CS2042 Homework 3

Due: Tuesday September 28th 2010 at 11:59 PM on `http://cms.csuglab.cornell.edu`.

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

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- **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.