Python for Data Science : Assignment 1

Instructions :

1. Please submit a single **.ipynb** file containing the solution to all questions. We will not accept **.py** files
2. Make sure every question is answered in a separate chunk/cell. We will not accept two or more questions in a chunk/cell
3. Strictly avoid using AI tools, we will detect plagiarism with the help of Moss (A System for Detecting AI generated code - https://theory.stanford.edu/~aiken/moss/).
4. Avoid copying code from your peers, just changing variables names shall also count for plagiarism.
5. Each question carries 5 marks

Question 1:

Write a Python program to implement a simple calculator with four basic arithmetic operations: addition, subtraction, multiplication, and division. The program should get the choice of operation from the user (addition/subtraction/multiplication/division) and then get the operands. At the end, the program should print the result

Question 2 :

Write a Python program to calculate body mass index (BMI). BMI should be calculated according to the formula given here: https://www.calculator.net/bmi-calculator.html. The input height and weight in meters and kilograms, respectively, should be obtained from the user.

- If BMI <= 18.5. Print you are underweight
- If 18.5 < BMI <= 25 . Print your weight is normal
- If BMI > 25. Print you are overweight.

Question 3:

a) Write a Python program to Extract Unique dictionary values. Create a dictionary on your own to solve this.
b) Write a Python program to find if a number is a happy number or not

Happy Number: A Happy Number is a positive integer that, when you repeatedly replace the number by the sum of the squares of its digits and continue the process, eventually reaches 1. If the process never reaches 1 but instead loops endlessly in a cycle, the number is not a Happy Number.

For example:19 is a Happy Number because:

The process reaches 1, so 19 is a Happy Number.

$1^2 + 9^2 = 82$

$8^2 + 2^2 = 68$

$6^2 + 8^2 = 100$

$1^2 + 0^2 + 0^2 = 1$

Rubric for grading programming assignments

Correctness 45%

Without error 45%

Readability 10%