**AI Day 02 Notes**

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**Beautiful Notes on Type Casting and String Manipulation in Python**

1. **Type Casting:**
   * Type casting involves converting one data type into another.
   * Python provides various built-in functions for type casting, such as int(), float(), str(), ord(), tuple(), list(), set(), dict(), hex(), and oct().
   * Explicit type casting is done manually by the developer using these functions.
   * Implicit type casting occurs automatically by the Python interpreter based on data type hierarchy
2. **Example:**
   * string = "13"
   * number = 7
   * str\_num = int(string) # Convert string to integer
   * sum = number + str\_num
   * print("The sum of two numbers is:", sum)
3. **User Input:**
   * Use input() function to take user input (returns a string).
   * Convert input to desired data type (e.g., int(input()), float(input())).
4. **Example:**
   * name = input("Enter Your Name: ")
   * print("My Name is:", name)
5. **Strings:**
   * Enclosed in double or single quotes.
   * Escape double quotes within a string using \".
   * Access individual characters using indexing (e.g., name[0]).
   * Iterate through characters using loops.
   * Find string length using len().
6. **Example:**
   * fruit = "Mango"
   * print(len(fruit)) # Shows length including spaces
7. **String Slicing:**
   * **Treat strings like arrays.**
   * **Positive slicing: name[start:end] (inclusive start, exclusive end).**
   * **Negative slicing: name[:-n] (exclude last n characters).**
8. **Example:**
   * name = "Mango"
   * print(name[0:4]) # First four letters
9. **Loop Through String:**
   * Strings are iterable; loop through characters.
10. **Example:**
    * alpha = "ABCD"
    * for char in alpha:
    * print(char) # Output: A B C D
11. **Task:**
    * **Given a sentence, perform the following:** 
      + **Count characters (including spaces).**
      + **Count words.**
      + **Convert to uppercase.**
      + **Convert to lowercase.**
      + **Print in reverse order.**