**Python Data Types - Beginner Questions**

1. What is a data type in Python?

Ans: A data type in python is basically the kind of values a variable holds. It tells python what type of data its working with it may be a number ,text, list etc..

For example:- If we write name =”sowmya” in python it is an string (text).

1. List all the data types that we have in Python?

Ans:-Numeric Types: int, float, complex  
Text Type: str  
Sequence Types: list, tuple, range  
 Set Types: set, frozenset  
 Mapping Type: dict  
 Boolean Type: bool

Binary Types: bytes, bytearray, memoryview  
 None Type: NoneType

1. What is the difference between mutable and immutable data types?

Ans:-Mutable: Can be changed after creation (e.g., list, dict, set)  
- Immutable: Cannot be changed after creation (e.g., int, float, tuple, str)

1. What is the difference between int, float, and complex?

Ans:-int: Whole numbers (e.g., 5)  
float: Decimal numbers (e.g., 5.5)

complex: Numbers with real and imaginary part (e.g., 5 + 2)

1. Which data type is used to represent text in Python?

Ans:-str (string)

1. What is the output of type(521) and type("521")?

Ans:-· 521 (without quotes) is an **integer**,

"521" (with quotes) is a **string of characters**

1. What is the difference between list, tuple, and set?

Ans:-: Mutable, Ordered, Allows duplicates – [1, 2, 3]  
tuple: Immutable, Ordered, Allows duplicates – (1, 2, 3)  
set: Mutable, Unordered, No duplicates – {1, 2, 3}

1. How is a dictionary different from a list?

Ans:-List stores items in order: ['a', 'b']  
Dictionary stores key-value pairs: {'name': 'Alice'}

1. What is the default data type of a number with a decimal point?

Ans: Any number that includes a decimal point (like 3.0, 2.5, 0.0) is automatically treated as a float, which stands for **floating-point number**.

1. Declare variables of type int, float, string, and complex.

Ans:- int: Whole number → 10

float: Decimal number → 3.14

str: Text → "Hello, Python!"

complex: Complex number with real and imaginary parts → 2 + 3j

1. Take any 3 datatypes examples and check type of each variable using the type() function.

Ans:- x = 100

y = 3.14

z = "Hello"

Output:-

<class 'int'>

<class 'float'>

<class 'str'>

1. What happens if you try to add a string and an integer?

Ans:- You get a Type Error.  
x = "hello"  
y = 5  
x + y → ❌ Type Error: can only concatenate str (not "int") to str

1. What is the output of:
   1. x = [1, 2, 3]
   2. y = (1, 2, 3)
   3. z = {1, 2, 3}
   4. print(type(x), type(y), type(z))

Ans:- x = [1, 2, 3]  
y = (1, 2, 3)  
z = {1, 2, 3}  
print(type(x), type(y), type(z))  
  
Output:  
<class 'list'> <class 'tuple'> <class 'set'>

1. Can you change a value in a tuple once it is defined? Why or why not?

Ans:- No, tuples are immutable – you cannot modify their contents once created.

1. Is reassignment possible for immutable data types?

Ans:-Yes, you can reassign the variable to a new object.  
x = 5x = [1, 2, 3]  
y = (1, 2, 3)  
z = {1, 2, 3}  
print(type(x), type(y), type(z))  
  
Output:  
<class 'list'> <class 'tuple'> <class 'set'>

x = 10 # Now x refers to a new value