Goal:
Tightly manage looping constructs and selection/decision statements.

Assignment:
Write a C++ program that will display a bar chart from values stored in a data input file. Your program will draw a bar chart on the terminal window using one or more of the following symbols {+, #, *} to represent a quantity. Your program must scale the values of each item so that all items can be shown on the bar chart.

For this assignment, assume that the y-axis is 20 units, and the x-axis is 20 units. You may further assume that the width of each item is 3 units along the x-axis. The space between each item is also 3 units.

The data input file will have one value on each line such as the following sample:

```
3
100
30
70
```

In the above sample data input file, the first value (3) is total number of item values in file. This number is an integer value. The minimum possible value is 3, and the maximum possible value is 6.

The next value (100) is an integer number representing the height of the Item1 bar. The next value (30) is an integer number representing height of the Item2 bar. The final value in this sample file (70) is an integer number representing the height of the Item3 bar. If the first number in the data input file is \( x \), then there will be \( x \) subsequent values – one for the height of each Item bar.
An example of the program output for this sample data is shown below.

Note: You must leave a margin of 3 units from the top and 1 unit from the bottom. Use the "|" symbol to print the y-axis and "-" for the x-axis. There is a three unit gap on each side of a bar item.

The skill set required for this assignment includes:
- Looping constructs
- Control structures
- Algorithm design
- Array variables
- File input/output
- Error checking

This graded assignment is worth 100 points and will be counted as part of your programming grade for the course.

The product that you submit must be your own work. Collaboration is allowed as specified within the syllabus for this course. For this assignment, you are not required to submit an acknowledgement statement.

Your programs must be posted to Blackboard no later than 6:00pm, Thursday, October 6th.