

Movies

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Problem statement section

An application is managing data from a database-like table of movies. It is also able to save a current model, sort and filter it by several parameters, open the dataset from a file and count a number of movies represented in the table. I have used **Qt metaobject** system and **Qt Widgets** library to implement it all.

Individual problem specification

Movies

The dataset contains information about different movies. Fields you should work with are *Title*, *Genre*, *Director*, *Actors*, *Year*, *Runtime*, *Rating*.

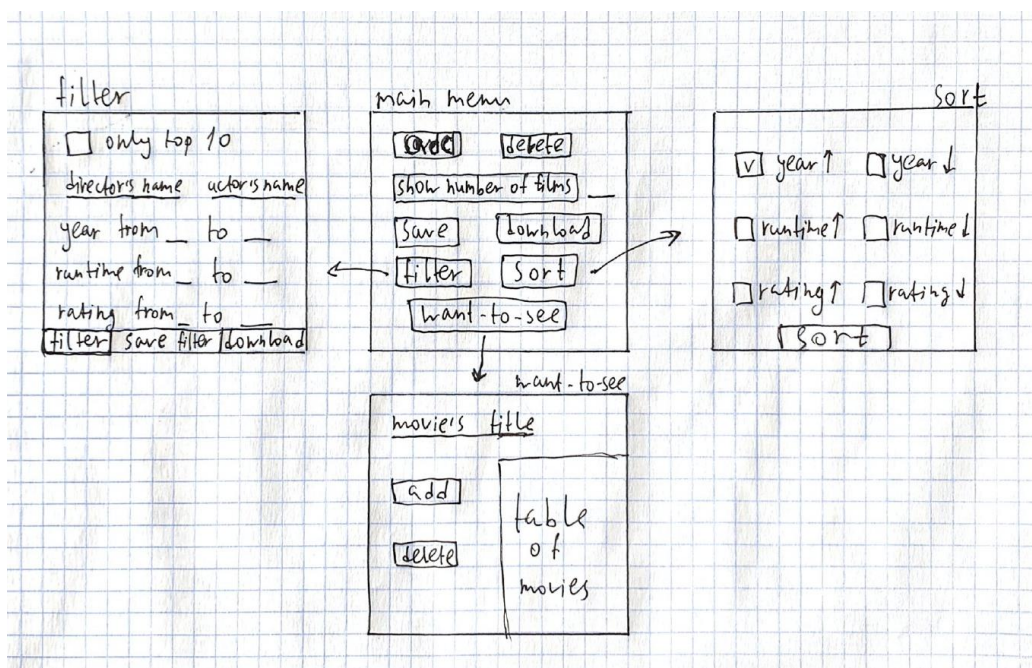
Basic features:

1. Adding, deleting and editing information about movies.
2. Showing the total number of movies in a list and updating it.
3. Saving the list of movies to a file and downloading it from a file.

Additional features:

1. Filtering (by genre, directors's name, actors's name, range of years of production, runtime and rating). You should only see information about movies that satisfies these conditions. If you don't want to filter by any of these fields, you should leave the input line of this parameter empty. Also make a checkbox that automatically shows only top 10 movies(by rating) with the given filter.
2. Saving and downloading from a file a current filter.
3. Sorting by year of production, runtime or rating.
4. Creating additional list of want-to-see movies, where you can add a film by its title. It should also be possible to delete movies from this list.

