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CPE21S1

Summing list(Non-recursive)

```
main.py
1 print("Enter 5 numbers: ")
2 x1 = int(input(""))
3 x2 = int(input(""))
4 x3 = int(input(""))
5 x4 = int(input(""))
6 x5 = int(input(""))
7 #print (x1)
8 #print (x2)
9 #print (x3)
10 #print (x4)
11 #print (x5)
12
13 list1 = [x1,x2,x3,x4,x5]
14 print(list1)
15
16 Sum = sum(list1)
17 print(Sum)
```

Enter 5 numbers:

1
2
3
4
5
[1, 2, 3, 4, 5]
15

Summing list(Recursive)

```
main.py
1 def Sum(n):
2     if len(n)==0:
3         return 0
4     else:
5         return n[0] + Sum(n[1:])
6 print("Enter 5 numbers: ")
7 x1 = int(input(""))
8 x2 = int(input(""))
9 x3 = int(input(""))
10 x4 = int(input(""))
11 x5 = int(input(""))
12 print (Sum([x1, x2, x3, x4, x5]))
```

Enter 5 numbers:

1
2
4
5
6
18

Fibonacci sequence(Non-recursive)

```
1 Num = int(input("How many terms? "))
2
3 n1, n2 = 0, 1
4 count = 0
5
6 if Num <= 0:
7     print("Please enter a positive integer")
8
9 elif Num == 1:
10    print("Fibonacci sequence upto",Num,":")
11    print(n1)
12
13 else:
14    print("Fibonacci sequence:")
15    while count < Num:
16        print(n1)
17        nth = n1 + n2
18        # update values
19        n1 = n2
20        n2 = nth
21        count += 1
```

```
1
2
3
5
8
13
21
34
```

Fibonacci sequence(Recursive)

```
1 def Fib(n):
2     if n <= 1:
3         return n
4     else:
5         return(Fib(n-1) + Fib(n-2))
6
7 Num = int(input("Enter how many terms in the sequence: "))
8
9 # check if the number of terms is valid
10 if Num <= 0:
11     print("Plese enter a positive integer")
12 else:
13     print("Fibonacci sequence:")
14     for i in range(Num):
15         print(Fib(i))
```

Enter how many terms in the sequence: 10
Fibonacci sequence:

```
0
1
1
2
3
5
8
13
21
34
```