

Lesson Plan: IT-323 Python Programming 3(2-1)

Week #: Control Flow Statements

Lecture #: While Loops in Python

Learning Objectives:

By the end of this lecture, students will be able to:

- ☑ Understand the syntax and working of the `while` loop in Python.
- ☑ Implement `while` loops to perform repetitive tasks based on a condition.
- ☑ Use `while` loops to solve real-world problems such as printing sequences, summing numbers, and generating multiplication tables. ☑ Apply `while` loops with conditional statements to control program flow.

Topics Covered:

1. Introduction to While Loops

- Definition and syntax of the `while` loop.
- How a while loop executes based on a condition.

2. Basic Examples

- Printing numbers from 1 to 10 using a `while` loop.
- Printing "Hello, world!" multiple times.

3. Using While Loops in Mathematical Computations

- Generating multiplication tables.
- Summing integers from 1 to 100.
- Calculating the sum of even numbers in a range.
- Computing squares of numbers.

4. Hands-on Activity: Basic While Loop Practice

- Modify the given example to print numbers from 1 to 20 instead of 1 to 10.
- Change the "Hello, world!" loop to print a user-defined number of times.
- Modify the sum-from-1-to-100 program to sum only odd numbers from 1 to 100.

Resources:

📖 [Lecture Notes](Control Flow Statements: while loop) 🔗 Reference Book: **, Chapter

Assignments & Tasks:

📁 **Examples:** Work through **Examples 5.18 - 5.20** from the lecture notes.

📄 **Task:** Complete and submit **tasks 5.12 - 5.14** by the next session.