**Day 6 - Variables and Data Types**

**🔹 What is a Variable?**

* A **variable** is a container that stores data in memory.
* Just like a kitchen container holds items like sugar/salt.

**✅ Example:**

a = 1 # Integer

b = True # Boolean

c = "Harry" # String

d = None # NoneType

**🔹 What is a Data Type?**

* A **data type** defines the kind of value a variable holds.
* Helps the program understand what operations can be done.

**✅ Check Type:**

a = 1

print(type(a)) # <class 'int'>

b = "1"

print(type(b)) # <class 'str'>

**🔸 Built-in Python Data Types**

**1. Numeric Data Types**

* **int** → Whole numbers  
  Examples: 3, -8, 0
* **float** → Decimal numbers  
  Examples: 7.349, -9.0, 0.0000001
* **complex** → Complex numbers  
  Example: 6 + 2j

**2. Text Data**

* **str** → String/Text  
  Examples: "Hello World!", "Python Programming"

**3. Boolean Data**

* **bool** → True or False  
  Examples: True, False

**4. Sequence Data Types**

**✅ List (mutable, uses square brackets [])**

list1 = [8, 2.3, [-4, 5], ["apple", "banana"]]

print(list1)

✅ **Output:**

[8, 2.3, [-4, 5], ['apple', 'banana']]

**✅ Tuple (immutable, uses parentheses ())**

tuple1 = (("parrot", "sparrow"), ("Lion", "Tiger"))

print(tuple1)

✅ **Output:**

(('parrot', 'sparrow'), ('Lion', 'Tiger'))

**5. Mapped Data**

**✅ Dictionary (key-value pairs in {})**

dict1 = {"name": "Sakshi", "age": 20, "canVote": True}

print(dict1)

✅ **Output:**

{'name': 'Sakshi', 'age': 20, 'canVote': True}

🎯 **Tip:** Use type() often to understand what kind of data you're working with.