Lesson 1: Basic Program Structure - Hello World

Program Skeleton:

Enter the following program skeleton, compile (prepare it to run), and then run (execute). Your instructor may have you give it a specific project name; otherwise, call the project *Lesson1*.

If you do not know how to enter and execute a program, ask your instructor, or use the appendices in this book for two of the more popular programming environments.

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

At this point don't worry about what any of this means. It's just something we must do every time. Soon we will learn the meaning of all of this. For now, it's just the skeleton that we need for a program.

Adding some meaningful code:

Now, let's add some meaningful code inside the *main* method. (Notice this word, **method**. We will constantly refer to **methods** throughout this course.) We will also add a **remark**.

```
public class Tester //We could put any name here besides
Tester{
     public static void main(String args[]){
          System.out.println("Hello world");
     }
}
```

Remarks:

Notice the rem (remark) above that starts with //. You can put remarks anywhere in the program without it affecting program operation. Remarks are also called comments or notes.

Printing:

System.out.println("Hello world"); is how we get the computer to printout something. Notice the trailing semicolon. Most lines of code are required to end in a semicolon.

Now try putting in some other things in the *println* parenthesis above. Each time recompile and run the program:

1. "Peter Piper picked a peck of pickled peppers."

2. “I like computer science.”
3. 25/5
4. 4 / 7.0445902
5. 13 * 159.56

Two *println*s for the price of one:

Next, modify your program so that the *main* method looks as follows:

```
public static void main(String args[]){
     System.out.println(“Hello world”);
     System.out.println(“Hello again”);
}
```

Run this and note that it prints :

Hello world
Hello again

Printing “Sideways”:

Now remove the *ln* from the first *println* as follows:

```
public static void main(String args[]){
     System.out.print(“Hello world”);
     System.out.println(“Hello again”);
}
```

Run this and note that it prints:

Hello worldHello again

Here are the rules concerning *println* and *print*:

- *System.out.println( )* completes printing on the current line and pulls the print position down to the next line where any subsequent printing continues.
- *System.out.print( )* prints on the current line and stops there. Any subsequent printing continues from that point.

An in-depth look at rems:

Let’s take a further look at rems. Consider the following program (class) in which we wish to document ourselves as the programmer, the date of creation, and our school:

```
public class Tester{
     //Programmer: Kosmo Kramer
     //Date created: Sept 34, 1492
     //School: Charles Manson High School; Berkley, Ca
     public static void main(String args[]){
          System.out.println(“Hello again”);
     }
}
```

Block rems:

It can get a little tedious putting the double slash rem-indicator in front of each line, especially if we have quite a few remark lines. In this case we can "block rem" all the comment lines as follows:

```
public class Tester{
     /*Programmer: Kosmo Kramer
     Date created: Sept 34, 1492
     School: Charles Manson Junior High; Berkley, Ca*/
     public static void main(String args[]){
          System.out.println("Hello again");
     }
}
```

Notice we use /* to indicate the start of the block and */ for the end. **Everything** between these two symbols is considered to be a remark and will be ignored by the computer when compiling and running.

Project: From Me To You

Create a new project called *FromMeToYou* having a *Tester* class with the following content. Also include remarks above *public class Tester* that identifies you as the author along with the date of creation of this program:

```
//Author: Charles Cook
//Date created: Mar 22, 2005
public class Tester{
     public static void main(String args[]){
          …
     }
}
```

Supply code in the place of: that will produce the following printout:

```
From: Bill Smith
Address: Dell Computer, Bldg 13
Date: April 12, 2005
To: Jack Jones
Message: Help! I'm trapped inside a computer!
```