CpSc 2120 — Goddard — Fall'17

Lab 1: Arrays and Classes

1. Consider a situation, such as a lottery, where over time certain numbers appear. Wayne wants to know how often each number appears. In C++, create a class NumberCount to count the occurrences of numbers.

   The methods that the class should have are:

   - Unique constructor takes two arguments: the minimum and maximum number that can occur.
   - void addElement(int number): increment the count of number
   - bool removeElement(int number): decrement the count of number
   - void display(): draw the results as a histogram
   - int getCount(): return the total count of numbers.

2. Also create a main function that properly exercises your class.

For example:

```
NumberCount N(1,6);
N.addElement(2); N.addElement(2); N.addElement(2); N.addElement(4);
N.addElement(7); N.addElement(3); N.removeElement(1); N.removeElement(3);
N.display();
```

produces:

```
7 Out of range; 1 not present;
1:
2:***
3:
4:*
5:
6:
```

Submit via handin.

Note that in C++, an array can be dynamically allocated using the new command:

```
int *A;   A = new int[MAX-MIN+1];
```

Your code should work on our system compiled with

```
g++ -Wall -std=c++11  NumberCount.cpp
```