**Understanding data types: integers, floats,strings, lists, tuples, dictionaries,sets**

Python utilizes various built-in data types to store and manage different kinds of information.

1. Numeric Types:

* Integers (int): Represent whole numbers, both positive and negative, without decimal points. There is no practical limit to their size in Python.

age = 30

* Floats (float): Represent real numbers with decimal points or in scientific notation.

pi = 3.14159  
 temperature = 25.5

2. Text Type:

* Strings (str): Represent sequences of characters, enclosed in single, double, or triple quotes. Strings are immutable, meaning their content cannot be changed after creation.

name = "Alice"  
 message = 'Hello, World!'

3. Sequence Types:

* Lists (list): Ordered, mutable collections of items. Items can be of different data types and can be modified, added, or removed after the list is created.

fruits = ["apple", "banana", "cherry"]  
 numbers = [1, 2, 3, 4, 5]

* Tuples (tuple): Ordered, immutable collections of items. Similar to lists, but once created, their elements cannot be changed.

coordinates = (10, 20)  
 colors = ("red", "green", "blue")

4. Mapping Type:

* Dictionaries (dict): Unordered collections of key-value pairs. Each key must be unique and immutable (e.g., strings, numbers, tuples), while values can be of any data type. Dictionaries are mutable.

person = {"name": "Bob", "age": 25, "city": "New York"}

5. Set Types:

* Sets (set): Unordered, mutable collections of unique items. Duplicate elements are automatically removed. Sets are useful for mathematical set operations like union, intersection, and difference.

unique\_numbers = {1, 2, 3, 2, 4} # will store {1, 2, 3, 4}

* Frozensets (frozenset): Similar to sets but are immutable. They can be used as keys in dictionaries or elements in other sets.

immutable\_set = frozenset([1, 2, 3])