

Artificial Intelligence I: Introduction to Data Science and Machine Learning

Instructors:

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Week 1 Assignment

1. Variables and Assignment:

- Assign values to variables "length" and "width" and calculate the area of a rectangle.

2. Data Types:

- Create a variable "pi" with a floating-point value and use it to calculate the circumference of a circle given the radius.

3. Operator Precedence:

- Given the code below, perform the addition "2 + 10" first by using parathesis. Print the results before and after. Why did the result change?

```
x = 5
y = x * 2 + 10
```

4. Booleans and Logic Operations:

- Use comparison operators (<, >, ==) to compare two numbers and print whether they are equal or not.

5. Conditionals:

- Write a program that checks if a given number is even or odd and prints the result.

6. Loops:

- Use a while loop to print numbers from 1 to 5.

7. Functions:

- Write a function that takes a string as input and prints its length. Call the function with different strings.

8. Python Data Structures:

- List: Append a new element to an existing list and print the updated list.
- Tuple: Create a tuple with mixed data types and print each element.
- Dictionary: Add a new key-value pair to an existing dictionary and print the updated dictionary.
- Set: Perform set intersection between two sets.

9. Slicing:

- Given a string, use slicing to print the first three characters, the last three characters, and reverse the string.

10. File I/O:

- Write a program that takes user input and saves it to a text file.

11. Object-Oriented Programming (OOP):

- Define a class "Car" with attributes "make" and "model". Create two instances of this class and print their attributes.