Lab # 12

December 22, 2016

Task 1: Write a C program which creates an integer array of size 10. Then initializes this array with random numbers in the range 1 – 20. After that, the program reads numbers from the initialized array and graphs the information in the form of a bar chart or histogram---each number is printed, then a bar consisting of that many asterisks is printed beside the number.

An example output is shown below: **(5 marks)**

```
Element    Value    Histogram
      0       19    ******************
      1        3    ***
      2       15    ***************
      3        7    *******
      4       11    ***********
      5        9    *********
      6       13    *************
      7        5    *****
      8       17    *****************
      9        1    *
```

Task 2: Write a program which simulates rolling of a single six-sided die 6,000,000 times to test whether the random number generator actually produces random numbers. Your program must not use `if...else if` and `switch` statements. Rather, the program should use an unsigned integer array to store the occurrence frequency for each of 6 faces.

An example output is shown below: **(5 marks)**

```
Face Frequency
   1    999753
   2   1000773
   3    999600
   4    999786
   5   1000552
   6    999536
```

Grading and LMS Submission

- Make sure that the lab engineer has graded your programs until 5 pm.
- You've uploaded the C source files in Zip format over LMS until 5:30 pm.