HACETTEPE UNIVERSITY

Computer Science

A REPORT

ON

Programming Assignment 2

Movie Database System

SUBMITTED BY

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Chapter 1

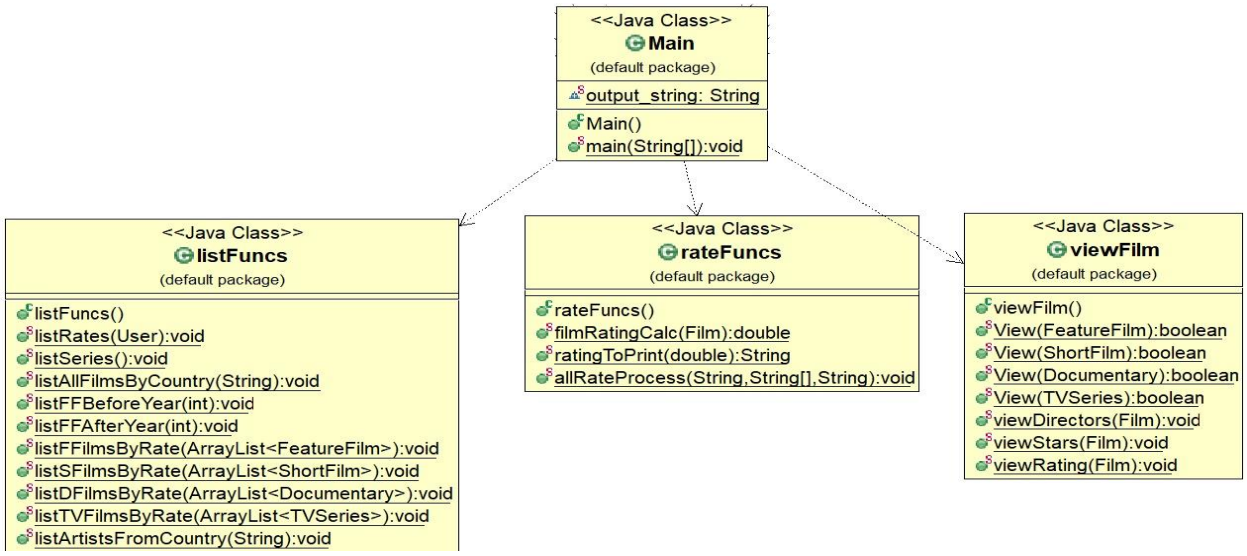
PROBLEM DEFINITION

In this assignment, we are supposed to develop a simple Movie Database System like IMDB. The program will be able to vote films by users, view films with their features, shows rates by given user, editing and removing voted rates, listing films artists in desired order and filtered way and so many functions. While doing these ,we are responsible for using inheritance and access modifiers in Java. The code will process 3 different data input files which contains peoples, films and commands. The program will generate results of commands from commands input file. Then prints the output on given name output file.

