PYTHON TUTORIAL FOR BEGINNERS

Chapter - 05

Data Types in Python

- What are Data types
- Types of data types
- Data types examples

Data Types in Python

In Python, a data type is a **classification** that specifies the **type of value** a variable can hold. We can check data type using type() function.

Examples:

```
1. my_name = "Madhav"
            >>> type(my_name)
            O/P: <class 'str'>
2. value  = 101
            >>> type(value)
            O/P: <class 'int'>
```

Basic Data Types in Python

Python can be used as a powerful calculator for performing a wide range of arithmetic operations.

```
1. Numeric: Integer, Float, Complex

2. Sequence: String, List, Tuple

3. Dictionary

4. Set

5. Boolean

6. Binary: Bytes, Bytearray, Memoryview
```

Data Types in Python

Numeric　①

The data that has a numeric value

int: positive or negative whole numbers

float: real number with a decimal point

complex: number contains an arranged pair, x + iy, (real part) + (imaginary part)i

Sequence　②

Collection of similar or different Python data types

string: Collection of one or more characters put in a quote/quotes.

list: can store objects of multiple data type, and encased inside square sections []. Mutable.

tuple: store objects of multiple data type, and encased inside circle sections (). Immutable.

Dictionary　③

A key-value pair set arranged in any order.

Sets　④

Unordered collection of elements. It is iterable, mutable, and has no duplicate elements

Boolean　⑤

True and **False** are the two default values

Binary　⑥

Used to work with binary data. Such as image, audio, mp3 files, etc.

bytes: immutable sequence type to represent sequences of bytes (8-bit values).

bytearray: similar to bytes but can be modified .

Memoryview: Used to create a "view" of memory containing binary data.

Data Types Examples

Numeric

Int	float	complex
26, 101, 108	0.5, 1.5, 101.2	complex(3, 5) -> 3+5i

Sequence

str	list	tuple
"Madhav", "Rishabh", "26"	[1, 26, 101, 108]	(1, 26, 101, 108)

Dictionary

dict
{'name': 'Madhav', 'age': 26, 'city': 'Prayagraj'}

Sets

set
{1, 26, 101, 108}, {"abc", 34, True, 40, "male"}

Boolean

bool
True, False

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