Print all subsequences

Question Given an array of integers, print all possible combination of that array. Example: arr = [2, 4, 6]

Possible subsequences = [ ], [2], [4], [6], [2,4] ,[2,6], [4,6] [2, 4, 6]

it can oberved that the number of possible combination is 2^N;

There is a technique; Generate the the binary representation of total possible combination and use checkBit to check & add the numbers into answer List

0&1 means check for first bit of number 0, if 1

Generate Binary of total

do checkBit

total = 8

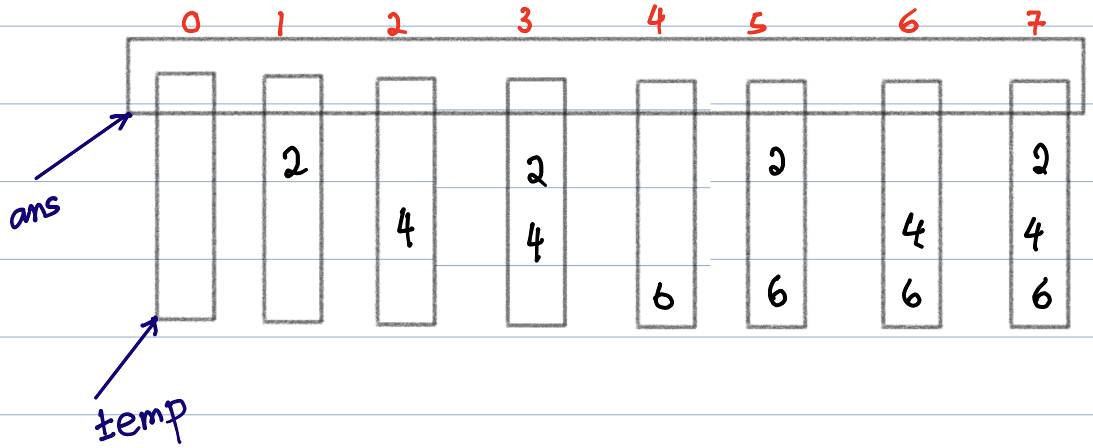
0 1 2

total = 8				arr = [2, 4, 6]			ON Bits	sequence
0	0	0	0	0&0	0&1	0&1	None	[ ]
1	0	0	1	1&0	1&1	1&2	0th	[2]
2	0	1	0	2&0	2&1	2&2	1st	[4]
3	0	1	1	3&0	3&1	3&2	1st and 0th	[2, 4]
4	1	0	0	4&0	4&1	4&2	2nd	[6]
5	1	0	1	5&0	5&1	5&2	0th and 2nd	[2, 6]
6	1	1	0	6&0	6&1	6&2	2nd and 1st	[4, 6]
7	1	1	1	7&0	7&1	7&2	0th, 2nd and 1st	[2,4,6]

Pseudo code

```
def printallsubsequences(arr):
    n = len(arr);   ans = [ ]
    total = 2**N // (1<<n) => $1*2^n$
    for i in range (total):
        temp = []
        for j in range(0,n):
            if checkBit (i,j) == True:
                temp.append (arr[j])
        ans. append(temp)
    return ans
```

```
// checks if ith Bit of number n is 1 or 0
def checkBit (n,i):
    if n & (1<<i)!=0 :
        return True
```


0
1
2
3
4
5
6
7
2
4
2
4
6
2
6
4
6
2
4
6
ans
temp