

Loops

```
In [1]: # simple while loop

n = int(input("Max iterations: "))
i = 1
while i<=n:
    print(i)
    i += 1 # i = i+1
print("Done")
```

```
Max iterations: 8
1
2
3
4
5
6
7
8
Done
```

```
In [2]: n = int(input())
i = 1
while i<n:
    print(i**2)
    print("This is iteration no: ", i)
    i = i + 1 # i +=1
print("Done")
```

```
8
1
This is iteration no: 1
4
This is iteration no: 2
9
This is iteration no: 3
16
This is iteration no: 4
25
This is iteration no: 5
36
This is iteration no: 6
49
This is iteration no: 7
Done
```

In [3]: *# use if condition with while loop*
#print odd nos uptil the nth number

```
n = int(input())
i = 1
while i<n:
    if i%2 != 0:
        print(i)
    else:
        pass #do nothing
    i = i + 1
```

20
1
3
5
7
9
11
13
15
17
19

In [4]: *# Above program printed odds not even, So wirting this program to print even nos uptil the nth number*
use if condition with while loop
#print odd nos uptil the nth number

```
n = int(input())
i = 1
while i<n:
    if i%2 == 0:
        print(i)
    else:
        pass #do nothing
    i = i + 1
```

30
2
4
6
8
10
12
14
16
18
20
22
24
26
28

In [5]: *# break statement*

```
i = 1

while True: #infinite loop since while always returns true
    if i%9 == 0:
        print("Inside if")
        break
    else:
        print("Inside else")
        i = i+1

print("Done")
```

Inside else
Inside else
Inside else
Inside else
Inside else
Inside else
Inside else
Inside else
Inside else
Inside if
Done

In [6]: *# use of continue*

```
x = 1
while x <= 5:
    if x==3:
        x = x+1
        continue

    else:
        print(x)
        x = x + 1
```

1
2
4
5

```
In [2]: n = 10
i = 1
while True:
    if i%9 != 0:
        print("Inside if")
        i = i+1
        continue
    print("Something")
    print("Something else")
    break
print("done")
```

```
Inside if
Inside if
Inside if
Inside if
Inside if
Inside if
Inside if
Inside if
Inside if
Something
Something else
done
```

```
In [7]: # nested while loop

i = 1
while i<10:
    while i<5:
        print(i)
        print("I am inside the nested while loop")
        i = i + 1
    print("I am outside the nested while loop")
    break
```

```
1
I am inside the nested while loop
2
I am inside the nested while loop
3
I am inside the nested while loop
4
I am inside the nested while loop
I am outside the nested while loop
```

```
In [*]: i = 0
j = 5
while i<6:
    while j>0:
        print(i,j)
        i = i + 1
        j = j - 1
```

```
0 5
1 4
2 3
3 2
4 1
```

In []: