

# Nested control structures

```
for iterating_var in sequence:
```

```
    for iterating_var in sequence:
```

```
        statements(s)
```

```
    statements(s)
```

```
if test expression:
```

```
    Body of if
```

```
elif test expression:
```

```
    Body of elif
```

```
else:
```

```
    Body of else
```

```
while expression:
```

```
    while expression:
```

```
        statement(s)
```

```
    statement(s)
```



Nested if: to check number is zero, positive or negative

```
num = float(input("Enter a number: "))
if num >= 0:
    if num == 0:
        print("Zero")
    else:
        print("Positive number")
else:
    print("Negative number")
```

# Finding biggest of three numbers

---

```
a=10
```

```
b=20
```

```
c=30
```

Finding biggest of three numbers using nested if

(observe the indentation)

```
if(a>b):  
    if(a>c):  
        print("a is big")  
    else:  
        print("c is big")  
elif(b>c):  
    print("b is big")  
else:  
    print("c is big");
```

## Example for nested if

```
gender=input('enter you gender [m/f]')
if gender=='m':
    age=int(input('enter your age: '))
    if age>21:
        print('eligible for marriage')
    else:
        print('not eligible for marriage')
elif gender=='f':
    age=int(input('enter your age: '))
    if age>18:
        print('eligible for marriage')
    else:
        print('not eligible for marriage')
```





Write a program to generate multiplication table

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144



# Multiplication table

```
m=n=10
```

```
for i in range(1,m+1):
```

```
    for j in range(2,n+1):
```

```
        print(i*j,end="\t")
```

```
print()
```

```
for i in range(1,11):
```

```
    for j in range(1,11):
```

```
        print(i*j,end="\t")
```

```
print()
```



Print the following pattern

$$1 = 1$$

$$1 + 2 = 3$$

$$1 + 2 + 3 = 6$$

$$1 + 2 + 3 + 4 = 10$$

$$1 + 2 + 3 + 4 + 5 = 15$$





To print       $1 + 2 + 3 + 4 = 10$

```
n=4
```

```
sum=1
```

```
print(1,end=" ")
```

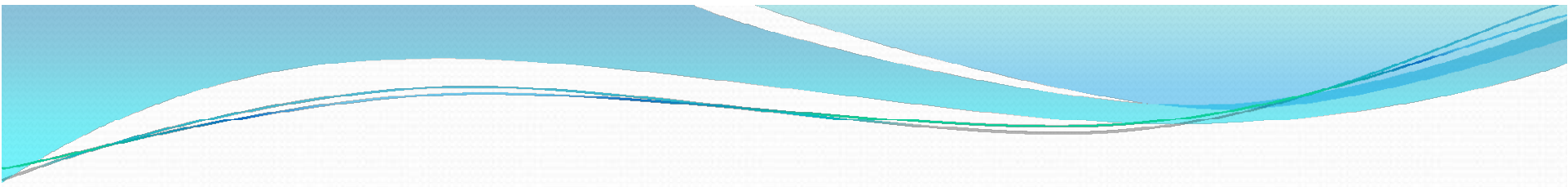
```
for i in range(2,n+1):
```

```
    sum=sum+i
```

```
    print('+',i,end=" ")
```

```
print("=",sum)
```





```
m=5
```

```
for n in range(1,m+1):
```

```
    sum=1
```

```
    print(1,end=" ")
```

```
    for i in range(2,n+1):
```

```
        sum=sum+i
```

```
        print('+',i,end=" ")
```

```
    print("=",sum)
```

1 = 1

1 + 2 = 3

1 + 2 + 3 = 6

1 + 2 + 3 + 4 = 10

1 + 2 + 3 + 4 + 5 = 15



## Printing snake ladder

100	99	98	97	96	95	94	93	92	91
81	82	83	84	85	86	87	88	89	90
80	79	78	77	76	75	74	73	72	71
61	62	63	64	65	66	67	68	69	70
60	59	58	57	56	55	54	53	52	51
41	42	43	44	45	46	47	48	49	50
40	39	38	37	36	35	34	33	32	31
21	22	23	24	25	26	27	28	29	30
20	19	18	17	16	15	14	13	12	11
1	2	3	4	5	6	7	8	9	10



# snake ladder problem

```
# snake ladder problem
n = 100
for j in range(5) :
    for i in range(n, n - 10, -1):
        print(i, end = " ")
    print()
    n -= 20
    for i in range(n, n + 10) :
        print(i + 1, end = " ")
    print()
```