ASSIGNMENT-1

In [7]:
```
#SWAPPING TWO VARIABLES
x=3
y=5
print("BEFORE SWAPPING VALUES ARE:\n x= ",x)
print("y= ",y)
x=x+y
y=x-y
x=x-y
print("AFTER SWAAPPING VALUES ARE:\n x= ",x)
print("y= ",y)
```
```
BEFORE SWAPPING VALUES ARE:
 x=  3
y=  5
AFTER SWAAPPING VALUES ARE:
 x=  5
y=  3
```

In [11]:
```
#WAP TO CHECK A NUMBER IS EVEN OR ODD
n=int(input("enter a number: "))
if n%2==0:
    print("Even no. %d"%n)
else:
    print("odd no. %d"%n)
```
```
enter a number: 10
Even no. 10
```

In [17]:
```
#SQUARE ROOT OF A NUMBER
n=float(input("Enter the number: "))
num_sqrt=n**0.5
print("The square root of %0.2f is %0.4f"%(n,num_sqrt))
```
```
Enter the number: 8
The square root of 8.00 is 2.8284
```

In [85]:
```
#Write a program to print all the natural numbers from 1 to n (user input). Then print the same in reverse order
n=int(input("Enter the number: "))
for i in range(1,n+1):
    print(i,end=",")
print("\nNow in reverse order: ")
for i in range(n,0,-1):
    print(i,end=",")
```
```
Enter the number: 10
1,2,3,4,5,6,7,8,9,10,
Now in reverse order:
10,9,8,7,6,5,4,3,2,1,
```

In [24]:
```
# Write a program which prints volume of a sphere, given the radius. (use pi = 3.14).
r=float(input("Enter the radius: "))
b= (4/3)*3.14*r*r
print("The volume of sphere is: ",b)
```
```
Enter the radius: 2
The volume of sphere is:  16.746666666666666
```

In [35]:
```
# Print all odd numbers and even numbers between 1 to 100.
print("Even numbers are: ")
for i in range(1,101):
    if i%2==0:
        print(i,end=",")
print("\n\nOdd numbers are: ")
for i in range(1,101):
    if i%2!=0:
        print(i,end=",")
```
```
Even numbers are:
2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,64,66,68,70,72,74,76,78,80,82,84,
86,88,90,92,94,96,98,100,

Odd numbers are:
1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43,45,47,49,51,53,55,57,59,61,63,65,67,69,71,73,75,77,79,81,83,8
5,87,89,91,93,95,97,99,
```

In [43]:
```
# Write a program to compute roots of a quadratic equation when coefficients a, b and c are known (entered by the user).
import math
print("Enter values for the quardatic equation")
a=float(input("Enter value for a: "))
b=float(input("Enter value for b: "))
c=float(input("Enter value for c: "))
d=math.sqrt((b*b)-(4*a*c))
x=((-b)+d)/(2*a)
y=((-b)-d)/(2*a)
print("The square roots of the quadratic equation are: %0.3f %0.3f"%(x,y))
```
```
Enter values for the quardatic equation
Enter value for a: 2
Enter value for b: 4
Enter value for c: 1
The square roots of the quadratic equation are: -0.293 -1.707
```

In [6]:
```
#Count the number of digits in a number. Example: 5342 has 4 digits.
count=0
n=int(input("Enter the number/digits: "))
while(n>0):
    if n==0:
        count+=1
    count+=1
    n=n//10
print("The number of digits are: ",count)
```
```
Enter the number/digits: 5342
The number of digits are:  4
```

In [8]:
```
#Write a program to check if a number is prime or not. Example: 7 ==> True, 6 ==> False
n=int(input("Enter the number: "))
flag=0
for i in range(2,n):
        if(n%i==0):
            print("FALSE")
            flag=1
            break
if(flag!=1):
    print("TRUE")
```
```
Enter the number: 6
FALSE
```

