CS2042 Homework 3


General Note: This assignment (and future ones) require you to have access to a Unix-like (Linux, Mac OS X, etc) machine. If you do not have such an operating system installed on your local machine, make sure to get a CSUG Lab account. Different systems have slightly different configurations. The main environment in this class will be GNU/Linux.

Assignment Notes:

- This assignment will mainly help give us a taste of gawk and gnuplot. Please only use GNU/Linux tools that were discussed in class.

- A plain text, comma separated value, file containing an activities log for some person (not me .. I am way too lazy for that) is available at http://www.cs.cornell.edu/courses/cs2042/2010fa/activity_log.csv

- The log has 3 columns: date, activity title, and time. Values from different columns are separated by commas.

- There are three types of activities: work, run, and farmers market.

- Each activity entry marks either the starting time of an activity or the end time. The notation used is: start <activity> and end <activity>.

- Complete the assignment by writing the commands you used in CMS, plus a simple feedback on the assignment

- **Problem#1:**- Calculate the total number of hours spent on each activity during the period in the log.

- **Problem#2:**- Write a gnuplot script to plot what that person was doing throughout the month of September (that is the period of the log). Here are the details of the graph:
  - Plot all the activities in one graph
  - The x-axis should be the date and the y-axis should be the number of hours ranging from 0 to 10.
  - There should be 3 series in the graph; one for each activity.
– Use the “lines” format to plot the work data (to get a line graph)
– Use the “boxes” format to plot the farmers market and running activities (to get something similar to a bar graph)
– Put labels on the axes.
– Give titles to the different series.

Notes and Hints:

• If you do not have gnuplot installed on can either install it locally or use the CSUG Lab machines.

• To install gnuplot you need a root password, on many modern Linux distros this is set to be your account password. You can install by following this command:
  – On openSuSE, type: sudo zypper install gnuplot
  – On Ubuntu/Debian, type: sudo apt-get install gnuplot
  – On Mac OS X, follow the instructions on one of these links:
    * http://gnuplot.darwinports.com/
    * http://www.lee-phillips.org/info/Macintosh/gnuplot.html
    * or search online or ask others in class.
  – For other GNU/Linux distributions, check online or talk to me.

• This link has useful hints on plotting date/time data with gnuplot: http://t16web.lanl.gov/Kawano/gnuplot/datetime-e.html

• This site is an excellent reference on gnuplot and it has plenty of examples: http://t16web.lanl.gov/Kawano/gnuplot/index-e.html

• Remember your two best friends are the man tool and your favorite search engine.