Chapter 2

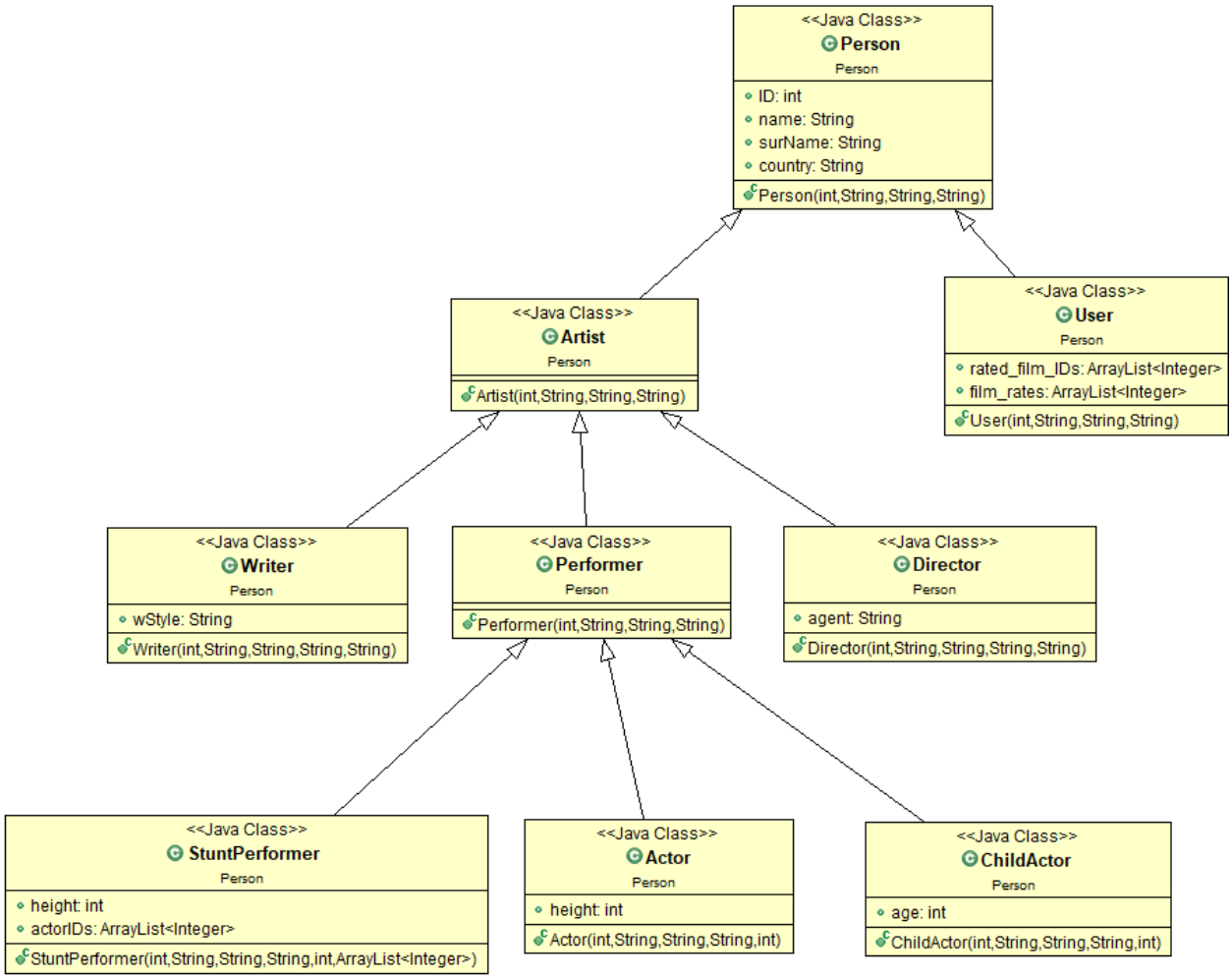
UML CLASS DIAGRAM

FIRST PART OF THE DIAGRAM



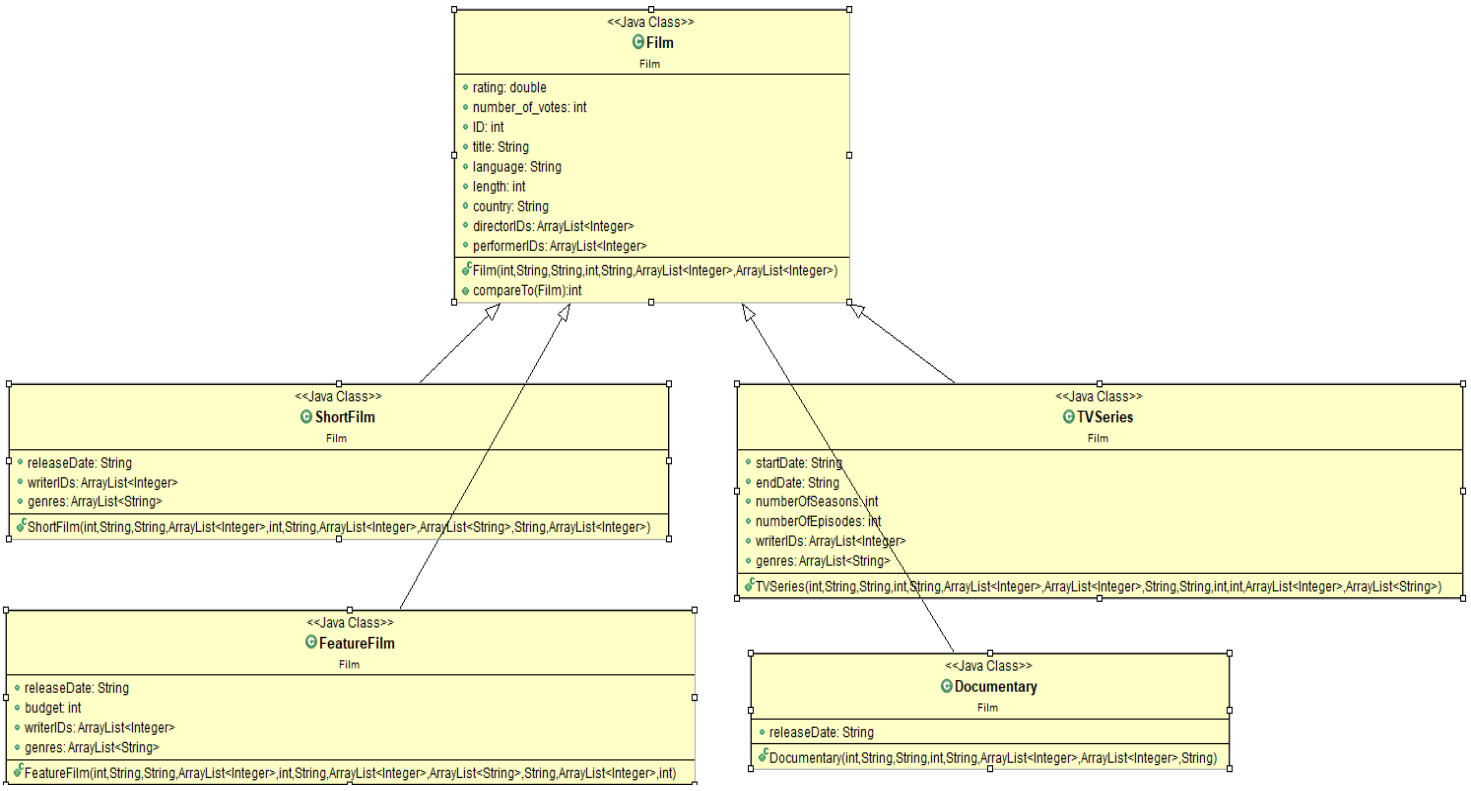
First part of the UML diagram contains Main class , listFuncs class, rateFuncs class and viewFilm class. Main class contains functions that read all files and create objects according to the file contents(all given film and person objects) then the code executes appropriate functions according to commands file one by one. Also, main class contains static object arraylists to store all type of objects. The required functions are executed according to the orders received from the command file. The bottom three classes below the main class includes different functions to execute commands. With these functions, we get rid of code redundancy.

