**ASSIGNMENT: 1**

**QUESTION: 1**

Python basics (Strings, Data types. Loops, If else conditions, functions, Classes).

**ANSWER:**

**STRINGS:**

It seems like you'd like more information about strings in Python. Is there something specific you'd like to know or explore further about strings? Whether it's about string methods, formatting, or anything else, feel free to ask!

**CODE:**

**# Define a string**

**my\_string = "Hello, World!"**

**# Accessing characters in a string**

**print("First character:", my\_string[0]) # Output: H**

**print("Last character:", my\_string[-1]) # Output: !**

**# String length**

**print("Length of the string:", len(my\_string)) # Output: 13**

**# String slicing**

**print("Substring from index 7 to the end:", my\_string[7:]) # Output: World!**

**print("Substring from index 2 to 7:", my\_string[2:7]) # Output: llo,**

**# String concatenation**

**greeting = "Hello"**

**name = "Alice"**

**message = greeting + ", " + name**

**print("Concatenated string:", message) # Output: Hello, Alice**

**# String repetition**

**repeated\_string = "abc" \* 3**

**print("Repeated string:", repeated\_string) # Output: abcabcabc**

**# String methods**

**my\_string = " Hello, World! "**

**print("Stripped string:", my\_string.strip()) # Output: Hello, World!**

**print("Uppercase:", my\_string.upper()) # Output: HELLO, WORLD!**

**print("Lowercase:", my\_string.lower()) # Output: hello, world!**

**print("Split string:", my\_string.split(",")) # Output: [' Hello', ' World! ']**

**# String formatting**

**name = "Bob"**

**age = 25**

**formatted\_string = "My name is {} and I am {} years old.".format(name, age)**

**print("Formatted string:", formatted\_string) # Output: My name is Bob and I am 25 years old.**

**DATA TYPES:**

In Python, data types define the type of data that a variable can hold. Here are some of the commonly used data types in Python:

**CODE:**

**# Numeric Types**

**num\_int = 10 # integer**

**num\_float = 3.14 # floating-point number**

**# Sequence Types**

**LOOPS:**

Certainly! Loops in Python allow you to execute a block of code repeatedly. There are two main types of loops in Python: **for** loops and **while** loops.

**for Loop:**

A **for** loop is used to iterate over a sequence (such as a list, tuple, string, or range) or any iterable object.

### while Loop:

A **while** loop repeats a block of code as long as a specified condition is true.

### Loop Control Statements:

* **break**: Terminates the loop and transfers control to the statement immediately after the loop.
* **continue**: Skips the remaining code inside the loop for the current iteration and proceeds to the next iteration.

Loops are fundamental for iterating over data structures, performing repetitive tasks, and controlling the flow of your program. They are powerful constructs that help in automating tasks efficiently.

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**CODE:**

**# Example of a for loop**

**fruits = ["apple", "banana", "cherry"]**

**for fruit in fruits:**

**print("I love", fruit)**

**# Output:**

**# I love apple**

**# I love banana**

**# I love cherry**

**# Example of a while loop**

**count = 0**

**while count < 5:**

**print("Count is:", count)**

**count += 1**

**# Output:**

**# Count is: 0**

**# Count is: 1**

**# Count is: 2**

**# Count is: 3**

**# Count is: 4**

**# Using break and continue statements**

**count = 0**

**while True:**

**if count == 3:**

**break # Exit the loop when count is 3**

**if count == 1:**

**count += 1**

**continue # Skip printing when count is 1**

**print("Current count:", count)**

**count += 1**

**# Output:**

**# Current count: 0**

**# Current count: 2**

**QUESTION: 2**

Numpy and pandas (These are libraries you need to check it’s documentation).

**ANSWER:**

N Map and Pandas Library.