# Lab 5

On Cloud9, create a folder named "lab5" in your cse201 workspace. Store all your work for lab 5 in that folder. Have 2 files per excercise: the source file and the compiled program.

For all of these exercises, you will be reading all user input into a vector.

## Exercise 1

Create a program that reads all lines from standard input, then displays the lines in reverse order. Name your source file rev.cpp.

## Exercise 2

This is the formula to find the sample standard deviation of a set:

$$\sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(x_i - \bar{x})^2}$$

Create a program that displays the sample standard deviation of all real numbers read from standard input. Name your source file stddev.cpp

You can create a file containing this sample data:

Listing 1: data.txt

```
5.1 4.9 4.7 4.6 5.0 5.4 4.6 5.0 4.4 4.9 5.4 4.8 4.3
5.8 5.7 5.4 5.1 5.7 5.1 5.4 5.1 4.8 5.0 5.0 5.2 5.2
4.7 4.8 5.4 5.2 5.5 4.9 5.0 5.5 4.9 4.4 5.1 5.0 4.5
4.4 5.0 5.1 4.8 5.1 4.6 5.3 5.0
```

After compiling to stddev, you can test your program with this command:

```
./stddev < data.txt
```

Your program should display 0.353303