EXERCISE 3.18

In [56]:

```
a=3
b=4
c=5
if a<b:
    print("OK")
if c<b:
    print("OK")
else:
    print("C is not less than b")
if a+b==c:
    print("OK")
else:
    print("the sum of a and b is not equal to c")
if a**2+b**2==c**2:
    print("OK")
else:
    print("NOT OK")
```

```
OK
C is not less than b
the sum of a and b is not equal to c
OK
```

EXERCISE 3.20

In [21]:

```
lst = ['january','february','march']

for january in lst:
    print(january[0:3])
```

```
jan
feb
mar
```

EXERCISE 3.21

In [12]:

```
lst = [2, 3, 4, 5, 6, 7, 8, 9]

for num in lst:
    if num % 2 == 0:
        print(num, end = " ")
```

```
2 4 6 8
```

EXERCISE 3.22

In [14]:

```
lst = [2, 3, 4, 5, 6, 7, 8, 9]

for num in lst:
    if (num * num) % 8 == 0:
        print(num)
```

```
4
8
```

EXERCISE 3.23

In [33]:

```
# a
for i in range(2):
    print(i, end = " ")
```

```
0 1
```

In [19]:

```
# b
for i in range(1):
    print(i, end = " ")
```

```
0
```

In [26]:

```
# c
for i in range(3,7):
    print(i, end = " ")
```

```
3 4 5 6
```

In [30]:

```
# d
for i in range(1,2):
    print(i, end = " ")
```

```
1
```

In [34]:

```
# e
for i in range(0,4,3):
    print(i, end = " ")
```

```
0 3
```

In [36]:

```
# f
for i in range(5,22,4):
    print(i, end = " ")
```

```
5 9 13 17 21
```

EXERCISE 3.24

In [34]:

```
words = eval(input(" enter the list of words: "))
for word in words:
    if word!='secret':
        print(word)
```

```
 enter the list of words:  ['cia','secret','mi6','isi','secret']
cia
mi6
isi
```

EXERCISE 3.25

In [28]:

```
names = eval(input("enter list: "))
names_1 = names[0]
names_2 = names[-1]
print(names_1)
print(names_2)
```

```
enter list: ['Ellie', 'Steve', 'Sam', 'Owen', 'Gavin']
Ellie
Gavin
```

EXERCISE 3.26

In [29]:

```
numbers = eval(input("enter a list"))
num_1 = numbers[0]
num_2 = numbers[3]
print("The first list element is", num_1)
print("The last list element is", num_2)
```

```
enter a list [3, 5, 7, 9]
The first list element is 3
The last list element is 9
```

EXERCISE 3.27

In [31]:

```
n = int(input("Enter n:"))
for i in range(4):
    print(n*(i+1))
```

```
Enter n:5
5
10
15
20
```

EXERCISE 3.28

In [41]:

```
integer = eval(input("enter n: "))
for i in range(0,n):
    if i!=n:
        s = i**2
        print(s)
```

```
enter n: 4
0
1
4
9
16
25
```

EXERCISE 3.30

In [42]:

```
num_1 = eval(input("enter the first number: "))
num_2 = eval(input("enter the second number: "))
num_3 = eval(input("enter the third number: "))
num_4 = eval(input("enter the fourth number: "))

if (num_1 + num_2 + num_3)/4 == num_4:
    print("equal")
```

```
enter the first number: 4.5
enter the second number: 3
enter the third number: 4.5
enter the fourth number: 3
equal
```

EXERCISE 3.31

In [46]:

```
radius = 8
a = 0
b = 0
x = eval(input("enter the x-cordinate: "))
y = eval(input("enter the y-cordinate: "))
point = (x-a)**2+(y-b)**2
if point<radius:
    print("it is in")
else:
    print("it is not in")
```

```
enter the x-cordinate: 2.5
enter the y-cordinate: 4
it is not in
```

EXERCISE 3.32

In [50]:

```
number = input("enter n: ")
number.split()
for i in number:
    print(i)
```

```
enter n: 1234
1
2
3
4
```

EXERCISE 3.33

In [53]:

```
def reverse(s):
  str = ""
  for i in s:
    str = i + str
  return str

s = "abc"

print ("reversed_string : ",end="")
print (s)
print (reverse(s))
```

```
reversed_string : abc
cba
```

EXERCISE 3.34

In [35]:

```
def pay(hours):
    if hours<40:
        a=(hours/1.5)*500
        print("You have worked less than 40 hours")
        return a
    else :
        a=hours*500
        print("you have worked hard")
        return a

h=int(input("how many hours you have worked"))
pay(h)
```

```
how many hours you have worked2
You have worked less than 40 hours
```

Out[35]:

```
666.6666666666666
```

EXERCISE 3.35

In [36]:

```
def prob(n):
    res=2**-n
    return res
n=int(input("Enter value of n"))
prob(n)
```

```
Enter value of n6
```

Out[36]:

```
0.015625
```

EXERCISE 3.36

In [37]:

```
def rev(a):
    res=a[::-1]
    return res
a=str(input("Enter enter string"))
rev(a)
```

```
Enter enter string1,2,3
```

Out[37]:

```
'3,2,1'
```

EXERCISE 3.37

In [40]:

```
def points(x1,y1,x2,y2):
    res=(y2-y1)/(x2-x1)
    if res==0:
        print("Line is vertical")
    else:
        return res
points(1,1,0,1)
from math import sqrt
def distance(x1,y1,x2,y2):
    a=(x2-x1)*(y2-y1)
    b=sqrt(a)
    print("distance is", b)
distance(1,2,4,5)
```

```
Line is vertical
distance is 3.0
```

EXERCISE 3.41

In [1]:

```
a=input("Enter your name: ")
b=a[::-1]
print(b)
```

```
Enter your name: Yasir Ullah Khan
nahK hallU risaY
```

EXERCISE 3.44

In [3]:

```
def main():
    time = eval(input("What is the time (in seconds) elapsed between the flash and thun
der? "))
    sound = 1100*time
    ans = sound/5280
    print("The distance to a lightening strike is ", ans , "miles")
main()
```

```
What is the time (in seconds) elapsed between the flash and thunder? 5
The distance to a lightening strike is  1.0416666666666667 miles
```