

Assignment #3 – OOP: My Favourite Movies

Due Date: _____

For this assignment, you will be writing a Java program that reads in a file that contains a list of movies, and then allow the user to find movie information based on the search criteria.

In the input file, each line contains 3 pieces of information:

- Rating of the movie – an integer or real number followed by % sign (ie. 43.8%)
- Movie title – any number of words
- Genre –always one word

Your program should allow the user to perform two actions:

1. It should repeatedly ask the user for a movie title and display the stats, until the user types in the word “exit”.

Sample output:

```
Movie title: Captain Marvel
Genre: Action
Rating: 78.0%
Ranking: 2 out of 15 (← notice the output includes the total # of entries)
```

2. It should also allow the user to enter in a genre, and the program will list all the movies and their information of that genre, IN ALPHABETICAL order of the title.
The output would be similar to above, except there may be more than one movie listed.

Extra Hints and Comments:

1. The file will be given in the following format:
Rating Title Genre
e.g. 97.1% The Social Network Drama
2. You should create a new class to keep track of the movie information (rating, title genre.)
 - To make this simpler, we will assume that the `rating` and the `genre` fields can be duplicated, but the `title` field is always unique. In other words, each movie occurs only ONCE in the movie file.
 - The `genre` field is always one word.
3. Use `ArrayLists` to implement your list of objects. DO NOT use `Arrays`.
4. You must use Binary Search to search for movie titles and genres -- -- not allowed to use loops to search through the list of names and powers.
5. Make this efficient – minimize the amount of sorting that needs to be done!
6. Remember to do all the proper error checks. For example, if the title entered in does not exist, capital genre should be same as lower case, etc.
7. There WILL be improper inputs in the input file. The ONLY time the line should be skipped, is if at least one piece of information is missing.

BONUS:

(+1 mark)

- Allow for duplicate movie titles*
- When title/genre is searched for, you will ask the user how they want the result to be sorted. It can be sorted alphabetically by genre (if title is searched) or title (if genre is searched), or by ranking from highest to lowest.*