

Logic & Computation (Grade 12)

Unit 1: Introduction to Logic



Declarations and Printing

Consider the following Java program:

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

        int x;
        x = 5;
        System.out.println( x );

    }
}
```

These three lines are called the **main method**, and they are where the Java compiler looks for instructions:

```
int x;
x = 5;
System.out.println( 5 );
```

Each of these lines has a different purpose.

The first line is called a declaration:

```
int x;
```

We say that in this line we are *declaring* a variable called *x*, and that *x* has data type *int*, which is short for integer.

Notice that we have not yet given *x* a value. At this point, we have set aside memory to store an *int*, but nothing useful has yet been stored in that memory. Java will not allow us to give a value to a variable, until it has first been declared. We will explore reasons for this tomorrow, in our discussion of data types.

The second line is called an *assignment*:

```
x = 5;
```

We say that we are *assigning* the value 5 to the variable *x*.

Now that we have said that *x* is an *int* with value 5, we are able to ask Java to print out the value of that variable, using a print command:

```
System.out.println( x );
```

This line tells the computer to print the number 5 to the output.

Exercises

Study the Java program printed below, and answer the following questions:

1. Which lines of code make up the main method? How do you identify them?
2. What does each line of code in the main method do? You can answer by labeling the lines. Identify declarations, assignments, and print commands.
3. What do you think is the output of this program?

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

        int x;
        int y;
        x = 5;
        y = 7;
        System.out.println( x + y );
    }
}
```

4. Fill in the main method of the following program, so that it assigns values to x and y, then prints x, then prints y, then prints the sum of x and y.

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

```
    }
}
```

5. In the line of code,

```
System.out.println( x + y );
```

how do you think Java knows whether to print the *value* of x + y, instead the actual text, “x + y”?