06-07-2025 ASSIGNMENT

1. Datatype is a structure in which your data is organised

2. There are 7 Datatypes they are:

    1. Numeric Datatype => integer, float, complex
    2. Sequence Datatype => string, list, tuple, range
    3. Mapping Datatype => dictionary
    4. Set Datatype => set, frozenset
    5. Boolean Datatype => bool Values True or False
    6. Binary Datatype => bytes, bytearray, memory view
    7. None Datatype => Represents the absence of value

3. Mutable Datatype can be changed after they are created.

   Eg: You can add, remove and change the elements in a list.

   Immutable Datatype cannot be changed once they are created.

   Eg: You cannot change a string or a tuple after it is made

4. int(Integer):

   Represents Whole Numbers(No decimals)

   Can be positive or negative

   Eg: 5, -3, 100, 0

  float(Floating point):

  Represents numbers with decimals points

  Eg: 3.14, -2.6, 0.0

  complex(Complex numbers):

  Has two parts:

    Real part(like int, float)

    Imaginary part(written with j in python)

Eg: 2 + 3j, -1.7 + 5j

5. In Python, the str(string) datatype is used to represent text. which is enclosed in Quotes.

Eg: name = " Bhavani"

mess = "Hello everyone"

6. type(521) => int

type("521") => str

7. list

1. Ordered
2. Mutable
3. Allows Duplicates
4. Written in square braces[]

Eg: Fruits = [apple, mango, grapes]

Tuple

1. Ordered
2. Immutable
3. Allows duplicates
4. written in parentheses()

Eg: names = (chitti, ammu, shimmy)

Set

1. Unordered
2. mutable
3. NO duplicates
4. written in curly braces{}

Eg: numbers = {1, 2, 3}

8. List

1. A list is collection of values.

2. Values are stored in order using index numbers(0, 1,2..).

3. Uses square braces[].

Eg: Fruits = [apple, mango, grapes]

Dictionary:

1. A dictionary stores data in key-value pair.

2. Instead of index numbers, you uses to access the values.

3. Uses curly bracws{}

Eg: Attendence = { 1 : "Bhavani", 2 : Sanjana, 3 : Navya, 4 : Pralaya}

9. The default data type of a number with a decimal point in python is float

Eg: num = 3.0

10. name = "sahasra"

age = 8

height = 3.2

num1 = 4 + 6j

11. num1 = 24

color = "Blue"

temp = 46.80

print(type(num1))

print(type(color))

print(type(temp))

12. If we try to add a string and an integer can only concatenate str (not "int") to str

13. x = [1, 2, 3]

type(x) is list

y = (1, 2, 3)

type(y) is tuple

z = {1, 2, 3}

type(z) is set

14. No, you cannot change a value in tuple once it is defined, because tuples are immutable

15. Yes, reassignment is possible for immutable data types but there's catch

name = "Hello"

name = "World"