Comp 150 - Stats Program

Points: 50

Write a C++ program which does statistical analysis of a group of exam scores. Up to 100 scores may be entered. All scores should be validated within the range of 0 to 100, inclusive. A -1 will be entered to signify the end of data. Scores may be decimal, i.e. 85.6. After all the data has been entered, the program will produce the following statistics:

1) the number of scores
2) the maximum score
3) the minimum score
4) the mean score
5) the median score
6) the mode score
7) the standard deviation
8) the number of As, Bs, Cs, Ds and Fs using 90, 80, 70, 60 cutoffs.

The program will then write out all the scores in descending order, 10 per line and, finally, it will produce a bar chart of the scores. The dialogue, the statistics, the scores and the bar chart should follow this example, as nearly as possible, including number of decimals, spacing , and blank lines:

```
Score? 95
Score? 80
Score? 82.5
Score? 95
Score? 70
Score? 75
Score? 73
Score? 89
Score? 66
Score? 62
Score? 78
Score? 51
Score? -1

There were 12 scores entered
The maximum score was 95.0
The minimum score was 51.0
The mean score was 76.4
The median score was 76.5
The mode score was 95.0 (2)
The standard deviation was 13.2
There were 2 As, 3 Bs, 4 Cs, 2 Ds, and 1 F.

Scores in order:

 95.0  95.0  89.0  82.5  80.0  78.0  75.0  73.0  70.0  66.0
 62.0  51.0

Score chart:

      *
      *  *
   *  *  *  *
*  *  *  *  *
F  D  C  B  A
```

5 point bonus!

Turn in your program on the EASEL system under the name STATS.