ASSIGNMENT 1

In [3]:
```
#QUES 1:WAP to swap two variables.

a=int(input("enter the first number::"))
b=int(input("enter the second number::"))
a=a+b
b=a-b
a=a-b
print("after swapping::")
print(a)
print(b)
```

```
enter the first number::24
enter the second number::26
after swapping::
26
24
```

In [4]:
```
#ques 2:wap to check if a no. is odd or even
a=int(input("enter the number::"))
if(a%2==0):
    print("entered number is even")
else:
    print("entered number is odd")
```

```
enter the number::45
entered number is odd
```

In [11]:
```
#ques 3: wap to find square root of a no.
a=int(input("enter a no.:"))
import math
print("square root of a number is::")
print(math.pow(a,2))
```

```
enter a no.:6
square root of a number is::
36.0
```

In [44]:
```
#ques 4:wap to print all the natural nos. from 1 to n (user input).thn print t
he same in reverse order

for i in range(1,11):
    b=print(i,end=" ")
print("\nafter reversing:".format(b))
while(i>=1):
    print(i,end=" ")
    i=i-1
```

```
1 2 3 4 5 6 7 8 9 10
after reversing:
10 9 8 7 6 5 4 3 2 1
```

In [48]:
```
#ques 5:wap to print volume of sphere ,guven radii is 3.14
a=int(input("enter the radius::"))
print("volume of sphere is:")
import math
print((4/3)*3.14*pow(a,3))
```

```
enter the radius::2
volume of sphere is:
33.49333333333333
```

In [76]:
```
#ques 6:print all odd nos. and even nos. between 1 to 100
even_no=[]
odd_no=[]

for i in range(1,101):
    if(i%2==0):
        even_no.append(i)
    else:
        odd_no.append(i)
print("even nos.:",even_no)
print("odd nos.:",odd_no)
```

```
even nos.: [2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 3
6, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 7
4, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100]
odd nos.: [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, 7
5, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 97, 99]
```

In [79]:
```
#ques 7:wap to compute roots of a quadratic equation when coefficients a,b and
c are known(entered by user)
a=int(input("enter first value:"))
b=int(input("enter second value:"))
c=int(input("enter third value:"))
x1=(-b+((b**2-(4*a*c))**(1/2)))/2*a
print("the first root is:",x1)
x2=(-b-((b**2-(4*a*c))**(1/2)))/2*a
print("the second root is:",x2)
```

```
enter first value:2
enter second value:3
enter third value:5
the first root is: (-2.9999999999999996+5.5677643628300215j)
the second root is: (-3.0000000000000004-5.5677643628300215j)
```

In [1]:
```
#ques 8:wap to count no. of digits in a no.
count=0
a=int(input("enter the number::"))
while(a>0):
    count+=1
    a=a//10
print("number of digits are:",count)
```

```
enter the number::5342
number of digits are: 4
```

In [2]:
```
#ques 9:wap to check if a number is prime or not

flag=0
a=int(input("enter the number::"))
for i in range(2,a//2):
    if(a%i==0):
        print("not a prime no. or false")
        flag=1
        break
    else:
        if(flag!=1):
            print("prime no. or true")
```

```
enter the number::7
prime no. or true
```

In [5]:
```
#ques 10:wap that asks the user for a no. n and prints the sum of the numbers
 1 to n such that only multiples of 3 or 5 are considered in the sum
sum=0
a=int(input("enter number:"))
for i in range(0,a):
    if((i%3==0) or (i%5==0)):
        sum=sum+i
print("sum:",sum)
```

```
enter number:17
sum: 60
```

In [1]:
```
#ques 11:wap that asks user for a no.and gives them the possibility to choose
 between computing the product of 1,.....,n
sum=0
product=1
choice=3
n=int(input("enter a number:"))
print("given choices are:\n 1)sum of 1 to n numbers\n 2)product of 1 to n numb
ers\n 3)wrong choice\n ")
print("enter your choice::")
choice=int(input())
if(choice==1):
    for i in range(1,n+1):
        sum+=i
    print("sum is:",sum)
elif(choice==2):
        for i in range(1,n+1):
            product*=i
        print("product is:",product)
else:
    print("wrong choice")
```

```
enter a number:12
given choices are:
 1)sum of 1 to n numbers
 2)product of 1 to n numbers
 3)wrong choice

enter your choice::
2
product is: 479001600
```

In [2]:
```
#ques 12:find the sum of all the multiples of 3 or 5 below 1000
sum=0
for i in range(1,1000):
    if((i%3==0) or (i%5==0)):
        sum+=1
print("sum of numbers below 1000 is:",sum)
```

```
sum of numbers below 1000 is: 466
```

In [4]:
```
#ques 13:wap which will find all such numbers which are divided by 7 but not a
multiple of 5 between 2000 and 3200(both included)
print("no.s are:")
for i in range(2000,3201):
    if((i%7==0) and (i%5!=0)):
        print(i,end=", ")
```

```
no.s are:
2002, 2009, 2016, 2023, 2037, 2044, 2051, 2058, 2072, 2079, 2086, 2093, 2107,
2114, 2121, 2128, 2142, 2149, 2156, 2163, 2177, 2184, 2191, 2198, 2212, 2219,
2226, 2233, 2247, 2254, 2261, 2268, 2282, 2289, 2296, 2303, 2317, 2324, 2331,
2338, 2352, 2359, 2366, 2373, 2387, 2394, 2401, 2408, 2422, 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, 2849, 2856, 2863, 2877, 2884, 2891, 2898,
2912, 2919, 2926, 2933, 2947, 2954, 2961, 2968, 2982, 2989, 2996, 3003, 3017,
3024, 3031, 3038, 3052, 3059, 3066, 3073, 3087, 3094, 3101, 3108, 3122, 3129,
3136, 3143, 3157, 3164, 3171, 3178, 3192, 3199,
```

