

Loops in Python

Need

- Repeat code block.
- **Iteration**: Execute same code repeatedly.

While Loop

- Executes while *condition* true.

For Loop

- Executes for each *item* in *iterable*.

While Loop

```
In [19]: # While Loop Example
```

```
In [31]: # While Loop  
# For Loop
```

1

```
In [23]: # C
while(condition){
    code
}
```

Cell In[23], line 2

```
while(condition){
    ^
```

SyntaxError: invalid syntax

```
In [ ]: # Python
while condition:
    code
```

```
In [4]: # 1. Print Multiplication Table
number = int(input("Enter the number: "))
i = 0
while i < 10:
    i += 1
    print(number * i)
```

Enter the number: 8

8
16
24
32
40
48
56
64
72
80

```
In [6]: number = int(input("Enter the number: "))
i = 1
while i < 11:
    print(number, "x", i, "=", number * i)
    i += 1
```

Enter the number: 7

7 x 1 = 7
7 x 2 = 14
7 x 3 = 21
7 x 4 = 28
7 x 5 = 35
7 x 6 = 42
7 x 7 = 49
7 x 8 = 56
7 x 9 = 63
7 x 10 = 70

```
In [7]: # while loop with else
x = 1
while x < 11:
    print(x)
    x += 1
else:
    print('limit crossed')
```

1
2
3
4
5
6
7
8
9
10
limit crossed

```
In [9]: # 2. Sum of Digits
number = int(input("Enter the number: "))
sum_digits = 0
while number > 0:
    digit = number % 10
    sum_digits += digit
    number //= 10
print("Sum of digits: " ,sum_digits)
```

Enter the number: 123

Sum of digits: 6

```
In [1]: # 3. Average of Numbers Until 0
count = 0
total = 0
while True:
    number = int(input("Enter a number (0 to stop): "))
    if number == 0:
        break
    total += number
    count += 1
if count > 0:
    average = total / count
    print(f"Average of entered numbers is : {average}")
else:
    print("No numbers entered.")
```

Enter a number (0 to stop): 10

Enter a number (0 to stop): 20

Enter a number (0 to stop): 30

Enter a number (0 to stop): 0

Average of entered numbers is : 20.0

```
In [15]: import random

random.randint(1, 100)
```

Out[15]: 55

```
In [27]: jackpot = random.randint(1, 100)
guess = int(input("Chal guess kar: "))
counter = 1
while guess != jackpot:
    if guess < jackpot:
        print("Guess higher")
    else:
        print("Guess lower")
    guess = int(input("Phirse guess kar: "))
    counter += 1
print("Sahi Jawab")
#print(f"You took {counter} attempts")
print("Wowzee you won.....The total number of attempts taken by you is", counter)
```

```
Chal guess kar: 77
Guess lower
Phirse guess kar: 53
Guess lower
Phirse guess kar: 33
Guess lower
Phirse guess kar: 25
Guess higher
Phirse guess kar: 29
Guess lower
Phirse guess kar: 27
Guess lower
Phirse guess kar: 26
Sahi Jawab
Wowzee you won.....The total number of attempts taken by you is 7
```

```
In [29]: import random

lottery = random.randint(1,100)
guess = int(input("Chal guess kar: "))
counter = 1
while guess != lottery and counter < 6:
    if guess > lottery:
        print("Guess Lower")
    else:
        print("Guess Higher")
    guess = int(input("Phirse guess kar: "))
    counter +=1

#print("Sahi jawaab")
#print("You took", counter, "attempts")
print("your jackpot number is",lottery)
```

```
Chal guess kar: 1
Guess Higher
Phirse guess kar: 2
Guess Higher
Phirse guess kar: 3
Guess Higher
Phirse guess kar: 4
Guess Higher
Phirse guess kar: 5
Guess Higher
Phirse guess kar: 6
your jackpot number is 80
```

```
In [4]: print("K")
```

K

In [31]:

```
print("Welcome to the Grocery Store ")
total = 0
count = 1

while True:
    # Ask for amount input
    amount = float(input(f"Enter amount #{count}: "))
    count += 1
    total += amount

    # Ask if the user wants to continue
    choice = input("Do you want to add another amount? (yes/no): ").lower()

    if choice != 'yes':
        break

print("\nSummary of entries:")
print("-----")
for i in range(1, count):
    print(f"The amount for #{i} ")

print("-----")
print(f"Total amount: {total}")
```

```
Welcome to the Grocery Store
Enter amount #1: 60.89
Do you want to add another amount? (yes/no): yes
Enter amount #2: 30.89
Do you want to add another amount? (yes/no): yes
Enter amount #3: 45.35
Do you want to add another amount? (yes/no): no
```

```
Summary of entries:
```

```
-----
The amount for #1
The amount for #2
The amount for #3
-----
Total amount: 137.13
```