Name:

EmpID:

Exercises

- Define color yellow in python in four ways:

  use color name

  use integer number in decimal system (base 10) for red/green/blue components

  use fractional number for red/green/blue components

  use hexadecimal number (base 16) for red/green/blue components.

  Answer: color yellow is a combination of red and green. Suppose t is a turtle object. Then

  ```
  t.color(255, 255, 0) #need to set turtle.colormode(255)

  t.color(1.0, 1.0, 0) #need to set turtle.colormode(1.0)

  t.color("yellow") #use color name "yellow"

  t.color("#FFFF00") #use hexadecimal numbers in a string started with #, FF in hexad
  ```

  An illustrate code of using colors is as follows.

```
1   ##turtle_color.py
2   ##name: CS 127 teaching staff
3
4   import turtle
5
6   t = turtle.Turtle()
7   t.pensize(10)
8   t.color("yellow")
9   t.forward(100)
10
11  turtle.colormode(255) #needed
12  t.color(255, 255, 0) #yellow
13  t.color(255, 0, 255) #purple
14  t.left(90)
15  t.forward(200)
16
17  turtle.colormode(1) #use float number for color
18  #t.color(1.0, 1.0, 0) #yellow
19  t.color(0, 1.0, 1.0) #cyan
20  t.left(90)
21  t.forward(300)
22
23  t.left(90)
24  t.color("#0000FF") #blue
```

```
25   t.forward(400)
26
27   t. left (90)
28   t. color(100/255, 120/255, 250/255)
29   t.forward(400)
30
31   t. left (90)
32   t. color(100/255, 100/255, 100/255) #grey (also called gray) whenred, green, and blue have
           the same value. The smaller the value, the darker (close to black) for the grey
           color. The bigger the value, the lighter (close to white) for the grey color.
33
34   #color black = 0 red + 0 green + 0 blue
35   #color white = 100% red + 100% green + 100% blue
36   #100% means 255 in integer in decimal system or
37   #          FF in hexadecimal number or
38   #          1 in fraction number.
39
40   t.forward(500)
41
42   #hexidecimal number BA is B * 16 + A,
43   #where B is 11 and A is 10,
44   #so hexidecimal number BA is 11 * 16 + 10 = 176 + 10 = 186.
45   #google "hexadecimal ba equals"
46
47   turtle .done()
```

- What is output of the following code?

```
1    ##slice_string.py
2    ##name: CSci 127 teaching staff
3
4    string = "I love python!" #can we name string as str? No, str is a function to convert
           an int to a string.
5
6    print(string [2:6])  #love
7    print(string[-7:-1]) #python
8    print(string [2:6:2])  #lv
9    print(string[-7:-1:2]) #pto
10
11   print(string[-1])  #!
12   print(string [:-1])  #I love python
13
14   #get a list of words from a sentence.
15   mylist = string [:-1]. split (' ')
16   print(mylist) #['I', 'love', 'python']
17   print(len(mylist)) #3, which is number of elements in mylist
18   print(mylist [0])  #I
19   print(mylist [0:2])  #['I', 'love']
20   print(mylist[-1]) #python
21   print(mylist [0::2])  #['I', 'python']
```

```python
22
23  #get the last letter of each elements in the list
24  abbr = ""
25  #mylist is ['I', 'love', 'python']
26  for word in mylist:
27      abbr = word[-1] + abbr #pad last letter of word to left of abbr
28
29  print(abbr) #neI
30
31  abbr2 = ""
32  #mylist is ['I', 'love', 'python']
33  for word in mylist:
34      abbr2 += word[-1] #same as abbr2 = abbr2 + word[-1]
35          #, ie, pad last letter of word to right of abbr2
36
37  print(abbr2) #Ien
```