Course Title: Data Science   **Course Code:** 150511

Assignment-1

Basics of Data Science

Question 1: Explain the concept of Data Science and its applications in various industries. Provide examples of how Data Science is used to derive insights and make informed decisions.

Question 2: Discuss the impact of Data Science on business operations and decision-making. Provide specific examples of how businesses have benefited from implementing Data Science strategies.

Question 3: Describe the stages of the Data Analytics Life Cycle and explain the significance of each stage. How does this cycle contribute to effective data analysis and decision-making?

Basics of Python Programming

Question 1: Essential Python Libraries and String Manipulation

Write a Python program using the `random` library that generates a random password of length 8. The password should consist of both uppercase and lowercase letters, as well as digits.

Question 2: Decision Making and Looping

Write a Python program to find the sum of all even numbers between 1 and 50 (inclusive) using a `while` loop.

Question 3: User-Defined Functions and Function Arguments

Write a Python program that defines a function called `calculate_total_cost` to calculate the total cost of items in a shopping cart. The function should take a variable number of arguments (item prices) and return the sum of all items. Test the function with various item prices.

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