In [6]:

```
#practice problem 2.1
#part(b)
Saraage=23
Markage=19
Fatimaage=31
average=(Saraage+Markage+Fatimaage)/3
print(average)
```

```
24.333333333333332
```

In [10]:

```
#2.1(a)
s = "goodbye"
'g'in s
```

Out[10]:

```
True
```

In [11]:

```
#how many times 73 goes into 403
403//7
```

Out[11]:

```
57
```

In [7]:

```
#paractice problem 2.2
#part(a)
a=2
b=2
c=a+b

if c<4:
    print(True)
else:
    print(False)
```

```
False
```

In [9]:

```
#part (c)2.2
a=3**2
b=4**2
if a+b==25:
    print(True)
else:
    print(False)
```

```
True
```

In [12]:

```
#2.1(c)
#the reminder when 403 is devided by 73
403%7
```

Out[12]:

```
4
```

In [14]:

```
#2.1(e)
#2 to thw power 10
2**10
```

Out[14]:

```
1024
```

In [15]:

```
#absolute value os srahs and marks height
abs(57-54)
```

Out[15]:

```
3
```

In [16]:

```
#the lowes price among the following
min(34.99,29.95,31.50)
```

Out[16]:

```
29.95
```

In [17]:

```
 # 2.2
#part b
7//3 ==1+1
```

Out[17]:

```
True
```

In [18]:

```
#part d
2+4+6>12
```

Out[18]:

```
False
```

In [19]:

```
#part e
1387%19==0
```

Out[19]:

```
True
```

In [20]:

```
#part f
31%2==0
```

Out[20]:

```
False
```

In [21]:

```
#pART g
min(34.99,31.50)<30.00
```

Out[21]:

```
False
```

In [22]:

```
#practice priblem no 2.3
#part a ,part b and part c
a = 3
b = 4
c = a*a+b*b
print(c)
```

```
25
```

In [23]:

```
#practise problem no 2.4
s1 = "ant"
s2 = "bat"
s3 = "cod"
print(s1 , s2 , s3)
print(s1, s1, s1, s1, s1, s1, s1, s1, s1, s1, s1, s1)
print(s1, s2, s2, s3, s3, s3)
print(s1,s2,s1,s2,s1,s2,s1,s2,s1,s2,s1,s2,s1,s2,s1,s2)
print(s2+s2+s3, s2+s2+s3 , s2+s2+s3)
```

```
ant bat cod
ant ant ant ant ant ant ant ant ant ant ant ant
ant bat bat cod cod cod
ant bat ant bat ant bat ant bat ant bat ant bat ant bat ant bat
batbatcod batbatcod batbatcod
```

In [24]:

```
#problem 2.5
s = "0123456789"
s[1]
s[2]
s[6]
s[8]
s[9]
```

Out[24]:

```
'9'
```

In [30]:

```
#problem 2.6
words = ['bat','ball','barn','basket','badminton']
max(words)
min(words)
```

Out[30]:

```
'badminton'
```

In [31]:

```
 #problem 2.7
grades= [9, 7, 7, 10, 3, 9, 6, 6, 2]
grades.remove(2)
grades.append(4)
max(grades)
grades.sort()
```

In [32]:

```
 sum(grades) / len(grades)
```

Out[32]:

```
6.777777777777778
```

In [33]:

```
#problem 2.8
((2+3) == 4) or (a>= 5)
(((1st[1]) * (-3) < (-10)) == 0
(((1st[1]) *(-3))<(-10)) in [0,true]
2 *(3**2)
(4/2) in [1,2,3]
```

```
  File "<ipython-input-33-67c3c20450c1>", line 3
    (((1st[1]) * (-3) < (-10)) == 0
          ^
SyntaxError: invalid syntax
```

In [34]:

```
#problem 2.9
#the first value evaluates to bolean
#part b is a float value
#part c is an Integer value
#part d IS an bol value
```

In [35]:

```
 #problem number 2.10
import math
math.sqrt(a**2 + b**2)
math.sqrt(a**2 + b**2) == 5
math.pi *a**2
(x -a)**2 +(y -b)**2 < r**2
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-35-f64461770e0d> in <module>
      4 math.sqrt(a**2 + b**2) == 5
      5 math.pi *a**2
----> 6 (x -a)**2 +(y -b)**2 < r**2

NameError: name 'x' is not defined
```

In [36]:

```
#problem numbeer 2.11
-7-6-5-4-3-2-1
```

Out[36]:

```
-28
```

In [37]:

```
#2.11
average_age = 9*17+24*10+21*11+27*12
average1 = average_age/17+24+21+27
print(average1)
```

```
127.76470588235294
```

