

Lesson 7.... Input from the Keyboard

We will consider how to input from the keyboard the three data types.... *int*, *double*, and *String*.

Inputting an integer:

Use the *nextInt* method to input an **integer** from the keyboard:

```
import java.io.*; //see "Imports necessary" on next page
import java.util.*;
public class Tester
{
    public static void main( String args[] )
    {
        Scanner kbReader = new Scanner(System.in); //see "Mysterious
                                                    //objects" on next page
        System.out.print("Enter your integer here. "); //enter 3001
        int i = kbReader.nextInt( );
        System.out.println(3 * i); //prints 9003
    }
}
```

Inputting a *double*:

Use the *nextDouble* method to input a **double** from the keyboard:

```
import java.io.*;
import java.util.*;
public class Tester
{
    public static void main( String args[] )
    {
        Scanner kbReader = new Scanner(System.in);
        System.out.print("Enter your decimal number here. "); //1000.5
        double d = kbReader.nextDouble( );
        System.out.println( 3 * d ); //prints 3001.5
    }
}
```

Inputting a *String*:

Use the *next* method to input a **String** from the keyboard:

```
import java.io.*;
import java.util.*;
public class Tester{
    public static void main( String args[] )
    {
        Scanner kbReader = new Scanner(System.in);
        System.out.print("Enter your String here. "); //Enter One Two
        String s = kbReader.next( ); //inputs up to first white space
        System.out.println( "This is the first part of the String,... " + s);
        s = kbReader.next( );
        System.out.println( "This is the next part of the String,... " + s);
    }
}
```

Output would be as shown below:

```
Enter your String here. One Two
This is first part of the String,... One
This is next part of the String,... Two
```

Multiple inputs:

In a similar way *nextInt()* and *nextDouble()* can be used multiple times to parse data input from the keyboard. For example, if **34 88 192 18** is input from the keyboard, then *nextInt()* can be applied four times to access these four integers separated by white space.

Inputting an entire line of text:

Inputting a **String** (it could contain spaces) from the keyboard using *nextLine()*:

```
import java.io.*;
import java.util.*;
public class Tester
{
    public static void main( String args[] )
    {
        Scanner kbReader = new Scanner(System.in);
        System.out.print("Enter your String here. "); //Enter One Two
        String s= kbReader.nextLine( );
        System.out.println( "This is my string,... " + s);
    }
}
```

Output would be as shown below:

```
Enter your String here. One Two
This is my string,... One Two
```

Imports necessary:

We must **import** two classes,...*java.io.** and *java.util.** that provide methods for inputting integers, *doubles*, and *Strings*. See [Appendix I](#) for more on the meaning of “importing”.

Mysterious objects:

In the above three examples we used the following code:

```
Scanner kbReader = new Scanner(System.in);
```

It simply creates the keyboard reader **object** (we arbitrarily named it *kbReader*) that provides access to the *nextInt()*, *nextDouble()*, *next()*, and *nextLine()* methods. For now just accept the necessity of all this...it will all be explained later.

The *Scanner* class used here to create our keyboard reader object only applies to 1.5.0_xx or higher versions of Java. For older versions, see [Appendix M](#) for an alternate way to obtain keyboard input.

An anomaly:

Using a **single** *Scanner* object, the methods *nextInt()*, *nextDouble()*, *next()*, and *nextLine()* may be used in **any sequence** with the following exception:

It is not permissible to follow *nextInt()* or *nextDouble()* with *nextLine()*. If it is necessary to do this, then a new *Scanner* object must be constructed for use with *nextLine()* and any subsequent inputs.

Project... Going in Circles

The area of a circle is given by:

$$\text{area} = \pi (r^2)$$

Now, suppose we know the area and wish to find *r*. Solving for *r* from this equation yields:

$$\sqrt{\frac{\text{area}}{\pi}}$$

Write a program (project and class both named *RadiusOfCircle*) that uses *sqrt()* and *PI* from the *Math* class to solve for the radius of a circle. Use keyboard input to specify the area (provide for the possibility of area being a decimal fraction).

Write out your solution by hand and then enter it into the computer and run. Before inputting the area, put a prompt on the screen like this.

What is the area? _ ... (the underscore indicates the cursor waiting for input)

Present your answer like this:

Radius of your circle is 139.4.

Project... What's My Name?

From the keyboard enter your first and then your last name, each with its own prompt. Store each in a separate *String* and then concatenate them together to show your full name. Call both the project and the class *FullName*. When your program is finished running, the output should appear similar to that below:

```
What is your first name? Cosmo
What is your last name? Kramer
Your full name is Cosmo Kramer.
```