

Java Scanner: The Ultimate Beginner's Guide

How to make your Java programs listen to the user

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Introduction: The Scanner Machine

By default, the variables you write in code are fixed. But what if we want to ask the user for the numbers?

Think of the **Scanner** like a physical scanner machine in an office. Usually, when you put a paper in a physical scanner, it scans the **entire** page at once.

In Java, our Scanner is a bit different. It looks at what the user types on the keyboard, but we can be very specific about **what** to scan. We can tell it: *“Only scan the next number (int)”* or *“Only scan the next decimal point (float).”*

The 3 Steps

To use the Scanner, follow these three steps.

Step 1: The Import Line

Java hides the Scanner tool in a specific library. You need to tell Java where to find it. Put this line at the **very top** of your file.

```
import java.util.Scanner;
```

Step 2: Turn on the Scanner

Inside your code (in the `main` section), you need to write a specific line to set up the scanner.

Note

This line looks a bit complicated with keywords like `new` and `System.in`. **For now, please just accept this line as a rule.** Copy and paste it exactly as it is.

```
// This line prepares the scanner to read from the keyboard
Scanner input = new Scanner(System.in);
```

Step 3: Scan the Data

Now, you command the scanner to wait for the user to type something and store it in a variable.

```
int age = input.nextInt();
```

Cheat Sheet: Which Command to Use?

Depending on the **Data Type** (variable) you want to fill, you must use a specific command.

Data Type	Command	Example Use Case
int	<code>input.nextInt()</code>	Whole numbers (Age, Year)
double	<code>input.nextDouble()</code>	Decimal numbers (Price, GPA)
boolean	<code>input.nextBoolean()</code>	True/False answers

Full Code Example

Here is a complete program. It asks for a student's number and age.

```
import java.util.Scanner; // Step 1

public class Main {
    public static void main(String[] args) {
```

```

// Step 2: Setup the Scanner
// (Remember: Just copy this line for now!)
Scanner input = new Scanner(System.in);

// Step 3: Ask and Scan

// 1. Ask for an Integer
System.out.print("Enter your Student Number: ");
int studentNumber = input.nextInt();

// 2. Ask for an Integer
System.out.print("Enter your age: ");
int age = input.nextInt();

// Print the results back to see if it worked
System.out.println("--- Result ---");
System.out.println("Student Number: " + studentNumber);
System.out.println("Age: " + age);
}
}

```

Summary

1. **Import** the tool at the top: `import java.util.Scanner;`
2. **Setup** the tool inside main: `Scanner input = new Scanner(System.in);`
3. **Scan** the specific type you need: `nextInt()` or `nextDouble()`.

Happy Coding!