SECOND PART OF THE DIAGRAM



In this part of the diagram we have Person as a master class has common attributes name, surname, country and a unique id. A Person could be either Artist or User. Each User has rated_film_IDs and film_rates attributes beside common Person attributes that every person has. There are three kinds of Artist: Writer, Performer and Director. Each Director has an agent where he/she works attribute beside master class(Artist class) attributes. Each Writer has a writing style/type beside master class(Artist class) attributes. There are also three types of Performers which are Actor, ChildActor and StuntPerformer. Each Actor has a height attribute beside master class(Performer) attributes. Each ChildActor has an age attribute beside master class(Performer) attributes and finally each StuntPerformer has a height and real actors' ids beside master class(Performer) attributes.

THIRD PART OF THE DIAGRAM



There are four types of films in the system: Feature Film, Short Film, Documentary and TV Series. Each film (Feature Film, Short Film, Documentary and TV Series) has a rating score which calculated from users' average rating scores for that film. Number of votes ,unique film id, film title, language, length, country, director IDs of a film as an Integer Arraylist and performer IDs also as an Integer Arraylist are common in all film types.

- Feature Films have a release date, budget, writer IDs of movie as an Integer Arraylist and film genres as a String Arraylist in addition to the common data.

- A Short Film has a release date, writerIDs as an Integer Arraylist and genres as a String Arraylist in addition to the common data.

- Documentaries have only a release date in addition to the common film data.

- TV Series have start date and end date of series, number of seasons, number of episodes, writer IDs of series as an Integer Arraylist and series genres as a String Arraylist in addition to the common film data.

Chapter 3

CODE IMPLEMENTING

Firstly, I initialized static arraylists to store all objects and can reach whenever I want. My main class includes 4 try-catch blocks to file operations.

First one is for read and initialize objects of people (person, user, artist, writer, performer, director, actor, stunt performer, child actor) with switch-case in while loop until the whole file is read. I create an object according to given line of file in loop and add that to appropriate object arraylist.

Second one is also for read and initialize objects of film(Film, Feature Film, Short Film, Documentary, TV Series) with switch case in wile loop until the whole file is read. And in every loop, I create an object according to given line of file and add that to appropriate object arraylist. The first two files are read in the same way.

Most important try-catch block is where command file read. According to every line of command file, the program enters the appropriate case according to incoming command and execute the steps of that command. There are 12 type of command in file.

- If the program needs to execute RATE, EDIT or REMOVE case, goes to the allRateProcess function. Then this function can make all rate operation and re-calculate film rating and add new or edited votes to user attribute.

- If the program needs to execute ADD case, just initialized new Feature Film object and add that to the feature film objects arraylist same as initialized from films text file in second try-catch.

- If the program needs to execute VIEWFILM case, goes to the View functions by take film object as a parameter. In that function all details of a film are printed to output file.

- If the program needs to execute LIST USER RATES case, goes to the listRates function. That function prints all film titles and desired attributes which he/she rated.

- If the program needs to execute LIST FILM SERIES case, goes to the listSeries function. In that function every series will be printed with desired attributes.

- If the program needs to execute LIST FILMS BY COUNTRY case, goes to the listAllFilmsByCountry function. In that function every film from given country will be printed with desired attributes.

- If the program needs to execute LIST FEATUREFILMS BEFORE case, goes to the listFFBeforeYear function. Or if takes LIST FEATUREFILMS AFTER as a command, goes to the listFFAfterYear function. In these functions, the films which before or after given year value, their title and desired attributes will be printed.

- If the program needs to execute FILMS BY RATE case, then 4 functions(listFFilmsByRate, listSFilmsByRate, listDFilmsByRate, listTVFilmsByRate) will be executed because each function take an arraylist of each category as a parameter and these arraylists will be ordered by rating points and printed films in these arraylists in descending order.

- If the program needs to execute ARTISTS FROM case, goes to the listArtistsFromCountry function. In that function every artist from given country will be printed with desired attributes.

And finally, all of the input that stored in the output_string variable will be printed to the output text file.

Chapter 4

REFERENCES

- https://stackoverflow.com/