Data types in Java

In Java, data types are used to specify the type of data that a variable can store.

Here are some common data types in Java:

Primitive Data Types:

These are basic data types that represent single values. Java has eight primitive data types:

- byte: `8-bit` signed integer. `Example: byte age = 25;`
- short: `16-bit` signed integer. `Example: short temperature = -10;`
- int: `32-bit` signed integer. `Example: int count = 1000;`
- long: `64-bit` signed integer. `Example: long distance = 150000L;`
- float: `32-bit` floating-point. `Example: float price = 19.99f;`
- double: `64-bit` floating-point. `Example: double pi = 3.14159;`
- char: `16-bit` Unicode character. `Example: char grade = 'A';`
- boolean: `1-bit/8-bit` Represents true or false values. `Example: boolean isJavaFun = true;`

Non-Primitive Data Types:

These are more complex data types and are also known as **reference** types because they refer to objects. Common non-primitive data types include:

- String: Represents a sequence of characters. `Example: String name = "John";`
- Arrays: Collections of elements of the same data type. `Example: int[] numbers = {1, 2, 3, 4, 5};`
- Classes: User-defined types that represent objects. `Example: Person person = new Person();`

DATA TYPES	SIZE	DEFAULT	EXPLAINATION
boolean	1 bit	false	Stores true or false values
byte	1 byte/ 8bits	0	Stores whole numbers from -128 to 127
short	2 bytes/ 16bits	0	Stores whole numbers from -32,768 to 32,767
int	4 bytes/ 32bits	0	Stores whole numbers from -2,147,483,648 to 2,147,483,647
long	8 bytes/ 64bits	0L	Stores whole numbers from -9,223,372,036,854,775,808 to 9,223,372,036,854,775,807
float	4 bytes/ 32bits	0.0f	Stores fractional numbers. Sufficient for storing 6 to 7 decimal digits
double	8 bytes/ 64bits	0.0d	Stores fractional numbers. Sufficient for storing 15 decimal digits
char	2 bytes/ 16bits	'\u0000'	Stores a single character/letter or ASCII values