**WHILE Loop**

-- **Python** **While Loop** is used to execute a block of statements repeatedly until a given condition is satisfied.

-- And when the condition becomes false, the line immediately after the loop in the program is executed.

-- Syntax:

while expression:

statement(s)

-- While loop falls under the category of **indefinite iteration**. Indefinite iteration means that the number of times the loop is executed isn’t specified explicitly in advance.

# *while loop*

count = 0

*while* (count < 3):

    count = count + 1

    print("Hello World")

# *checks if list still contains any element*

a = [1, 2, 3, 4]

*while* a:

    print(a.pop())

print("Now the list is empty!")

## Single statement while block

-- Just like the if block, if the while block consists of a single statement we can declare the entire loop in a single line.

-- If there are multiple statements in the block that makes up the loop body, they can be separated by semicolons (;).

# *Python program to illustrate Single statement while block*

count = 0

*while* (count < 5): count += 1; print("Hello World")

### **While loop with else**

-- As discussed above, while loop executes the block until a condition is satisfied.

-- When the condition becomes false, the statement immediately after the loop is executed.

-- The else clause is only executed when your while condition becomes false. If you break out of the loop, or if an exception is raised, it will not be executed.

-- The else block just after for/while is executed only when the loop is NOT terminated by a break statement.

i = 0

*while* i < 4:

    i += 1

    print(i)

*else*:  # *Executed because no break in for*

    print("No Break\n")

i = 0

*while* i < 4:

    i += 1

    print(i)

*break*

*else*:  # *Not executed as there is a break*

    print("No Break")

### **While loop on Boolean values**

-- One common use of boolean values in while loops is to create an infinite loop that can only be exited based on some condition within the loop.

# *Initialize a counter*

count = 0

# *Loop infinitely*

*while* True:

    # *Increment the counter*

    count += 1

    print(f"Count is {count}")

    # *Check if the counter has reached a certain value*

*if* count == 10:

        # *If so, exit the loop*

*break*

# *This will be executed after the loop exits*

print("The loop has ended.")