Dataset from Kaggle <https://www.kaggle.com/PromptCloudHQ/imdb-data>

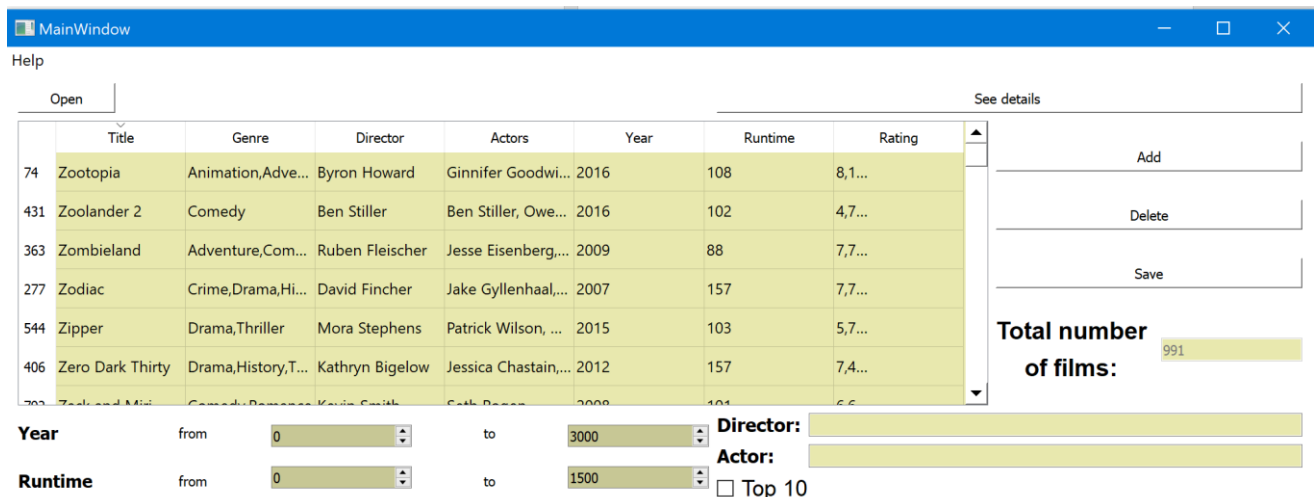


Implementation details section

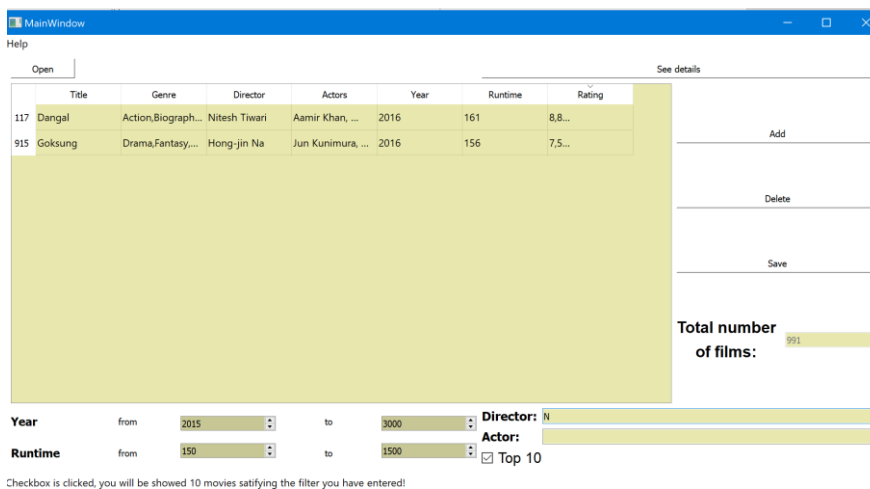
The approaches and tools developed to solve the problem:

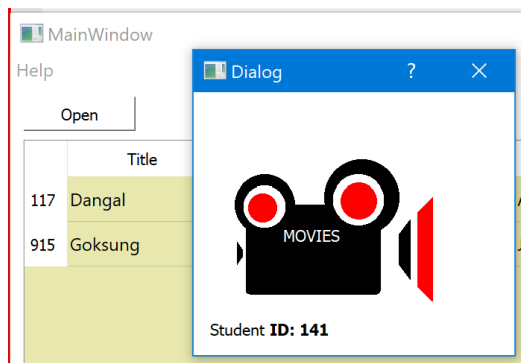
- Created the structure Movies with class **MovieData** inherited from the **QObject**;
- Used **QStandardItemModel** to work with the **QTableView** class and arrange data in the model;
- Developed the class **MyProxiModel** inherited from **QSortFilterProxyModel** class to set my own filter by runtime, year, director and actors columns simultaneously. Each of the column in the model is sorted in alphabetical and ascending/descending order;
- Created the logo using **QPainter** library;
- Built up the class for additional window **Addwindow** to add a new record into the **tableView** model;
- Implemented "Master-Detail" UI pattern.
- URL address of the repository: <https://github.com/Anastation67/dsba-itop2021-hw1>

The interface of the program after opening data looks like:

