Project 5

CS 1323 Fall 2015

# Learning Objectives

1. Write a while loop. (20 points)
2. Write a conditional statement inside a loop. (10 points)
3. Create a sentinel controlled loop. (20 points)
4. Use a priming read in a sentinel controlled loop. (20 points)
5. Create a program that solves the problem described correctly. (20 points)

10 points will be awarded for the documentation of your program. That means using good names for variables, comments, proper and consistent indentation of code, and meaningful use of whitespace.

Section 10: If your program is completed and running during the laboratory, upload the program in the dropbox on Janux. Then have the teaching assistants check it to get credit for the project. If you don’t finish during the laboratory, you may upload the project code to Janux after the laboratory but before the deadline. You must attend the laboratory to get credit for the project.

Sections 1 and 995: Upload your program to the dropbox on Janux.

Due Date: September 28, 11:59 p.m. You would be very, very wise to complete this project before the first midterm examination.

# Description

Political organizations often test speeches on focus groups to see how people will react to their message. The people in the focus group are given a dial with five numbers, one to five. Bigger numbers mean more satisfaction. The dial is initially set to three. Focus group participants are told to change their dial anytime their feeling about the candidate changes.

You have been asked to write a program to analyze this data. The program should keep track of how many times each of the five numbers was selected. It should also keep track of the number of positive changes (such as 3 going to 4) or negative changes (like 3 going to 2), and number of times when the dial wasn’t changed. The different patterns of changes are useful in figuring out how people respond to the overall message. For example, a pattern with lots of positive and negative changes might mean that people are conflicted about the candidate’s message. A pattern that goes positive and stays there, with few changes, might be someone who is enamored of the candidate.

A sample run is shown below:

Enter the polling data or -1 to stop

3

Enter the polling data or -1 to stop

3

Enter the polling data or -1 to stop

4

Enter the polling data or -1 to stop

5

Enter the polling data or -1 to stop

-1

1 was chosen 0 times.

2 was chosen 0 times.

3 was chosen 2 times.

4 was chosen 1 times.

5 was chosen 1 times.

There were:

2 Positive changes

0 Negative change

2 No changes

This program uses a sentinel controlled loop. These are best implemented using a priming read, as required in the learning objectives. The sample input above uses a sentinel of -1.

One challenge to writing this program is that you have to keep track not just of the current value on the dial, but the previous value. The best way to do this is to keep a variable that holds the previous contents and update it each trip through the loop.