Introduction

A program

```java
public class Kilograms {
    public static void main (String [] args) {
        final double pounds = 20.0;
        System.out.print(pounds);
        System.out.print(" pounds is ");
        System.out.print(pounds / 2.2);
        System.out.println(" kilograms.");
        return;
    }
}
```

Parts of the program

```java
public class Kilograms {

    public static void main (String [] args) {
        double pounds = 20;
        System.out.print(pounds);
        System.out.print(" pounds is ");
        System.out.print(pounds / 2.2);
        System.out.println(" kilograms.");
        return;
    }
}
```
Add comments to describe what the program does

/**
 * Converter from pounds to kilograms.
 */
public class Kilograms {
    public static void main (String [] args) {
        double pounds = 20; // Amount to convert to kilograms
        System.out.print(pounds);
        System.out.print(" pounds is ");
        System.out.print(pounds / 2.2);
        System.out.println(" kilograms."); // End of this line
        return;
    }
}

Input as well as output

import java.util.Scanner; // User input

/**
 * Converter from pounds to kilograms.
 */
public class Kilograms {
    public static void main (String [] args) {
        Scanner scanner = new Scanner(System.in);

        // Read a number of pounds, and convert it to kilograms
        System.out.print("How many pounds? ");
        final double pounds = scanner.nextDouble();
        final double kilograms = pounds / 2.2;

        // Print a message about the conversion
        System.out.print(pounds);
        System.out.print(" pounds is ");
        System.out.print(kilograms);
        System.out.println(" kilograms.");

        return;
    }
}

The other thing that happens with a program
public class Kilograms {
    public static void main (String [] args) {
        double pounds = 20;
        System.out.print(pounds);
        System.out.print(" pounds is ");
        System.out.print(pounds / 2.2);
        System.out.println(" kilograms.");
        return;
    }
}

Errors are frustrating

Good news! There are really only six things you need to know here!

The six things a program can do

1. Get input
2. Give output
3. Do arithmetic
4. Update a stored value
5. Test a condition, and select an alternative
6. Repeat a group of actions

The less good news is that there’s a whole bunch of detail and skill associated with each of these.
Four ways Java will help you organize your work

1. Grouping related data together
2. Defining sequences of operations
3. Associating data with operations relevant to the particular data
4. Naming these groups, sequences and associations for easy and repeated use