
WEEK 7 – PYTHON ASSIGNMENT

Data Analytics Training Program

TASK OVERVIEW

In this week's assignment, you will work with **Python basics, data structures, functions, file handling, and regular expressions**.

You are required to write Python programs and demonstrate your understanding of core Python concepts used in Data Analytics.

TASK 1 : PYTHON BASICS & DATA TYPES

Write Python programs to perform the following:

- Declare variables of different data types (int, float, string, boolean)
 - Take user input for name, age, and marks
 - Display the entered values using print()
 - Perform basic arithmetic operations
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TASK 2 : DATA STRUCTURES & LOOPS

Using **Lists, Tuples, Sets, and Dictionaries**:

- Create a list of at least 10 numbers
 - Find:
 - Sum of numbers
 - Maximum and minimum value
 - Create a dictionary with student details (name, age, course, marks)
 - Use a loop to display all dictionary values
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TASK 3 : FUNCTIONS & LAMBDA

Write Python programs for the following:

- Create a function to calculate:
 - Total marks
 - Average marks

- Create a function to check whether a number is even or odd
 - Write a **lambda function** to calculate the square of a number
 - Write a function that returns only even numbers from a list
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TASK 4 : FILE HANDLING

Perform the following file operations using Python:

- Create a text file named sample.txt
 - Write at least 5 lines of text into the file
 - Read and display the file content
 - Append new content to the same file
 - Count the number of lines in the file
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TASK 5 : CSV / JSON & REGEX

Complete the following tasks:

- Create a CSV file and write sample student data
 - Read the CSV file and print the contents
 - Create a JSON file with at least 3 student records
 - Use **Regular Expressions** to:
 - Extract all numbers from a string
 - Remove special characters from a text
 - Validate a phone number
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TASK 6 : MINI PYTHON PROGRAM

Write a mini program that:

- Takes user input
- Stores data in a file
- Reads the file content
- Cleans the data using regex
- Displays the final cleaned output

SUBMISSION INSTRUCTIONS

1. Save all Python programs in a single folder
 2. File naming format:
 - YourName_Week7_Python.py (or multiple .py files)
 3. Create a **GitHub repository**
 4. Upload all .py files
 5. Share the GitHub repository link in the WhatsApp group
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DEADLINE

 **Sunday 9 AM – 14/12/2025**