In [8]:
```
#ques 14:find the difference b/w the sum of the squares of the first one hundr
ed natural nos and the square of the sum
sum_of_square=0
square_of_sum=0
for i in range(1,101):
    sum_of_square+=(i*i)
for i in range(1,101):
    square_of_sum+=i
square_of_sum*=square_of_sum
print("difference is:",abs(sum_of_square-square_of_sum))
```

```
difference is: 25164150
```

In [16]:
```
#ques 15:wap w/c repeatedly reads nos. until the user enters stop .once stop i
s entered ,print out the total,count,and average of the numbers. if the user e
nters anything other thn a no. thn also stops
total=0
count=0
a="start"
while(a!="stop"):
    n=int(input("enter a number:"))
    total+=n
    count+=1
    a=(input("type 'stop' to terminate:"))
print("total:",total,"\ncount:",count,"\naverage:",total/count)
```

```
enter a number:10
type 'stop' to terminate:r
enter a number:90
type 'stop' to terminate:stop
total: 100
count: 2
average: 50.0
```

In [18]:
```
#ques 16: wap that prints all prime numbers till n

def prime(n):
    flag=1
    for i in range(2,n//2):
        if(n%i==0):
            flag=0
            break
    if(flag!=0):
        return 1
    else:
        return 0
a=int(input("enter the number:"))
for i in range(2,a+1):
    check=prime(i)
    if(check==1):
        print(i,end=",")
```

```
enter the number:40
2,3,4,5,7,11,13,17,19,23,29,31,37,
```

In [3]:
```
#ques 17:wap which can compute the factorial of a number
def fact(n):
    if(n==1):
        return n
    else:
        return(n*fact(n-1))
num=int(input("enter a number:"))
print("factorial of ",num,"is:",fact(num))
```

```
enter a number:6
factorial of  6 is: 720
```

In [4]:
```
#ques 18:wap for printing fibonacci series till n
a=0
b=1
n=int(input("enter a number:"))
print(a,b,sep=" ",end=",")
for i in range(3,n+1):
    c=a+b
    print(c,end=",")
    a=b
    b=c
```

```
enter a number:11
0 1,1,2,3,5,8,13,21,34,55,
```

In [7]:
```
#ques 19:wap to find LCM of 2 nos
a=int(input("enter the first number:"))
b=int(input("enter the second number:"))
if(a>b):
    max=a
else:
    max=b
while(1):
    if(max%a==0 and max%b==0):
        print("LCM is:",max)
        break
    max=max+1
```

```
enter the first number:25
enter the second number:50
LCM is: 50
```

In [9]:
```
#ques 20:wap to find factors of a number
a=int(input("enter a no.:"))
num=int(a)
print("factors of",num,"are:")
for i in range(2,num-1):
    if(num%i==0):
        print(i)
        i+=1
```

```
enter a no.:100
factors of 100 are:
2
4
5
10
20
25
50
```

ques 21:pattern questions

In [10]:
```
#part 1
for i in range(0,6):
    for j in range(0,1):
        print("*"*i,end=" ")
    print()
```

```
*
**
***
****
*****
```

In [21]:
```
#part 3
for i in range(1,6):
    for j in range(i):
        print(i,end=" ")
    print("\n")
```

```
1

2 2

3 3 3

4 4 4 4

5 5 5 5 5
```

In [22]:
```
#part 2
nos=7
temp=7
for i in range(7,0,-1):
    while(temp>0):
        print("*",end=" ")
        temp-=1
    nos-=1
    temp=nos
    print(" ")
```

```
* * * * * * *
* * * * * *
* * * * *
* * * *
* * *
* *
*
```

In [1]:
```
#part 4
nos=1
s=1
for i in range(5,0,-1):
    print("")
    for j in range(5,s,-1):
        print(" ",end= "")
    for k in range(0,nos):
        print(" *",end= "")
    nos+=1
    s+=1
```

```
     *
    * *
   * * *
  * * * *
 * * * * *
```

In [2]:
```
#part 5
n=0
for i in range(1,5):
    for j in range(1,i+1):
        n+=1
        print(n,end=" ")
    print("\n")
```

```
1

2 3

4 5 6

7 8 9 10
```

In [6]:
```
#part6
n=64
for i in range(1,5):
    for j in range(1,i+1):
        n+=1
        print(chr(n),end=" ")
    print("\n")
```

```
A

B C

D E F

G H I J
```

In [9]:
```
#ques 22:
def num(n,nod):
    a=n
    while(nod>1):
        a*=10
        a+=n
        nod-=1
    return a
n=int(input("enter a number:"))
sum=0
for i in range(1,5):
    temp=num(n,i)
    sum+=temp
print("sum:",sum)
```

```
enter a number:9
sum: 11106
```

In [ ]:
```

```