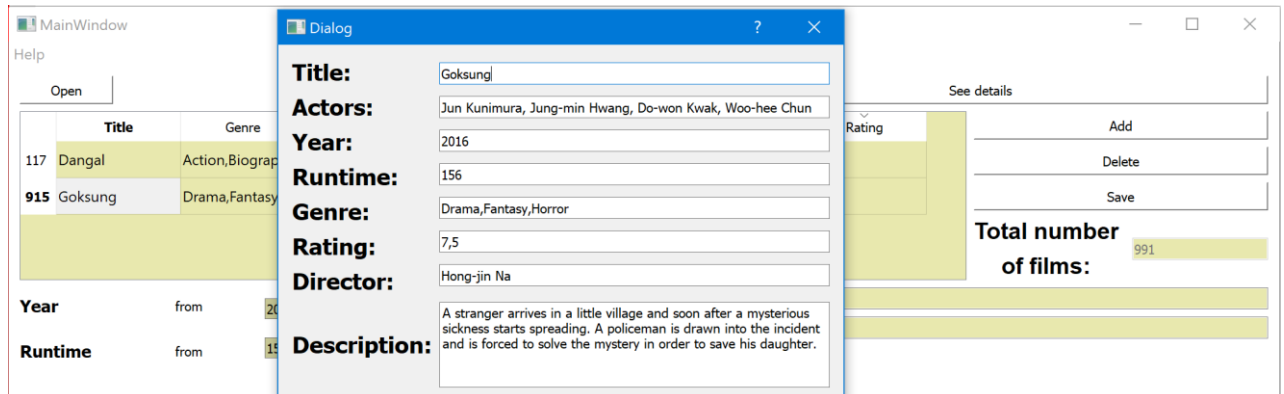


Filtering data:

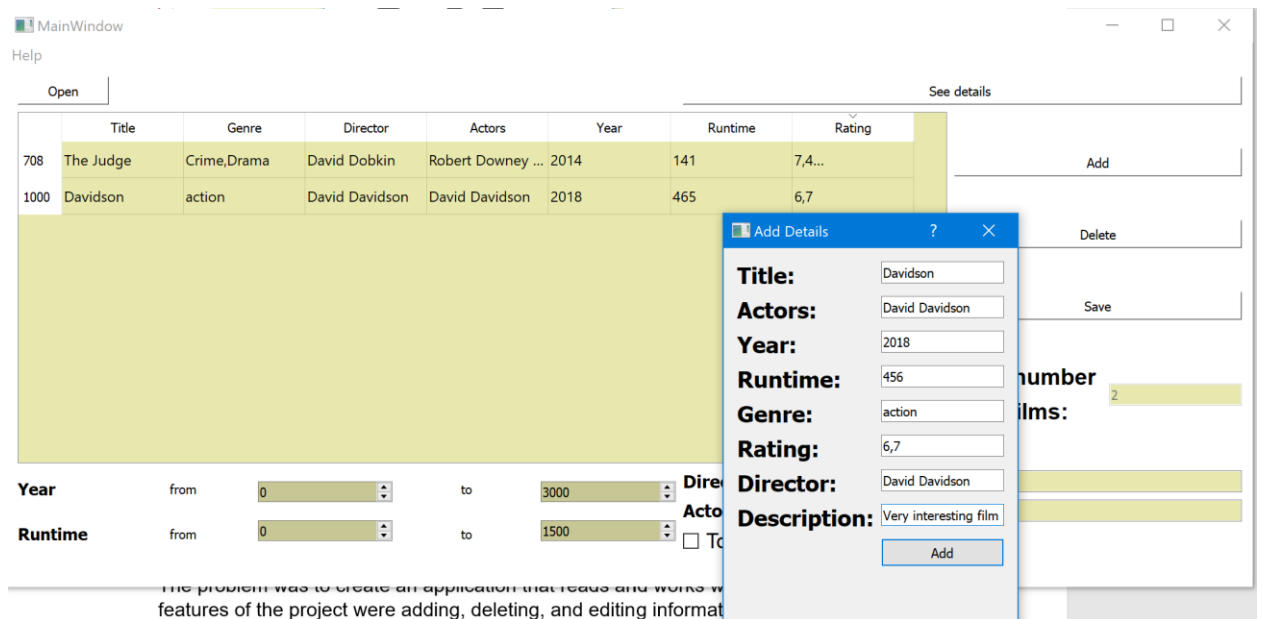




Seeing details about the selected movie:



Adding new movie into the table:



Results and discussion

The problem was to create an application that reads and works with movies dataset. The main features of the project were adding, deleting, and editing information about movies with being able to show the number of movies in the dataset, updating this number and saving the updated data to a file. All the features above were successfully implemented. After discussing the problem with the supervisor we decided to make several changes. However, all the basic features and almost all the additional features were effectively created. Overall, I have improved my practical skills and knowledge in OOP principles.

Conclusion

I have learnt how to build GUI applications with C++ using **Qt metaobject** system and **Qt Widgets** library. Nevertheless, the program would be more interesting and advanced if filters on the hidden columns was implemented to get some particular description of the movies or it was possible to create another column that contained checkboxes whether a user had seen a movie or not. There could have been many interesting ideas to do with the dataset.