EE3980 Algorithms

Homework 6. Power Ranking

Due: April 13, 2019

A group of players compete with each other in a series of games. After all the games have completed, the power ranking of all the players is expected. Your assignment is to write a `C` program to create such a list.

To test your program 9 data sets are provided. They are `g1.dat` – `g9.dat`. The first line of each file specifies the number of players and the number of games played. It is then followed by the names of each player and the results of each games. The latter has the winner's name followed by a greater than sign, '>', and then the loser's name.

Your program is expected to read those file as the standard input. and then produce the power ranking. An example of the program execution is as follows.

```
$ ./hw06 < g1.dat
1 滕既
2 和弔
3 田惠
4 王青
5 強妙
6 盧凋
7 繆趙
8 凌照
8 players 12 games CPU time = 4.8049e-07 sec
```

The CPU time is the average of 100,000 repeated measurements.

Please clearly describe your approach in solving this problem and analyze the time and space complexities of your algorithm. In addition, please state your observations or conclusions of doing this homework.

Notes.

1. One executable and error-free `C` source file should be turned in. This source file should be named as `hw06.c`.

2. A `pdf` file is also needed. This report file should be named as `hw06a.pdf`.

3. Submit your `hw06.c` and `hw06a.pdf` on EE workstations using the following command:

    `$ ∼ee3980/bin/submit hw06 hw06.c hw06a.pdf`

    where `hw06` indicates homework 6.

4. Your report should be clearly written such that I can understand it. The writing, including English grammar, is part of the grading criteria.