In [38]:

```
#2.11
2**-20
```

Out[38]:

```
9.5367431640625e-07
```

In [39]:

```
#2.11
4356//61
```

Out[39]:

```
71
```

In [40]:

```
#2.11
4356//61
```

Out[40]:

```
71
```

In [41]:

```
4365%61
```

Out[41]:

```
34
```

In [42]:

```
#problem 2.12
a = '+'
b = '-'
print(a+b)
print(b+a+b)
print(a+b+b)
print(a+b+b+a+b+b)
print(a+b+b+a+b+b+a+b+b+a+b+b+a+b+b)
```

```
+-
-+-
+--
+--+--
+--+--+--+--+--
```

In [43]:

```
 #problem number 2.13
s = 'abcdefghijklmnopqrstuvwxyz'
print(s[0])
print(s[2])
print(s[24])
print(s[25])
print(s[16])
```

```
a
c
y
z
q
```

In [44]:

```
#program number 2.14
s = 'goodbye'
print(s[0]=='g')
print(s[6]=='g')
print(s[0]=='g' and s[1]=='a')
print(s[-2]=='x')
print(s[3]=='d')
print(s[0]==s[1])
print(s[1]+s[2]+s[3]+s[4]=='tion')
```

```
True
False
False
False
True
False
False
```

In [45]:

```
#program number 15
a = 'anachronistically'
b = 'counterintutive'
print("number of characters : "+str(len(a)))
print("the number of characters : "+str(len(b)))
dictionary = ['misrepresentation','mis interpretation' ]
dictionary.sort()
print("\dictionary gives the word in yhis order")
print(dictionary)
word = 'floccinaucinihilipilification'
print("the number of time e repeates in is "+str(word))
word1 = 'counterrevolution'
word2 = 'resolution'
print("the number of characters are : " +str(len(word1)))
print("the number of characters arev : "+str(len(word2)))
```

```
number of characters : 17
the number of characters : 15
\dictionary gives the word in yhis order
['mis interpretation', 'misrepresentation']
the number of time e repeates in is floccinaucinihilipilification
the number of characters are : 17
the number of characters arev : 10
```

In [46]:

```
#practice problem 2.23
#part(a)
monthsL=['jan','feb','march','may']
monthsT=['jan','feb','march','may']
monthsL.insert(3,"april")
print(monthsL)
monthsT.insert(3,"april")
print(monthsT)
```

```
['jan', 'feb', 'march', 'april', 'may']
['jan', 'feb', 'march', 'april', 'may']
```

In [47]:

```
#practice problem 2.23
#part(b)
monthsL=['jan','feb','march','may']
monthsT=['jan','feb','march','may']
monthsL.append("jun")
print(monthsL)
monthsT.append("jun")
print(monthsT)
```

```
['jan', 'feb', 'march', 'may', 'jun']
['jan', 'feb', 'march', 'may', 'jun']
```

In [48]:

```
#practice problem 2.23
#part(c)
monthsL=['jan','feb','march','may']
monthsT=['jan','feb','march','may']
monthsT.pop()
print(monthsT)
monthsL.pop()
print(monthsL)
```

```
['jan', 'feb', 'march']
['jan', 'feb', 'march']
```

In [49]:

```
#practice problem 2.23
#part(d)
monthsL=['jan','feb','march','may']
monthsT=['jan','feb','march','may']
del (monthsL[1])
print(monthsL)
del (monthsT[1])
print(monthsT)
```

```
['jan', 'march', 'may']
['jan', 'march', 'may']
```

In [50]:

```
#practice problem 2.23
#part(e)
monthsL=['jan','feb','march','may']
monthsT=['jan','feb','march','may']
monthsL.reverse()
print(monthsL)
monthsT.reverse()
print(monthsT)
```

```
['may', 'march', 'feb', 'jan']
['may', 'march', 'feb', 'jan']
```

In [51]:

```
#practice problem 2.23
#part(f)
monthsL=['jan','feb','march','may']
monthsT=['jan','feb','march','may']
monthsL.sort()
print(monthsL)
monthsT.sort()
print(monthsT)
```

```
['feb', 'jan', 'march', 'may']
['feb', 'jan', 'march', 'may']
```

In [52]:

```
#practice problem 2.19
#part(a)
answers= ['Y', 'N', 'N', 'Y', 'N', 'Y', 'Y', 'Y', 'N', 'N', 'N']
numYes=()
```

In [53]:

```
answers= ['Y','N','N','Y','N','Y','Y','Y','N','N','N']
numNo=(answers.count('N'))
print(numNo)
```

```
6
```

In [54]:

```
answers= ['Y','N','N','Y','N','Y','Y','Y','N','N','N']
numYes=(answers.count('Y'))
print(numYes)
```

```
5
```

In [55]:

```
answers= ['Y','N','N','Y','N','Y','Y','Y','N','N','N']
answers.sort()
print(answers)
f=answers.index('Y')
print(f)
```

```
['N', 'N', 'N', 'N', 'N', 'N', 'Y', 'Y', 'Y', 'Y', 'Y']
6
```

In [ ]:

In [ ]: