**Java Scanner Class**

The Scanner class of the java.util package is used to read input data from different sources like input streams, users, files, etc. Let's take an example.

**Example 1: Read a Line of Text Using Scanner**

import java.util.Scanner;

class Main {

public static void main(String[] args) {

// creates an object of Scanner

Scanner input = new Scanner(System.in);

System.out.print("Enter your name: ");

// takes input from the keyboard

String name = input.nextLine();

// prints the name

System.out.println("My name is " + name);

// closes the scanner

input.close();

}

}

[Run Code](https://www.programiz.com/java-programming/online-compiler)

**Output**

Enter your name: Kelvin

My name is Kelvin

In the above example, notice the line

Scanner input = new Scanner(System.in);

Here, we have created an object of Scanner named input.

The System.in parameter is used to take input from the standard input. It works just like taking inputs from the keyboard.

We have then used the nextLine() method of the Scanner class to read a line of text from the user.

Now that you have some idea about Scanner, let's explore more about it.

**Import Scanner Class**

As we can see from the above example, we need to import the java.util.Scanner package before we can use the Scanner class.

import java.util.Scanner;

To learn more about importing packages, visit [Java Packages](https://www.programiz.com/java-programming/packages-import).

**Create a Scanner Object in Java**

Once we import the package, here is how we can create Scanner objects.

// read input from the input stream

Scanner sc1 = new Scanner(InputStream input);

// read input from files

Scanner sc2 = new Scanner(File file);

// read input from a string

Scanner sc3 = new Scanner(String str);

Here, we have created objects of the Scanner class that will read input from [InputStream](https://www.programiz.com/java-programming/inputstream), [File](https://www.programiz.com/java-programming/file), and [String](https://www.programiz.com/java-programming/string) respectively.

**Java Scanner Methods to Take Input**

The Scanner class provides various methods that allow us to read inputs of different types.

|  |  |
| --- | --- |
| Method | Description |
| nextInt() | reads an int value from the user |
| nextFloat() | reads a float value form the user |
| nextBoolean() | reads a boolean value from the user |
| nextLine() | reads a line of text from the user |
| next() | reads a word from the user |
| nextByte() | reads a byte value from the user |
| nextDouble() | reads a double value from the user |
| nextShort() | reads a short value from the user |
| nextLong() | reads a long value from the user |

**Example 2: Java Scanner nextInt()**

import java.util.Scanner;

class Main {

public static void main(String[] args) {

// creates a Scanner object

Scanner input = new Scanner(System.in);

System.out.println("Enter an integer: ");

// reads an int value

int data1 = input.nextInt();

System.out.println("Using nextInt(): " + data1);

input.close();

}

}

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**Output**

Enter an integer:

22

Using nextInt(): 22

In the above example, we have used the nextInt() method to read an integer value.

**Example 3: Java Scanner nextDouble()**

import java.util.Scanner;

class Main {

public static void main(String[] args) {

// creates an object of Scanner

Scanner input = new Scanner(System.in);

System.out.print("Enter Double value: ");

// reads the double value

double value = input.nextDouble();

System.out.println("Using nextDouble(): " + value);

input.close();

}

}

[Run Code](https://www.programiz.com/java-programming/online-compiler)

**Output**

Enter Double value: 33.33

Using nextDouble(): 33.33

In the above example, we have used the nextDouble() method to read a floating-point value.

**Example 4: Java Scanner next()**

import java.util.Scanner;

class Main {

public static void main(String[] args) {

// creates an object of Scanner

Scanner input = new Scanner(System.in);

System.out.print("Enter your name: ");

// reads the entire word

String value = input.next();

System.out.println("Using next(): " + value);

input.close();

}

}

[Run Code](https://www.programiz.com/java-programming/online-compiler)

**Output**

Enter your name: Jonny Walker

Using next(): Jonny

In the above example, we have used the next() method to read a string from the user.

Here, we have provided the full name. However, the next() method only reads the first name.

This is because the next() method reads input up to the **whitespace** character. Once the **whitespace** is encountered, it returns the string (excluding the whitespace).

**Example 5: Java Scanner nextLine()**

import java.util.Scanner;

class Main {

public static void main(String[] args) {

// creates an object of Scanner

Scanner input = new Scanner(System.in);

System.out.print("Enter your name: ");

// reads the entire line

String value = input.nextLine();

System.out.println("Using nextLine(): " + value);

input.close();

}

}

[Run Code](https://www.programiz.com/java-programming/online-compiler)

**Output**

Enter your name: Jonny Walker

Using nextLine(): Jonny Walker

In the first example, we have used the nextLine() method to read a string from the user.

Unlike next(), the nextLine() method reads the entire line of input including spaces. The method is terminated when it encounters a next line character, \n.

**Recommended Reading:** [Java Scanner skipping the nextLine()](https://stackoverflow.com/questions/13102045/scanner-is-skipping-nextline-after-using-next-or-nextfoo).

**Java Scanner with BigInteger and BigDecimal**

Java scanner can also be used to read the big integer and big decimal numbers.

* **nextBigInteger()** - reads the big integer value from the user
* **nextBigDecimal()** - reads the big decimal value from the user

**Example 4: Read BigInteger and BigDecimal**

import java.math.BigDecimal;

import java.math.BigInteger;

import java.util.Scanner;

class Main {

public static void main(String[] args) {

// creates an object of Scanner

Scanner input = new Scanner(System.in);

System.out.print("Enter a big integer: ");

// reads the big integer

BigInteger value1 = input.nextBigInteger();

System.out.println("Using nextBigInteger(): " + value1);

System.out.print("Enter a big decimal: ");

// reads the big decimal

BigDecimal value2 = input.nextBigDecimal();

System.out.println("Using nextBigDecimal(): " + value2);

input.close();

}

}

[Run Code](https://www.programiz.com/java-programming/online-compiler)

**Output**

Enter a big integer: 987654321

Using nextBigInteger(): 987654321

Enter a big decimal: 9.55555

Using nextBigDecimal(): 9.55555

In the above example, we have used the java.math.BigInteger and java.math.BigDecimal package to read BigInteger and BigDecimal respectively.

**Working of Java Scanner**

The Scanner class reads an entire line and divides the line into tokens. Tokens are small elements that have some meaning to the Java compiler. For example,

Suppose there is an input string:

He is 22

In this case, the scanner object will read the entire line and divides the string into tokens: "**He**", "**is**" and "**22**". The object then iterates over each token and reads each token using its different methods.