CS150-01 Lab 11

Character Frequency

Date Assigned: Tuesday, November 15, 2005

Date Due: Thursday, November 17, 2005

Points: 15

Problem statement

For this lab you are to write a program that keeps track of the number of time each character appears in a file. Your program should output:

1. the ASCII value for each character

2. the character itself

3. the number of times each character appears in the file

4. a histogram of the number of times each character appears in the file

For example, if the input file contains

`the rain in spain falls mainly on the plain`

Your program should output

```
ASCII    Character    Frequency    Histogram

  97            a            5    *****

 101            e            2    **

 104            h            2    **

 105            i            5    *****

 110            n            4    ****

 114            r            1    *

 116            t            2    **
```

The easiest way to solve this problem is to keep an array of counters. Each element in the array should correspond to the count of a particular character

Important points:

1. What possible characters could their be in the file?

2. What type of input operation would you use?

3. What should the size of your array be?

4. What should the index of the array correspond to?

5. When you read in a character, how you will you decide which element of the array needs to be incremented?

6. What needs initializing?

Create a new project in Visual Studio .NET. You should name your project "11FrequencyPUNetId", where PUNetId is your own id. I would name my project "11Frequencykhoj0332". While working on a project, it should be located on the current computer you are working on (i.e. the desktop). Once you have completed developing, you should copy the project folder onto Turing.

What to turn in

When you have completed writing the program and you have verified that it works correctly, you will need to show it to the instructor or the TA.

Once you have done this you will submit the project for grading. You submit your program by placing a copy of the project folder in the "CS150-01 Lab" folder on Turing. Make sure that you also place a copy of the project folder in your own folder on Turing.