# Choose 2 Programs that have been written by a reputable programmer and analyse the following:

* Program 1 = One uploaded to classrooms provided by Chris.
* Program 2 = One from [learningprocessing.com Ex. 13-2](http://learningprocessing.com/examples/chp13/example-13-02-random-distribution).

## Why have they chosen that particular language?

The reason Java has been chosen to write this program is because the GUI enhanced processing variation of Java is used for making art type projects that this program relates too. Using the Java language the program was able to easily make a simple GUI that allowed the programmer to then add the items they wanted in this instance it was a bouncing ball on the X axis. The program also comes with many predefined functions that make it easier to program in this means the programmer doesn’t have to make basic functions for setting the canvas size or filling objects.

For the second program Java (Processing) has also been chosen because of its useful capability’s for GUI’s and art like creation. The programmers has created a random distribution application that has grey bars along the X axis that flow down the screen at different speeds and eventually reach the bottom and then has a full grey screen. The programmer has chosen Java (Processing) for this because the program is an art based piece of software and it has all the functions need to make this without the programmer having to make their own.

## Why have they chosen a particular style / convention to name variables?

The fist program has chosen to name variables this way because of what they are needed for, the variables that have been used are “x” and “xSpeed” they have been called this because it is what they are used for example. The “x” variable is used because it defining the x axis on the program used for the speed and ellipse. The “xSpeed” variable is used for setting the x axis speed. The Ball on the program needs to be moving so setting the speed using this variable helps locate where the speed setting is.

The Random Distribution program us only using one user defined variables, they have called this variable randomCounts. The reason they have set the variable as randomCounts is because it is creating and setting the feature that makes the program have a random counter for each of the bars that come down the screen. The bars all flow at different speeds meaning it will need a variable and this is why it is set at randomCounts.

## Why have they (or haven’t they) included comments at certain points in the program?

The bouncing ball program and the random distribution program only has code comments at some points of the program because the rest of the code is self-explanatory, meaning when a user is faced with this code they are able to read the comments for some of the more complex parts such as - if ((x > width) || (x < 0)) { or int index = int(random(randomCounts.length)); pieces of code like those two examples (which are sampled from both pieces of work) will have a comment that shows the next user / other people what that segment does. Other pieces of code that are easier to read or a well-known will not have comments as they become too cluttered and there is no need for them.

## Why have they named the classed using a particular style / convention?

The first example and the second example of code does not have any user defined classes. The classes they have needed to use for programming the application has all the classes built into Processing. If they had used classes they would have had to remake some of the remade classes and this would have made the code messy and it would have been unnecessary.

## Why have they used ‘i’ for loop counters (why not another letter)

The reason that programmers use the letter ‘i’ because they are used an iteration variables and to store small data such as number counts. Other letters are used and the letters are ‘j’ and ‘k’ the three most popular for loop counters are ‘i’ ‘j’ ‘k’ occasionally used is this variable also ‘idx’. The single letter variables also come from the Ramanujan summation technique.

## Why have they formatted / indented the code that way?

The reason for the code being indented and formatted the way it has done is because it helps make the code look cleaner and easier to read. When code doesn’t have formatting and indentations it can one make the code not work as some sections require indents to be part of the above code or it will think they are separate parts such as an if statement. Usually not including indents and formatting in code can make it messy and hard to read. So programmers add these to prevent that and make it easier to code and for others to read the code.

## Why / how have they used ‘white space’?

White space has been used serval times in both pieces of code. The main reason for the white spaces in both of the code examples is to format as staid about in the previous question. They have used whitespace to help keep the clean code rhythm by adding line spaces between different segments of code to differentiate the different lines and parts of code within the program.

## Why have they solved problems in that particular way?

The code has no know problems and works with the way it has been written, it is also written in the shortest possible way minimising the possibilities of broken code.