

BIL 105E – Introduction to Scientific and Engineering Computing (C)

Spring 2016-2017

Homework 6 Movie Database

Assignment Date: 28.04.2017

Due Date: 08.04.2017 - 23:59

Duration 10 days

In this homework, you will implement a movie database for users, and allow the user perform the following instructions:

- Insert a Movie
- Search Movies
- Recommend Top Movies

For this homework you must use the “struct” data type for movies and books.

A movie includes five properties, namely

- Movie name
- Movie year
- Rating
- Country
- Is inspired from book (If yes, you include the properties of a book as subproperties.)
 - Book name
 - Book writer
 - Book year

You can add the movies from the table below. All properties can be found on the table.

No	Film name	Film year	Country	Rating	Adapted from_book	Book name	Book writer	Book year
1	The Notebook	2004	USA	7,9	YES	The Notebook	Nicholas Sparks	1996
2	Inception	2010	USA / UK	8,8	NO			
3	Forrest Gump	1994	USA	8,8	YES	Forrest Gump	Winston Groom	1986
4	Seven	1995	USA	8,6	NO			
5	P.S. I Love You	2007	USA	7,1	YES	P.S. I Love You	Cecelia Ahern	2004
6	Saving Private Ryan	1998	USA	8,6	NO			

7	Fight club	1999	USA/ Germany	8,8	YES	Fight club	Chuck Palahniuk	1996
8	The Usual Suspects	1995	USA/ Germany	8,6	NO			
9	The Host	2013	USA/ Switzerland	5,9	YES	The Host	Stephenie Meyer	2008
10	Spirited Away	2001	Japan	8,6	NO			
11	Before I go to sleep	2014	UK/USA/France	6,3	YES	Before I go to sleep	S.J. Watson	2011
12	The Shawshank Redemption	1994	USA	9,3	YES	Different Seasons	Stephen King	1982
13	The Godfather	1972	USA	9,2	NO			
14	Pride & Prejudice	2005	France/UK/USA	7,8	YES	Pride & Prejudice	Jane Austen	1813
15	The Dark Knight	2008	USA/UK	9,0	NO			
16	One Flew Over The Cuckoo's Nest	1975	USA	8,7	YES	One Flew Over the Cuckoo's Nest	Ken Kesey	1972
17	12 Angry Men	1957	USA	8,9	NO			
18	It is a wonderful Life	1946	USA	8,6	YES	The Greatest Gift	Philip Van Doren Stern	1939
19	Interstellar	2014	USA/UK/ Canada	8,6	NO			
20	The Green Mile	1999	USA	8,5	YES	The Green Mile	Stephen King	1996
21	Babam ve oglum	2005	Turkey	8,6	NO			
22	3 Idiots	2009	India	8,4	YES	Five Point Someone	Chetan Bhagat	2004
23	Life is Beautiful	1997	Italy	8,6	NO			
24	The Grand Budapest Hotel	2014	USA/ Germany	8,1	NO			
25	A Beautiful Mind	2001	USA	8,2	YES	A Beautiful Mind	Sylvia Nasar	1998

Your program runs and asks the user to select one of the following options: insertion, searching and recommendation.

Insertion: This option is used to add movies. The user can insert any number of movies.

Searching: This option is used to search for movie(s) based on a text entered by the user. The user enters at least 3 characters, and your program will search the movies including these characters and list all movies that you found by searching.

Recommendation: This option is used to present top K movies based on their ranks. The user enters a key number (K) indicating the number of movies that will be listed to the console. Your program should sort the movies based on their ranking and show the user top K sorted movies.

Your program should terminate with the **Exit** option. See the sample execution below.

Please note that exceptional cases need to be handled by you, e.g. entering incomplete details for a movie, entering an existing movie, case insensitive search etc. You can utilize *string* library functions if needed.

Sample Execution:

Welcome to Movie Database!

Which action do you want:

- 1-Insert a movie**
- 2- Search a movie**
- 3- Recommend top movies**
- 4- Exit**

1

Insert a movie with its details (for exit please enter -1): The Notebook,2004,USA,7.9, Yes, The Notebook, Nicholas Sparks,1996

The Notebook was inserted.

Insert a movie with its details (for exit please enter -1): Life is Beautiful,1997,Italy,8.6, NO
Life is Beautiful was inserted.

Insert a movie details if you exit please enter -1: -1

Which action do you want:

- 1-Insert a movie**
- 2- Search a movie**
- 3- Recommend top movies**
- 4 -Exit**

2

Please Enter at least 3 characters for searching the database: life

The movies including life:

- | | | | | | | | |
|----|------------------------|------|-------|-----|-----|-------------------|------------|
| 1. | It is a wonderful Life | 1946 | USA | 8.6 | YES | The Greatest Gift | Philip Van |
| | Doren Stern | 1939 | | | | | |
| 2. | Life is Beautiful | 1997 | Italy | 8.6 | NO | | |

Which action do you want:

- 1-Insert a movie
- 2- Search a movie
- 3- Recommend top movies
- 4- Exit

3

How many movies will be listed? 5

We recommed you top 5 movies:

- 1. The Shawshank Redemption 9.3
- 2. The Godfather 9.2
- 3. The Dark Knight 9.0
- 4. 12 Angry Men 8.9
- 5. Inception 8.8

Which action do you want:

- 1-Insert a movie
- 2- Search a movie
- 3- Recommend top movies
- 4- Exit

4

Goodbye

All the assignments are considered individual assignments and you are expected to do it by yourself. Any form of plagiarism, even partial, will not be tolerated. It is subject to serious disciplinary actions. Note that professionals help in any form or shape is considered as an act of plagiarism.