

Objective: To gain experience using hashing by implementing a movie search.

To start the project: Download hw5.zip file and extract it. The hw5 directory contains the lab 10 dictionary implementations (dictionary.py and hashtable.py) which you can use.

The Assignment: Professor Bob is a movie buff, but like most professors he is absent-minded. He has a text file `movieData.txt` which contains the names and year(s) a movie was made.

```
...
A Tailor Made Man <1931>
A Tale of Five Cities <1951>
A Tale of Two Cities <1935> <1958> <1980> <1984>
A Talent for Murder <1984>
A Talk in the Dark <1992>
A Tall Man Executes a Jig by Irving Layton <1986>
...
```

Bob would like to be able to interactively search for all movies containing specified word(s) in the title.

The main menu should contain the following options:

- start a new search - allows the user to enter one or more words in the title to search. This should report the number of movies that match
- refine the search - allows the user to enter one or more additional words to refine the search. This should report the number of movies that match
- display the results of the current search: complete movie titles and the year(s) they were made
- print the results of the current search to a specified file

At the start of the program, you should create an empty (hash table based) dictionary and fill it by reading movie entries from the `movieData.txt` file. Each dictionary entry will have a word for its key and a list of movie entries containing that word in their titles.

On a search, use the longest word to search the dictionary for a list of movies. Use this list to find the matches if other search words were entered.

Implement AND fully test the your movie-search program. Part of your grade will be determined by how robust your program runs (i.e., does not crash) and how user-friendly/intuitive your program is to use.

Submit all necessary files (dictionary.py, hashtable.py, etc.) with your movie-search program file(s) as a single zipped file (called hw5.zip) electronically at

https://www.cs.uni.edu/~schafer/submit/which_course.cgi