**Scanner class: Taking user input in Java**

**Why take user input?**

**-** Hardcoding values is not flexible.

- Real-world apps need data from users.

- Example: ATM asks for PIN

- Java provides the scanner class for this purpose.

**Scanner class:**

- In Java, the Scanner class is present in the java.util package is used to obtain input for primitive data types like int, double, etc.., and Strings.

- Used to read input from keyboard (System.in) or files.

- Must import before use: import java.util.Scanner;

**Methods in Scanner class:**

|  |  |
| --- | --- |
| **Method** | **Purpose** |
| nextInt() | Reads an integer value |
| nextDouble() | Reads a decimal value |
| nextLine() | Reads a full line |
| next() | Reads a single word |
| nextBoolean() | Reads true or false |

**Type Casting in Java**

**Type Casting:**

- Variables store different data types (int, double, char, etc).

- It is the process of converting a value from one data type to another.

- Sometimes we need to convert one type to another.

- Example: 5/2 => 2 (int division)

5/2 => 2.5 (double division)

**Types of casting:**

1. **Implicit casting (Type promotion):**

**-** Done automatically by Java.

- Converts smaller type to larger type.

1. **Explicit casting (Type Conversion):**

**-** Done manually by the programmer.

- May cause data loss.

- Converts larger to smaller.

**Casting Scenarious:**

- int => double (safe)

- double => int (data loss)

- Char <=> int (ASCII values)