Add two binary string

```
a="11"
b=int(a,2)
print(b)
```

```
3
```

```
c="1"
d=int(c,2)
print(d)
```

```
1
```

```
bin(b+d)[2:]
```

```
'100'
```

Distance between given points

```
def distance(x1,x2,x3,y1,y2,y3):
    import math
    first_diff=math.sqrt(math.pow(x2-x1,2)+math.pow(y2-y1,2))
    second_diff=math.sqrt(math.pow(x3-x2,2)+math.pow(y3-y2,2))
    third_diff=math.sqrt(math.pow(x3-x1,2)+math.pow(y3-y1,2))
    return first_diff+second_diff+third_diff

distance(1,2,3,1,4,6)
```

```
10.783510444802673
```

```
def distance(x1,x2,x3,y1,y2,y3):
    import math
    first_diff=math.sqrt(math.pow(x2-x1,2)+math.pow(y2-y1,2))
    second_diff=math.sqrt(math.pow(x3-x2,2)+math.pow(y3-y2,2))
    return first_diff+second_diff

distance(1,2,3,1,4,6)
```

```
5.39834563766817
```

A to I

```
def atoi(s):
    s= s.strip()
    return int(s)

atoi("  -196")
```

```
-196
```

```
def atoi(s):
        s=s.strip()#whitespaces
        if not s:
            return 0
        sign=1
        #sign
        if s[0]=="-":
            sign=-1
            s=s[1:]
        elif s[0]=="+":
            s=s[1:]
        #conv
        result=0
        for i in s:
            if i.isdigit():
                digit=int(i)
                result=result*10+digit
            else:
                break
        mini,maxi=-2**31,2**31-1
        result=result*sign
        if result>maxi:
            return maxi
        elif result<mini:
            return mini
        return result

atoi("  -45678gft6")
```

```
-45678
```

Roman to integer

```
romanToInt("XXIV")
```

```
24
```

```
def rtoi(s): #s=XXIV
    R={
        'I':1,
        'V':5,
        'X':10,
        'L':50,
        'C':100,
        'D':500,
        'M':1000
    }
    total=0
    for i in range(len(s)): #4-->0,1,2,3
        cval=R[s[i]]#5  #i==3
```

```
        nval=R[s[i+1]] if i+1<len(s) else 0
        if cval>=nval:
            total=total+cval
        else:
            total=total-cval
    return total

rtoi("XXIV")
```

```
24
```

Randomizing list

```
import random as rd
a=[1,2,3,4,5,6]
rd.shuffle(a)
print(a)
```

```
[1, 5, 6, 4, 2, 3]
```

Find the index of first occurence of string

```
def substring(haystack,needle):
    return haystack.find(needle)
    #outputs the index number when it finds the given string

haystack= 'helloworldhowareyouhisindu'
needle='sindu'
substring(haystack,needle)
```

```
21
```

Two sum

```
def twoSum(arr, target):
        n = len(arr)
        for i in range(n - 1):
            for j in range(i + 1, n):
                if arr[i] + arr[j] == target:
                 return [i, j]


twoSum([1,2,4,6],7)
```

```
[0, 3]
```

Tax Calculator

```
def TaxC(a):
    if a<=0:
        return "no tax"
    elif a<=5000:
        return a
    elif a>5001 and a<10000:
        return (a*0.05+10)
    elif a>10001 and a<50000:
        return a- (a*0.1+100)
    elif a>50001 and a<100000:
        return a- (a*0.15+150)
    elif a>100001 and a<5000000:
        return a- (a*0.2+600)
    else: return "black money"

TaxC(10040)
```

```
8936.0
```

Remove duplicates

```
def removeDuplicates(nums):
        index = 0
        for i in range(1, len(nums)):
            if nums[index] != nums[i]:
                index = index+1
                nums[index] = nums[i]
        return index+1

removeDuplicates([1,1,2,3,4,4])
```

```
4
```

Climbing Stairs

```
def climbStairs(n):
    if n == 1:
        return 1
    if n == 2:
        return 2
    return climbStairs(n-1) + climbStairs(n-2)

climbStairs(6)
```

```
13
```