In [33]:
```
# Write a program that asks the user for a number n and prints the sum of the numbers 1 to n
# such that only multiples of three or five are considered in the sum,
# e.g. 3, 5, 6, 9, 10, 12, 15 for n=17.
n=int(input("Enter the number: "))
sum=0
for i in range(1,n+1):
    if(i%3==0) or (i%5==0):
        print(i,end=",")
        sum=sum+i
print("\nThe sum is: ",sum)
```
```
Enter the number: 17
3,5,6,9,10,12,15,
The sum is:  60
```

In [41]:
```
# Write a program that asks the user for a number n and gives them the possibility
# to choose between computing the sum and computing the product of 1,…,n.
n=int(input("Enter the number: "))
b=int(input("Enter your choice:\n1.FOR SUM\n2.FOR PRODUCT\n"))
sum=0
product=1
if(b==1):
    for i in range(1,n+1):
        sum=sum+i
    print("The sum is: ",sum)
elif(b==2):
    for i in range(1,n+1):
        product=product*i
    print("The product is: ",product)
else:
    print("WRONG CHOICE ENTERED")
```
```
Enter the number: 5
Enter your choice:
1.FOR SUM
2.FOR PRODUCT
1
The sum is:  15
```

In [53]:
```
# Find the sum of all the multiples of 3 or 5 below 1000.
sum=0
print("The sum of all the multiples of 3 or 5 below 1000:")
for i in range(1,1000):
    if(i%3==0) or(i%5==0):
        sum=sum+i
print(sum)
```
```
The sum of all the multiples of 3 or 5 below 1000:
233168
```

In [58]:
```
# Write a program which will find all such numbers which are divisible by 7
# but are not a multiple of 5, between 2000 and 3200 (both included).
print("All such numbers which are divisible by 7 but are not a multiple of 5, between 2000 and 3200: ")
for i in range(2000,3201):
    if (i%7==0) and (i%5!=0):
        print(i,end=",")
```
```
All such numbers which are divisible by 7 but are not a multiple of 5, between 2000 and 3200:
2002,2009,2016,2023,2037,2044,2051,2058,2072,2079,2086,2093,2107,2114,2121,2128,2142,2149,2156,2163,2177,2184,2191,2198,22
12,2219,2226,2233,2247,2254,2261,2268,2282,2289,2296,2303,2317,2324,2331,2338,2352,2359,2366,2373,2387,2394,2401,2408,242
2,2429,2436,2443,2457,2464,2471,2478,2492,2499,2506,2513,2527,2534,2541,2548,2562,2569,2576,2583,2597,2604,2611,2618,2632,
2639,2646,2653,2667,2674,2681,2688,2702,2709,2716,2723,2737,2744,2751,2758,2772,2779,2786,2793,2807,2814,2821,2828,2842,28
49,2856,2863,2877,2884,2891,2898,2912,2919,2926,2933,2947,2954,2961,2968,2982,2989,2996,3003,3017,3024,3031,3038,3052,305
9,3066,3073,3087,3094,3101,3108,3122,3129,3136,3143,3157,3164,3171,3178,3192,3199,
```

In [93]:
```
# Find the difference between the sum of the squares of the first one hundred natural numbers and the square of the sum.
sum=0
sum_square=0
for i in range(1,101):
    sum=sum+(i*i)
sum_square=sum*sum
d=sum_square-sum
print("The difference is:",d)
```
```
The difference is: 114480384150
```

In [104]:
```
#question-15
count=0
total=0
a="start"
while(a!="stop"):
    n=int(input("Enter a number: "))
    count+=1
    total+=n
    ch=input("Type stop/other than digit when you wants to end this: ")
    if((ch >= 'a' and ch <= 'z') or (ch >= 'A' and ch <= 'Z')):
        break
    elif(ch >= '0' and ch <= '9'):
        pass
    else:
        break
print("Total= ",total,"Count= ",count,"Average= ",(total/count))
```
```
Enter a number: 1
Type stop/other than digit when you wants to end this: 0
Enter a number: 2
Type stop/other than digit when you wants to end this: 80
Enter a number: 3
Type stop/other than digit when you wants to end this: heyy
Total=  6 Count=  3 Average=  2.0
```

