

# EE 251: Project 1

All programs must be emailed. Please follow the following steps

1. It is probably easier if you create a directory for the project.
2. Zip all the files (or the directory for that homework if you made one) using the following command

```
tar -czvf lastname_firstname_project1.tar.gz project1.c
```

or if you put all the files in a directory

```
tar -czvf lastname_firstname_project1.tar.gz project1
```

Don't forget to change `lastname_firstname` with your last and first name

3. Email me you .tar.gz file with EXACTLY the following as the subject

```
spring 2015 ee251 project1
```

Write a program that allows the user to sort list of float numbers and compute few statistics such as mean, standard deviation, median, mode and histogram. Your program should:

1. Allow the user to enter the filename containing the numbers
2. Create a linked list
3. Sort the numbers in ascending order
4. Compute:
  - (a) mean
  - (b) standard deviation
  - (c) mode
  - (d) median
5. Display the results to the screen
6. Store the sorted data in a file
7. Generate the histogram data assuming 10 bins and store it to a file
8. Give the user a menu as follows
  1. Enter another file
  2. Output current statistics
  3. Quit
9. Continue the program based on the user selection. If the user selects to enter a new file, merge that data with the data you already have in the linked list.

The data files are located:

[http://www.ee.nmt.edu/~elosery/spring\\_2015/ee251/data1.txt](http://www.ee.nmt.edu/~elosery/spring_2015/ee251/data1.txt)

[http://www.ee.nmt.edu/~elosery/spring\\_2015/ee251/data2.txt](http://www.ee.nmt.edu/~elosery/spring_2015/ee251/data2.txt)

Write a report describing your entire process. Your report should include:

- Introduction: describe in your own words what the project is about
- Description: explain what the different terms mean and how to compute them
- Program discussion: describe how you will go about structuring your program
- Results: present the results of your program with test data and discuss who it worked and some analysis of how efficient it is
- Conclusion: provide some remarks regarding the project and what you learned