TDI Python for Data Analytics Week 1 Assignment

Welcome to Python Week 1!
In this project, you will build on the foundational Python skills, you will learn about variables, data types, basic arithmetic, operators, and functions. This week's assignment will help you practice these essential concepts that form the backbone of Python programming for data analytics.

Your Mission:

In this assignment, you'll tackle key Python concepts such as:

- **Variables & Data Types**: How to declare and manipulate variables.
- **Arithmetic Operations**: How to perform mathematical operations.
- **Comparison & Logical Operators**: How to compare values and make decisions.
- **Functions**: How to create reusable blocks of code.
- **Inbuilt Functions**: Exploring some of Python's powerful inbuilt functions.

The following resources will help you understand basic functions in python,after which you are expected to complete the task below:

LINK 1: https://youtu.be/2_6O39UdFi0?si=7m2mYDdubU1bITC0

LINK 2: https://youtu.be/ita82szjz-A?si=N0H4l8pXe7M7BNaB

LINK 3: https://youtu.be/feHvG3_POW0?si=mbiHSDt7JE8aGJPD

LINK 4 https://youtu.be/V3CQqY5GcGc?si=IvMSbMpxxJaD2kI3

LINK 5: https://youtu.be/b093aqAZiPU?si=b6nUjBu2R1Ah7r0V

Questions:

1. Create a variable "x" and assign it the integer value "10". Create another variable "y" and assign it the float value "20.5". Write a Python statement to add these two variables and print the result.

2. Create a variable "name" and assign it your name as a string. Write a Python statement to print the length of this string.

3. Write a Python function called “calculate_area” that takes the length and width of a rectangle as arguments and returns the area. Test the function with a length of “5” and a width of “3”.

4. Given two variables, “a = 15” and “b = 4”, write Python code to compute and print the result of integer division and modulus operation.

5. Write a Python statement to check if a variable “age” is greater than or equal to “18” and less than “65”. Print "Adult" if the condition is true, otherwise print "Not an Adult".

6. Create two variables, “num1 = 12” and “num2 = 15”. Write a Python statement to check if “num1” is not equal to “num2” and print the result.

7. Write a Python function called “is_even_and_positive” that takes an integer as input and returns “True” if the number is both even and positive, otherwise returns “False”.

8. Given two boolean variables, “x = True” and “y = False”, write a Python statement to compute and print the result of the logical “AND” and “OR” operations.

9. Write a Python function called “greet” that takes a name as an argument and prints a greeting message like "Hello, [name]!". Call this function with your name.

10. Create a Python function “find_max” that takes a list of numbers as input and returns the maximum number in the list. Test the function with the list “[3, 7, 2, 5, 9]”.

11. Write a Python statement to find and print the type of the variable “x” where “x = [1, 2, 3]”.

12. Create a list of numbers “[4, 2, 9, 1]” and use an inbuilt function to sort this list in ascending order. Print the sorted list.

13. Write a Python function called “calculate_discount” that takes the original price and discount percentage as arguments, calculates the discounted price, and returns it. Test the function with a price of “100” and a discount of “15”.

14. Write a Python script that prompts the user to enter their age and prints whether they are a minor (age < 18) or an adult (age >= 18). Use comparison and logical operators in your solution.

15. Create a function called “string_statistics” that takes a string as input and returns a tuple containing the length of the string, the string in uppercase, and the string in lowercase. Test the function with the string "Python Programming".

Submission Instructions:

Submit your Python script or Jupyter notebook with answers to these tasks on our designated platform. Make sure your code is clean and well-documented.

Good luck with this assignment! By completing it, you'll strengthen your foundational Python programming skills essential for data analysis!