In [19]:
```
# Write a program that prints all prime numbers till n. (n is the user input)
first_value=1
n=int(input("Enter the number: "))
print("The prime numbers between",first_value,"and",n,"are: ")
for n in range(first_value,n+1):
    if n>1:
        for i in range(2,(n//2)+1):
            if (n%i==0):
                break
        else:
            print(n,end=",")
```
```
Enter the number: 30
The prime numbers between 1 and 30 are:
2,3,5,7,11,13,17,19,23,29,
```

In [21]:
```
# Write a program which can compute the factorial of a given number.
def factorial(n):
    if(n==1):
        return n
    else:
        return n*factorial(n-1)
num=int(input("Enter a number for the factorial: "))
print("The factorial of", num,"is: ",factorial(num))
```
```
Enter a number for the factorial: 5
The factorial of 5 is:  120
```

In [31]:
```
# Write a program for printing fibonacci series till n.
a=0
b=1
n=int(input("Enter the number for fibonacci series: "))
print(a,b,sep=",",end=",")
for i in range(3,n+1):
    c=a+b
    print(c,end=",")
    a=b
    b=c
```
```
Enter the number for fibonacci series: 6
0,1,1,2,3,5,
```

In [83]:
```
# Write a program to find the LCM of two numbers.
n1=int(input("Enter your first number: "))
n2=int(input("Enter your second number: "))
if(n1>n2):
    greater=n1
else:
    greater=n2
while(1):
    if(greater%n1==0) and (greater%n2==0):
        leastcm=greater
        break
    greater=greater+1
print("The LCM 0f",n1,",",n2,"is",leastcm)
```
```
Enter your first number: 54
Enter your second number: 24
The LCM 0f 54 , 24 is 216
```

In [12]:
```
# Write a program to find factors of a number.
n=int(input("Enter the number: "))
print("The factors are",end=":")
for i in range(1,n+1):
    if(n%i==0):
        print(i,end=",")
```
```
Enter the number: 10
The factors are:1,2,5,10,
```

In [15]:
```
# Write a program to print the following pattern
n=int(input(" Enter your number: "))
for i in range(1,n+1):
        print("*"*i ,end="\n")
```
```
 Enter your number: 5
*
**
***
****
*****
```

In [17]:
```
# Write a program to print the following pattern
n=int(input(" Enter your number: "))
for i in range(n,0,-1):
        print("*"*i ,end="\n")
```
```
 Enter your number: 7
*******
******
*****
****
***
**
*
```

In [44]:
```
# Write a program to print the following pattern
n=int(input(" Enter your number: "))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(i,end=" ")
    print("\n")
```
```
 Enter your number: 5
1

2 2

3 3 3

4 4 4 4

5 5 5 5 5
```

In [53]:
```
# Write a program to print the following pattern
n=int(input("enter your number: "))
for i in range(0,n):
    for j in range(0,n-i-1):
        print(end=" ")
    for j in range(0,i+1):
        print("*",end=" ")
    print()
```
```
enter your number: 4
   *
  * *
 * * *
* * * *
```

In [59]:
```
# Write a program to print the following pattern
n=int(input(" Enter your number: "))
k=0
for i in range(1,n):
    for j in range(1,i+1):
        k+=1
        print(k,end=" ")
    print("\n")
```
```
 Enter your number: 5
1

2 3

4 5 6

7 8 9 10
```

In [64]:
```
# Write a program to print the following pattern
n=int(input(" Enter your number: "))
ch=64
for i in range(1,n):
    for j in range(1,i+1):
        ch+=1
        print(chr(ch),end=" ")
    print("\n")
```
```
 Enter your number: 5
A

B C

D E F

G H I J
```

In [78]:
```
#question-22
n=int(input("Enter the number: "))
sum=0
print("The series is: ")
def repeat(n,r):
    a=n
    while(r>1):
        a=a*10
        a=a+n
        r-=1
    return a
for i in range(1,5):
    temp=repeat(n,i)
    print(temp,end="+")
    sum=sum+temp
print("\nThe sum is:",sum)
```
```
Enter the number: 9
The series is:
9+99+999+9999+
The sum is: 11106
```