Use the Python Visualier (http://www.pythontutor.com/visualize.html#mode=edit) if you run into problems with your code.

In [2]:
```
import math
import random
```

In [6]:
```
'''
Task1a - logical and
'''

gpa = float(input('high school gpa:'))
sat = int(input('SAT score:'))

if gpa >= 3.5 and sat >= 1200 :
    print ('Congratulations, you are a candidate for the scholarship')
else:
    print('Sorry, you are not a candidate for the scholarship')
```

```
high school gpa:2.0
SAT score:850
Sorry, you are not a candidate for the scholarship
```

In [20]:
```
'''
Task1b - nested
'''

gpa = float(input('high school gpa:'))
sat = int(input('SAT score:'))

if gpa >= 3.5:
    if sat >= 1200:
        print ('Congratulations, you are a candidate for the scholarship')
    else:
        print('Sorry, you are not a candidate for the scholarship')
else:
    print('Sorry, you are not a candidate for the scholarship')
```

```
SAT score:1100
ACT score:30
high school gpa:2.5
Sorry, you are not a candidate for the scholarship
```

In [11]:
```
'''
Task2 - logical and, or
'''

gpa = float(input('high school gpa:'))
sat = int(input('SAT score:'))
act = float(input('ACT score:'))

if gpa >= 3.5 and (sat >= 1200 or act >= 28) :
    print ('Congratulations, you are a candidate for the scholarship')
else:
    print('Sorry, you are not a candidate for the scholarship')
```

```
high school gpa:3.2
SAT score:1300
ACT score:25
Sorry, you are not a candidate for the scholarship
```

In [20]:
```
'''
Task2 - nested
'''

gpa = float(input('high school gpa:'))
sat = int(input('SAT score:'))
act = float(input('ACT score:'))

if gpa >= 3.5:
    if sat >= 1200:
        print ('Congratulations, you are a candidate for the scholarship')
    elif act >= 28:
        print ('Congratulations, you are a candidate for the scholarship')
    else:
        print('Sorry, you are not a candidate for the scholarship')
else:
    print('Sorry, you are not a candidate for the scholarship')
```

```
SAT score:1100
ACT score:30
high school gpa:2.5
Sorry, you are not a candidate for the scholarship
```

In [16]:
```
'''
Task3a - logical and
'''

num = int(input('enter an integer:'))

if num>0 and  num % 2 == 0:
        print(num,'is a positive even number')
elif num > 0 and num %2 != 0:
        print(num,'is a positive odd number')
elif num < 0 and  num % 2 == 0 :
        print(num,'is a negative even number')
elif num < 0 and num %2 != 0:
        print(num,'is a negative odd number')
else:
    print('Zero')
```

```
enter an integer:0
Zero
```

In [25]:
```
'''
Task3b - nested
'''

num = int(input('enter an integer:'))

if num>0:
    if num % 2 == 0:
        print(num,'is a positive even number')
    else:
        print(num,'is a positive odd number')
elif num < 0:
    if num % 2 == 0 :
        print(num,'is a negative even number')
    else:
        print(num,'is a negative odd number')
else:
    print('Zero')
```

```
enter an integer:0
Zero
```

In [ ]:
```
'''
Task4 NOT ON LAB, maybe homework
'''

#Nested conditionals
print('I\'m going to ask you some questions to guess the animal (bird, bug, fi
sh, dog )')
hasWings = input('does it have wings(y/n)?')

if hasWings == 'y':
    hasFeathers = input('does it have feathers(y/n)?')
    if hasFeathers == 'y':
        print('It is a bird!')
    else:
        print('It is a bug')
else: #assume n if not y
    hasgills = input('does it have gills(y/n)?')
    if hasgills == 'y':
        print('It is a fish!')
    else:
        print('It is a dog')
```

In [ ]:
```

```