5.Loops

• Introduction to for and while loops.

A **loop** is a way to **repeat** a block of code **multiple times** until a certain condition is met.

in Python, loops allow you to run the same code **over and over** without writing it multiple times.

It repeats the particular statement till the condition will satisfied.

Types of Loops:

- Entry Control Loops
 - for loop
 - while loop
- Exit Control Loops

(Note: do while loop is not supported in python.)

-do while loop

- 1. for loop
- The **for loop** in Python is used to iterate over a sequence. The syntax is simple and flexible.

- Syntax

for variable in sequence:

Code to execute

2. While loop

- The **while loop** is used to execute a block of code as long as a condition is True. Once the condition becomes False, the loop stops.

Syntax

while condition:

Code to execute as long as the condition is True

• How loops work in Python.

Loops is a control structure that allows you to repeat ab block of code multiple times based on a condition or over a sequence.

Loops reduce code repetition and make programs more efficient and readable

Why use loops?

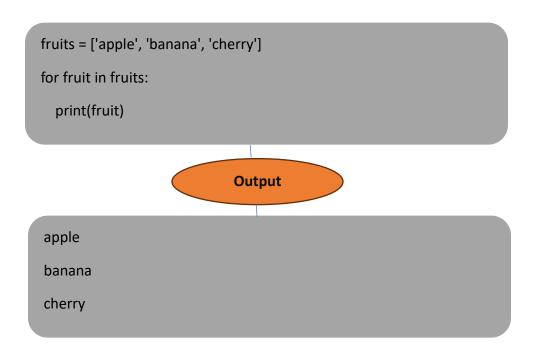
- o To repeat tasks automatically
- o To automate repetitive tasks
- To process collections
- o To wait for a condition to be met

• Using loops with collections (lists, tuples, etc.).

Collections are data structures that group multiple elements into a single object.

Using for Loops with Collections.

1. List



2. Tuple

