**Data Types**

Q)What are Data types ?

A data type tells the compiler or interpreter what kind of data a variable can hold.

It defines the operations that can be performed on the data and the amount of memory to be allocated.

**Categories of Data Types**

Data types are mainly divided into two categories:

1. Primitive (or Built-in) Data Types
2. Non-Primitive (or Reference) Data Types

**Primitive Data Types**

These are the basic types provided by a programming language.

1. Integer: For whole numbers (e.g., int in C#, Java, etc.)
2. Float/Double: For decimal numbers
3. Char: For single characters

Iv) Boolean: For true/false values

**Non-Primitive Data Types**

These are more complex and often created by the programmer.

1. Arrays
2. Strings
3. Classes & Objects
4. Interfaces

**Why Are Data Types Important?**

* They help catch errors at compile-time.
* They optimize memory usage.
* They improve code clarity and readability.
* They ensure correct operations on variables.

**Conclusion**

In summary, understanding data types is essential for efficient programming. They define how data is stored, processed, and interacted with in any software system.

Mastering them is the first step toward writing bug-free and optimized code.