# **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