

100 pts

Name: _____

Class Day / Time: _____

Due Date: _____

Assignment #4 – Searching Linked Lists

For this assignment you will need to build upon Assignment #3. You will need to demo this assignment in lab. I will NOT grade any assignment that I have not tested! Because of this, there will be NO EXTENSIONS on this assignment → so please start early!

Modify assignment #3 as follows:

- 1 – allow the user to specify an output file (as well as the input file). Allow the user the option to use a default file.
- 2 – Display a menu (see the screen output for specifics) → loop until the user enters 0.
- 3 – the user should be able to output the entire list (like in Assignment #3, except the format for the output has changed) → write a new function that outputs each movie one line at a time (not including the movie plot) → see the output file for an example.
- 4 – the user should be able to **search for a movie by title**.
The title should output all the information about the movie formatted like Assignment #3.
Be sure to incorporate a word wrap function.
→ See the sample output file.
- 5 – the user should be able to search for a movie by **genre, actor, rating** or **year**.
All of these searches will be formatted similarly → see the output file for an example.
→ For **genre**, the search should output all the movies that have that genre specified for either the genre or the alternate genre.
→ For **actor**, the search should output all of the movies that have the actor appear either in a leading or supporting role.
→ For **year**, the search should output all movies that were released that year.

Other requirements

- USE AN **ENUMERATED TYPE** FOR THE MENU OPTIONS.
- The searches should be performed using **one** search function.
- Use appropriate types within the struct (i.e. year and rating should be numerical values → not strings).
- Use appropriate selection statements to specify the different code segments based on the menu option selected.
- You will need to add several functions for this assignment – be sure you are using functions properly → keep them small! Print Heading should output to the screen and the file.

Some suggestions:

- Code Incrementally → Coding will be easier if you code 1 function at a time → and test each function when you complete it.
- Use detailed cout statements or the debugger in eclipse to trace variables.
- You may want to start testing with the smaller input file provided for assignment #3.

Turn in (IN THIS ORDER)

1. The first page of this lab
2. Your header file.
3. a listing of main.cpp (conforming to style discussed in class)
4. a listing of your functions in a separate file from main.cpp.
5. Output File (after running the test code below) → please output in landscape mode – cut and paste into office and format the margins / font size as necessary to keep it on one line (see the sample output). **Print only a few lines for the output list and searches for genre, actor, and year. This is to save paper.** During the demo, we will review the entire output file with you.

Input File: a link to the input file is provided on the class website.

Output File: a link to the sample output file is provided on the class website. Notice that each search appends to the file (is added onto the bottom).

NOTE: this is not the entire output file... just a portion is provided as an example.

Example SCREEN INPUT/OUTPUT

```
Which input file would you like to use(type d for default file)? d
Which output file would you like to use(type d for default file)? d
```

```
DVD MENU OPTIONS
```

```
1 - Output Entire List
2 - Title Search
3 - Genre Search
4 - Actor Search
5 - Year Search
6 - Rating Search (0-9)
0 - EXIT
```

```
Enter an option (0 to exit): 1
```

```
Listing all movies!
```

```
<redisplay menu>
```

```
Enter an option (0 to exit): 2
```

```
Which title are you looking for? Men in Black
```

```
Searching for the title Men in Black
Found the movie Men in Black!
```

```
<redisplay menu>
```

```
Enter an option (0 to exit): 2
```

```
Which title are you looking for? Shawshank Redemption
```

```
Searching for the title Shawshank Redemption
Sorr., the movie "Shawshank Redemption" was not found.
```

```
<redisplay menu>
Enter an option (0 to exit): 3

Which genre are you looking for? Romantic Comedy

Searching for the genre Romantic Comedy
Found 45 movies for the genre Romantic Comedy!

<redisplay menu>
Enter an option (0 to exit): 3

Which genre are you looking for? Horror

Searching for the genre Horror
Sorry, no movies for the genre, Horror were found.

<redisplay menu>
Enter an option (0 to exit): 4

Which actor are you looking for? Anthony Hopkins

Searching for the actor Anthony Hopkins
Found 6 movies for the actor Anthony Hopkins!

Enter an option (0 to exit): 4

Which actor are you looking for? Don Johnson

Searching for the actor Don Johnson
Sorry, no movies for the actor, Don Johnson were found.

<redisplay menu>
Enter an option (0 to exit): 5

Which year are you looking for? 2007

Searching for the year
Found 53 movies for the year 2007!

<redisplay menu>
Enter an option (0 to exit): 5

Which year are you looking for? 1800

**** The number 1800 is an invalid entry ****
**** Please input a number between 1878 and 3000 ****

Which year are you looking for? 5

**** The number 5 is an invalid entry ****
**** Please input a number between 1878 and 3000 ****

Which year are you looking for? 3001

**** The number 3001 is an invalid entry ****
**** Please input a number between 1878 and 3000 ****
```

```
Which year are you looking for? a

**** Please input a NUMBER between 1878 and 3000 ****

Which year are you looking for? 1900

Searching for the year
Sorry, no movies for the year, 1900 were found.

<redisplay menu>
Enter an option (0 to exit): 6

Which rating are you looking for? -1

**** The number -1 is an invalid entry      ****
**** Please input a number between 0 and 9 ****

Which rating are you looking for? 10

**** The number 10 is an invalid entry      ****
**** Please input a number between 0 and 9 ****

Which rating are you looking for? z
**** Please input a NUMBER between 0 and 9 ****

Which rating are you looking for? 8

Searching for the rating
Found 137 movies for the rating 8!

<redisplay menu>
Enter an option (0 to exit): -1

**** The number -1 is an invalid entry      ****
**** Please input a number between 0 and 6 ****

<redisplay menu>
Enter an option (0 to exit): 7

**** The number 7 is an invalid entry      ****
**** Please input a number between 0 and 6 ****

<redisplay menu>
Enter an option (0 to exit): a
**** Please input a NUMBER between 0 and 6 ****

<redisplay menu>
Enter an option (0 to exit): 0
```