**Lecture 3: Bool & String**

**Recap:**

* Covered literals, operators, variables, memory models, statements, and functions.
* Computational thinking: solving problems by translating them into code.
* Programming principles: language-independent vs. language-dependent approaches.

**Boolean (Bool):**

* Values: True, False.
* **Comparison Operators:** ==, !=, <, >, <=, >= (return boolean results).
* **Logical Operators:** and, or, not (combine boolean expressions).
* **Lazy Evaluation:** and stops at False, or stops at True.
* **Precedence:** not > and > or (use parentheses for clarity).

**Strings:**

* Defined with single ('abc'), double ("abc"), or triple ('''text''') quotes.
* **Escaping:** \ (e.g., \n newline, \t tab).
* **Raw Strings:** Prefix r to ignore escape sequences.
* **Operations:**
  + Concatenation: "Hello" + " World" → "Hello World"
  + Repetition: "Ha" \* 3 → "HaHaHa"
  + Indexing: s[0] (first char), s[-1] (last char)
  + Slicing: s[1:4] (extracts characters 1-3)

**Built-in Functions:**

* min(), max(), abs(), pow() (basic operations).
* id(obj): Memory address of obj.
* input(): User input as string.
* print(): Outputs values.
* type(obj): Returns type.

**Type Conversion:**

* int(x), float(x), str(x) convert data types.
* Example: int("5") → 5, float("2.3") → 2.3, str(9) → "9".