Project Description - DSA

short line

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# **A Netflix Movies Dataset Based Term Project**

Description:

There is a .csv file containing a dataset of 6235 movies and tv shows. For each of the 6235 movies and tv shows, details of 12 parameters have been provided like title, genre(listed\_in), directors, cast, country etc. We will use this dataset to create a database using various data structures studied in the class. One of our first tasks is to write a parser that extracts information from the csv file for each of the movies and tv shows.

**----------------------------------------------------Shows---------------------------------------------------**

A **Shows** Class that should have two linked lists:

One linked list for type **tv shows:**

a) Store data of all the 11 fields for a tv show.

b) Remember, some of the fields like cast, director, type, country etc. in the **Shows** class may contain more than one entry. Such entries should be stored in a suitable data structure such as an array-list or a linked list. Similarly type of a movie are to be stored in a separate data structure.

Second linked list for type **movies:**

a) Store data of all the 11 fields for movies.

b) Remember, some of the fields like cast, director, type, country etc. in the **Shows** class may contain more than one entry. Such entries should be stored in a suitable data structure such as an array-list or a linked list. Similarly types of a movie are to be stored in a separate data structure. It is better to use enums.

--------------------------------------------------**ShowsNode class---------------------------------**

We will store all the titles of movies and tv shows given in the dataset in a suitable data structure. For doing so, we shall need to define a ShowsNode class.

Class **ShowsNode**

{

Shows data;

ShowsNode \*next;

ShowsNode \*prev; // in case you use a doubly linked list

}

**------------------------------------------ ShowsList class--------------------------------------**

The ShowsList class should provide the following functionalities:

a. A method that . reads the .csv file one line at a time.

b. Creates an object of the ShowsNode class for each movie and tv shows.

c. Automatically inserts all the entries of that line in various fields of the data part in the ShowsNode object. Note that the data field is of type Shows.

d. Finally, insert the newly created ShowsNode object in the list.

**------------------------------------------ Director Class--------------------------------------**

**DirectorNode** class which should store

a) Director’s name

b) A list of movies or tv shows he has directed.

**Hint:** store a list of pointers to the objects of the movie nodes a director has directed.

c) Provide functionality to Search directors by name. The search should return the name of directors along with the details of the movies they have directed.

**------------------------------------------ Cast Class--------------------------------------**

**Cast Node** class which should store:

a) The Name of an actor

b) A list of the shows in which he/she has acted. Remember, shows’ data is already stored in a list of type ShowsNode class. Thus, the list of cast’s movies should contain only pointers to the ShowsNodes in which he/she has acted.

# **FUNCTIONS:**

**1.** **Functions related to Shows**

|  |  |
| --- | --- |
| **Functions** | **Description of Functions** |
| **Search and print shows based on Type(movie) and Tv Show :** | *Searches shows on the basis of type either tv show or movie specified, if movies are found based on a type specified, then it will print all details of a particular show like date, genre, description etc.* |
| **Search based on Title:** | *Searches shows on the basis of title, if movies are found based on a name of show specified, then it will print all details of a particular show like date, genre, description etc.* |
| **Search and print on the basis of release year** | *Searches shows on the basis of release year, if movies are found based on a release year specified, then it will print all details of a particular show like date, genre, description etc.* |
| **Search and print based on rating** | *Searches show on the basis of rating. Prints movies from highest to lowest rating.* |
| **Sort on the basis of title separately for tv shows and movies** | *If the user mentioned the type as tv show, all titles of this particular type will be displayed similarly for movies type.* |
| **Sort on the basis of title, year.** | *If the user specifies the type and wants to sort the shows on the basis of title and year then this function will sort the movies and tv shows according to year and title separately and can also sort combined tv shows and movies according to year & title.* |
| **Delete a specific movie on the basis of title** | *If the user wants to delete the data of a specific show by just entering the title of the movie or the year of the movie.* |
| **Insert a new data (entire column)** | *If the user wants to add the data of a new show in the list then he/she can add it.* |

**2.** **Functions related to Director**

|  |  |
| --- | --- |
| **Search director** | *Prints all movies directed by a particular director* |
| **Print director on the basis of genre** | *Print name of all directors based on the genre specified at the time of input* |
| **Print all the shows of the director through a specific show** | *If the user wants to know all the shows of a specific director whose one show is known to him then by the name of the show, he can get all the shows of that director who directed this show.* |
| **Search director who likes to direct a specific genre** | *Print the director names who likes to direct a specific genre if the user types a genre then it prints the list of directors who mostly directed that type of genre shows.* |

**3. Functions related to Cast**

|  |  |
| --- | --- |
| **Print cast on the basis of show title** | *If the user wants to print the cast of a show then by entering the name of the show he can get the cast list.* |
| **Print cast on the basis of show releasing year** | *If the user wants to get the cast names of a specific show by entering the releasing year of that show then it prints all the names of movies with their cast in that specific year.* |
| **Print cast on the basis of show rating** | *If the user wants to get the cast name of a specific show by entering the rating of that show then it prints all the names of that show with their cast with specific rating mentioned by the user.* |