Turtle Class

LAB # 3

By

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***“On my honor, as a Mississippi State University student, I have neither***

***given nor received unauthorized assistance on this academic work.”***

Signature:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CSE-1384-06-201430 Intermediate Computer Programming

Class Section # 6

Jesse Farek

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**Analysis and Conclusions**

The lab was to create a turtle that would walk around and draw. It was very heavy on class structures. That hardest part about this was the 2 dimensional list. Creating the 2D list took me a long time but eventually I was able to complete this by using a loop in range of the grid variable and then inside the list, create another list with the same amount my using the multiplication operator times the grid variable. I then set the class names as needed in the lab. I used a lot of if functions to change the direction and to mark the index square or not too. I then used for loops to insure I marked each square. And added to my column or rows each time a square was marked. I did the same thing for not marking the square I just left the writing part of the list out so it would remain a period. Printing the grid was also very hard. It took me a long time to figure this out but I eventually figure out I had to create a loop within another loop to print the index. I then removed the parenthesis and commas in this loop as it printed.

Analysis Questions

1. The test files were very helpful in debugging in my code because it gave me different ways it tested my code, and I found while it did work with some cases I had to tweak it to fit all the possible applications
2. I learned how important .self is and how it is used. It was very crucial to the writing of my code and understanding how important it is.
3. That running tests are very important and that you have to try a variety of different tests to try to get your program to crash so you will be able to ensure it works 100%

Source Code:

#Corey Henry #Date Assigned: 03Feb15

# #

#Course CSE 1384 Sec 06 #Date Due: 10Feb15

#File name: Lab 3

#

#Program description- Create a turtle the walks around and draws.

class Turtle:

def \_\_init\_\_(self, grid\_number):

self.grid\_number = grid\_number

#create the grid using lists.

self.grid = []

for each in range(grid\_number):

self.grid += [['.']\* grid\_number]

#set the direction starting point

self.direction = 1

#set the startion location, use and y's for location for rows and collumns

self.row = 0

self.column = 0

return

def change\_pen\_position(self,command):

if command == 1:

self.pen\_position = 'up'

if command == 2:

self.pen\_position = 'down'

self.grid[self.row][self.column] = '\*'

def turn\_right(self):

self.direction += 1

if self.direction == 4:

self.direction = 0

def turn\_left(self):

self.direction -= 1

if self.direction == -1:

self.direction = 3

def move\_forward(self, ammount):

if self.pen\_position is 'down':

if self.direction == 1:

for each in range(ammount):

self.grid[self.row][self.column] = '\*'

self.column += 1

if self.column >= self.grid\_number:

break

if self.direction == 2:

for each in range(ammount):

self.grid[self.row][self.column] = '\*'

self.row += 1

if self.row >= self.grid\_number:

break

if self.direction == 3:

for each in range(ammount):

self.grid[self.row][self.column] = '\*'

self.column -= 1

if self.column <= 0:

break

if self.direction == 0:

for each in range(ammount):

self.grid[self.row][self.column] = '\*'

self.row -= 1

if self.column <= 0:

break

else:

if self.direction == 1:

for each in range(ammount):

self.column += 1

if self.column >= self.grid\_number:

break

if self.direction == 2:

for each in range(ammount):

self.row += 1

if self.row >= self.grid\_number:

break

if self.direction == 3:

for each in range(ammount):

self.column -= 1

if self.column <= 0:

break

if self.direction == 0:

for each in range(ammount):

self.row -= 1

if self.row <= 0:

break

def print\_grid(self):

for row in self.grid:

for column in row:

print(column, end=' ')

print(end='\n')