Movie Management System

Group Project 1A for CPT-287

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The project our group decided to create was project 1A – Movie Management System. The basic premise for this project was to create two lists and store movies in each. One of the lists was meant to be used to store movies coming to the theater while the other stored movies that were already showing at the theater. After the movies were stored into their respective list, the user of the program would be prompted to select a function based on a series of options provided by a menu in the console. Once the user selected an option and completed it, they would be further prompted by the menu until they opted to quit out of the program.

Our project design required the creation of a class to store the movies. The movie class included five fields: movieName, releaseDate, description, receiveDate, and status. Furthermore, the design of our project featured two types of data structures: Array List and Iterator. Two array lists were created for the project. As previously stated, one list was used to store “coming” movies and the other stored “showing” movies. The movies were read off an input file and added to a list based on their status, of which they were either “RECEIVED” (“coming” list) or “RELEASED” (“showing” list). Iterators were used to iterate through each individual array list as opposed to using the array lists’ indexes. The iterators were used in conjunction with while loops via the “hasNext()” method, and were used to return objects from each list with the “next()” method and remove items from the list with the “remove()” method.

Once the lists were populated with their respective movies, the user was prompted by a menu to select an option to interact with the list. The options presented were to display the lists(O(n)), add a movie(O(1)), start showing movies with a certain release date(O(n2)), edit a movie(O(n)), count the number of “coming” movies before a certain release date(O(n)), save the changes made to the original input file(O(n)), and to exit the program.

Each team member took part in the coding for the project. Adrian Ronchetto created the code for the initial reading in of the input files, the code for adding in more movies, created the movie class, and created the input file for the program to use. In addition, he was the primary person to learn about the Data class and took care of its implementation and formatting. Angel Hristov learned how to use iterators for array lists which helped the other members use them, implemented the iterators into the program, created the code for counting the movies before a given date, created the menu for the program, and formed the code to not accept invalid dates. Isaac Hodge created the code for the edit method, the code to begin showing movies of a certain date, the code to save the changes made to the original input file, compiled the team’s code and made it work together, and wrote the project report.

The system could be improved in a number of ways. First, there is a very high likelihood that the code created is not as efficient as it could be. For one example, the code to move a movie from one list to another could most likely be reduced from O(n2) down to O(n). Given more time, a solution could most likely be found. The amount of lines that either create or reset an iterator could also be reduced most likely. One final change that could be would be to make sure all the menu options available were created as methods outside the main function. This could assist in overall organization and readability of the code.

Test Case 1

Input: The Thing | 06/25/1982 | Group of arctic researchers are attacked by thing that is not a dog | 06/24/1982 | RELEASED

Venom 2 | 06/25/2021 | CGI Tom Hardy fights Woody Harrelson in a crappy wig | 06/24/2021 | RECEIVED

The Ritual | 02/09/2018 | Group of college friends backpacking across Eastern Europe discover a monster with wee baby arms in the woods | 02/08/2018 | RELEASED

The Lord of the Rings | 12/19/2001 | A group of adventurers team up to get rid of an evil piece of jewelry | 12/18/2001 | RELEASED

Twilight | 11/21/2008 | 108-year-old virgin falls in love with teenage girl | 11/20/2008 | RELEASED

Little Nicky | 11/10/2000 | Adam SandlerÕs only good film | 11/09/2000 | RELEASED

The Invisible Man | 11/13/1933 | Naked invisible man terrorizes town | 11/12/1933 | RELEASED

Kung Pow 2: Fists of Fury | 01/01/111y | I think this movie was cancelled or something | 11/12/2013 | RECEIVED

Venom 2 | 06/25/2021 | CGI Tom Hardy fights Woody Harrelson in a crappy wig | 06/24/2021 | RECEIVED

Dune | 10/1/2021 | Star Wars for goths, the remake | 09/29/2021 | RECEIVED

Avatar 2 | 12/16/2022 | The sequel to Dances With Wolves in space | 12/15/2022 | RECEIVED

The Batman | 03/4/2022 | Yet another Batman movie | 03/03/2022 | RECEIVED

Dune | 12/14/1984 | "Star Wars but for goths" | 12/13/1984 | RELEASED

Operations Used: Display was used first to ensure the movies had been brought in correctly. The movie “Joker” was added using the add function with the respective data fields entered. “The Batman” was edited using the edit function, which changed its release date from 03/4/2022 to 04/22/20/22. Display was once again used to check for the changes. The changes were then saved to the input file, and finally the program was exited.

Expected output: All the operations that were used were as intended. “Joker” was added, “The Batman” had its release date edited properly, and the changes were saved to the text file.

(The results are shown by the input1 and output1 text files on Github)

Test Case 2

Input: Glass | 01/18/2019 | Drama/Fantasy | 01/12/2019 | RELEASED

Miss Bala | 02/01/2019 | Mystery/Thriller | 01/17/2019 | RECEIVED

Operations Used: Display, again, was used to confirm the movies were properly brought in. Both movies were properly assigned to their respective list. Next, the operation to count the total movies before a given release date in the “coming” list was used. The date given was 2/03/2020, which is after both “Glass” and “Miss Bala”. The total counted was 1, which is correct as Glass is in the “showing” list. Next, “Miss Bala’s” description was edited to be only “Mystery”. Then, the operation to begin showing movies of a certain release date was used. The date given was 02/01/2019, which is the release date for “Miss Bala”. With another use of display, Miss Bala was then in the “showing” list along with Glass, and its description was “Mystery” rather than “Mystery/Thriller”. The changes were saved, and the program was exited.

Expected Output: All the operations that were used were as intended. “Miss Bala” had its description changed, and it’s status was changed to “RELEASED”.

(The results are shown by the input2 and output2 text files on Github)

UML Chart