

Self-Practice Week 6 - Search (part 2)

Applications of Search

The goal of this assignment is to use searching algorithms and data structures to solve a variety of problems.

Exercise 1 – Web Traffic Tracking

Design and implement a web traffic tracking system, that monitors what websites are being visited by what users. Your design and implementation should efficiently support the following API:

- Has user u visited website w ?
- How many times has a given user visited a given site?

Hint: maintain a symbol table of symbol tables.

Exercise 2 – IMDB Search

The Internet Movie Database (see file `3-imdbtest.txt`) lists several thousands of movie titles; for each title, it also lists the names of the actors who have performed in them (file format: one movie title per line, followed by a “/ ” forward slash-separated list of actor names). Design and implement a data structure to represent the above information and to efficiently support to the following API:

- List all performers in a given movie
- List all performers in movie m in alphabetical order

Expand your design to further support the following API:

- Did actor a perform in movie m ?
- In how many movies did actor a perform?
- Return all movies in which actor a performed