**AI Day 07 Notes**

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**Type Casting**

* **Type Casting:** The conversion of one data type into another data type.
* Python supports various functions/methods for type casting:
  + **int():** Converts to an integer.
  + **float():** Converts to a floating-point number.
  + **str():** Converts to a string.
  + **ord():** Converts a character to its Unicode code point.
  + **tuple(), list(), set(), dict():** Convert to respective data structures.
  + **hex(), oct():** Convert to hexadecimal and octal representations.

**Array of Characters**

* **Example: name = "MRK"**
  + Access individual characters using indexing: name[0], name[1], name[2]
  + Note: Accessing an out-of-range index (e.g., name[3]) results in an error.
  + Iterating through characters in a string using a loop:

for character in name:

print(character)

**String Length**

* Use len() function to find the length of a string.
* Example: names = "HARIS, Rizwan", len(names) gives the total character count (including spaces).

**String Slicing**

* Positive Slicing (left to right):
  + name[0:4] prints the first four letters.
  + name[:4] automatically starts from index 0.
  + name[2:5] includes characters from index 2 to 4.
  + name[:] prints the entire string.
  + name[1:] starts from index 1 and goes to the end.
* **Negative Slicing (right to left):**
  + name[:-4] gives only the first character (“M”).
  + name[:len(name)-4] is equivalent.

**Looping Through Strings**

* Strings are iterable (like arrays), so we can loop through them.
* Example: alpha = "ABCD"

for i in alpha:

print(i) # Output: A B C D

**Quick Task**

* Output of name = "Muhammad" and print(name[-6:-1]): “hamma”

**String Methods**

* **Common methods:**
  + **upper():** Converts to uppercase.
  + **lower():** Converts to lowercase.
  + **strip():** Removes leading and trailing whitespaces.
  + **rstrip("!"):** Removes trailing exclamation marks.
  + **replace("Rizwan", "Muhammad"):** Replaces a word.
  + **split(" "):** Splits the string into a list based on spaces.
  + **capitalize():** Capitalizes the first letter.
  + **endswith("d"):** Checks if the string ends with a specific character.

**Example Programs**

# Example of string slicing

name = "Mango"

print(name[1:4]) # Output: "ang"

**# Example of loop through string**

fruit = "Apple"

for char in fruit:

print(char) # Output: Apple