

Introduction to Classes and Methods

Sample Program

```
// Name: Mr. Brennan
// File: Echo2.java
// purpose: Prompt the user to enter some text and then
//         an integer, and echo them to the user.
//         This uses the Scanner class.

import java.io.*;
import java.util.Scanner;

public class Echo2
{
    public static void main (String[ ] args)
    {
        Scanner scan = new Scanner(System.in);
        System.out.print ("Enter a string: ");

        String s = scan.nextLine();

        System.out.print ("\nEnter an integer: ");
        int i = scan.nextInt();
        System.out.println ("\nYou entered string " + s + " and integer " + i + "\n");
    }
}
```

Sample Program

```
import java.io.*;
```

```
import java.util.Scanner; ←———— Tells java where to find the Scanner class.
```

```
public class Echo2
```

```
{  
    public static void main (String[ ] args)  
    {  
        Scanner scan = new Scanner(System.in); ←————  
        System.out.print ("Enter a string: ");  
  
        String s = scan.nextLine();  
  
        System.out.print ("\nEnter an integer: ");  
        int i = scan.nextInt();  
        System.out.println ("\nYou entered string " + s + " and integer " + i + "\n");  
    }  
}
```

Declares a variable named scan.
Variable scan has a type of Scanner.
Scanner is not a primitive data type, and is named with a capital letter.

Sample Program

```
public class Echo2
{
    public static void main (String[ ] args)
    {
        Scanner scan = new Scanner(System.in);
        System.out.print ("Enter a string: ");

        String s = scan.nextLine();

        System.out.print ("\nEnter an integer: ");
        int i = scan.nextInt();
        System.out.println ("\nYou entered string " + s + " and integer " + i + "\n");
    }
}
```

new tells the system to allocate space for a new Scanner variable. Passing System.in to the Scanner Method will connect the **scan** variable to the keyboard as in input device.

Sample Program

```
public class Echo2
{
    public static void main (String[ ] args)
    {
        Scanner scan = new Scanner(System.in);
        System.out.print ("Enter a string: ");

        String s = scan.nextLine();

        System.out.print ("\nEnter an integer: ");
        int i = scan.nextInt();
        System.out.println ("\nYou entered string " + s + " and integer " + i + "\n");
    }
}
```

← As a “instance” of a Scanner class, the `scan` variable has many methods available to use. Here it is using the `nextline()` method to read in a line of text (from the keyboard) and store it in a String variable named `s`.

Sample Program

```
public class Echo2
{
    public static void main (String[ ] args)
    {
        Scanner scan = new Scanner(System.in);
        System.out.print ("Enter a string: ");

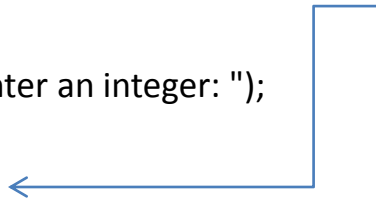
        String s = scan.nextLine();

        System.out.print ("\nEnter an integer: ");

        int i = scan.nextInt();

        System.out.println ("\nYou entered string " + s + " and integer " + i + "\n");
    }
}
```

A variable name `i` is being declared as an integer using the primitive `int` data type. It is initialized using the next value that is available from the keyboard input using the `nextInt()` method from `scan`.



<i>Method</i>	<i>Returns</i>
int nextInt()	Returns the next token as an int. If the next token is not an integer, InputMismatchException is thrown.
long nextLong()	Returns the next token as a long. If the next token is not an integer, InputMismatchException is thrown.
float nextFloat()	Returns the next token as a float. If the next token is not a float or is out of range, InputMismatchException is thrown.
double nextDouble()	Returns the next token as a long. If the next token is not a float or is out of range, InputMismatchException is thrown.
String next()	Finds and returns the next complete token from this scanner and returns it as a string; a token is usually ended by whitespace such as a blank or line break. If not token exists, NoSuchElementException is thrown.
String nextLine()	Returns the rest of the current line, excluding any line separator at the end.
void close()	Closes the scanner.

From *Scanner Class*, University of Texas
<http://www.cs.utexas.edu/users/ndale/Scanner.html>