
print(type(t))
print(t)
win.close()
t = win.isClosed()
print(t)
print(type(t))
```

**Output**

```
<class 'bool'>
False
True
<class 'bool'>
```

**checkMouse() vs getMouse()**

getMouse() Pauses for the user to click a mouse in the window and returns where the mouse was clicked as a Point object.
checkMouse() Similar to getMouse, but does not pause for a user click. Returns the latest point where the mouse was clicked or None if the window as not been clicked since the previous call to checkMouse or getMouse. This is particularly useful for controlling simple animation loops

**Move**

move(dx,dy) - Moves the object dx units in the $x$ direction and dy units in the $y$ direction. If the object is currently drawn, the image is adjusted to the new position.

```python
from graphics import *
import time

win = GraphWin("MyWindow", 500, 500)
win.setFillBackground("Blue")
cir = Circle(Point(250,250),20)
cir.setFill("red")
cir.draw(win)
xincr = 0
yincr = 0
for i in range(7):
    cir.move(xincr, yincr)
    xincr = xincr + 10
    yincr = yincr + 10
time.sleep(0.2)

win.getMouse()
win.close()
```

Note: Execute the above program and check the output of the above program

**Using for loops to traverse a String**

You can use the for loop and access each character in a string. Let us see an example which reverses a given string using the for loops:

```python
string = "sparta"
rev = ""
for ch in string:
    rev = ch + rev
print(rev)
```

Execute the above program and check the output.