# Task 2 Report

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# 1 Specifications

## 1.1 Application Overview

The application is an aggregator of movies and movie ratings with the purpose of providing logged users statistics and informations about a large set of movies. Logged-in user can also rate movies they have watched while not logged-in users may still use the service to browse movie rankings and statistics but they are not able to give their rate. Only movies released in Italy are considered.

All users can search a movie and view its details (e.g., title, original title, duration, cast, ...) along with its aggregated statistics about ratings.

In addition, all users can browse the list of movies sorting and filtering it by many parameters (e.g. year, genre, country, actors, ...).

System administrators can view all user pages and ban users. In order to do that, he can check the full history of ratings.

The movie database will be built upon the publicly available IMDb dataset.

The ratings will be gathered also by periodically scraping other websites (e.g., Rotten Tomatoes, Coming Soon, MyMovies).

## 1.2 Actors

Anonymous user, registered user, administrator and bot.

## 1.3 Requirement Analysis

### 1.3.1 Functional Requirements

An **anonymous user** must be able to register in order to become a *registered user*. Login is carried out using username and password selected by the user when registering. Username must be unique. A valid email address is also required in order to register. An email cannot be used more than once.

Both **anonymous user** and **registered user** must be able to:

- view details and average rating of a specific movie
- view a list of movies and filter it by many parameters. Combined filters are also allowed
- view aggregated statistics about movies grouped by year, country, actor, director, genre

A **registered user** must be able to rate a movie, in addition to what anonymous user can do. A registered user must also be able to manage his profile. In the profile a registered user can:

- check, add and modify his personal data
- browse the history of his rates
- view aggregated statistics about his profile (i.e. most viewed genre, most recurrent actor, etc...) based on his rated movies
- delete the account

Finally, a registered user can logout in any moment.

An **administrator** is a special registered user who must be able to ban users. In order to do that, an administrator can check a global rating history to retrieve information about all the application's activity, and to check every user's profile. Banned user's rating are automatically removed from the database. Email and username of banned users cannot be used again.

The **bot** is not a real user but an entity used to periodically update the database in order to add new movies and update external ratings.

### 1.3.2 Non-Functional Requirements

- Availability: the Database must be replicated in order to be always available. Write operations on the Database can be eventually consistent.
- Scalability: the application must be able to scale to an arbitrary number of servers.
- Security: passwards must be stored in a secure way.
- Responsive UI: Client-side application must provide a responsive view both for pc, laptops and mobile devices.

# 2 Design

## 2.1 Use-case diagram

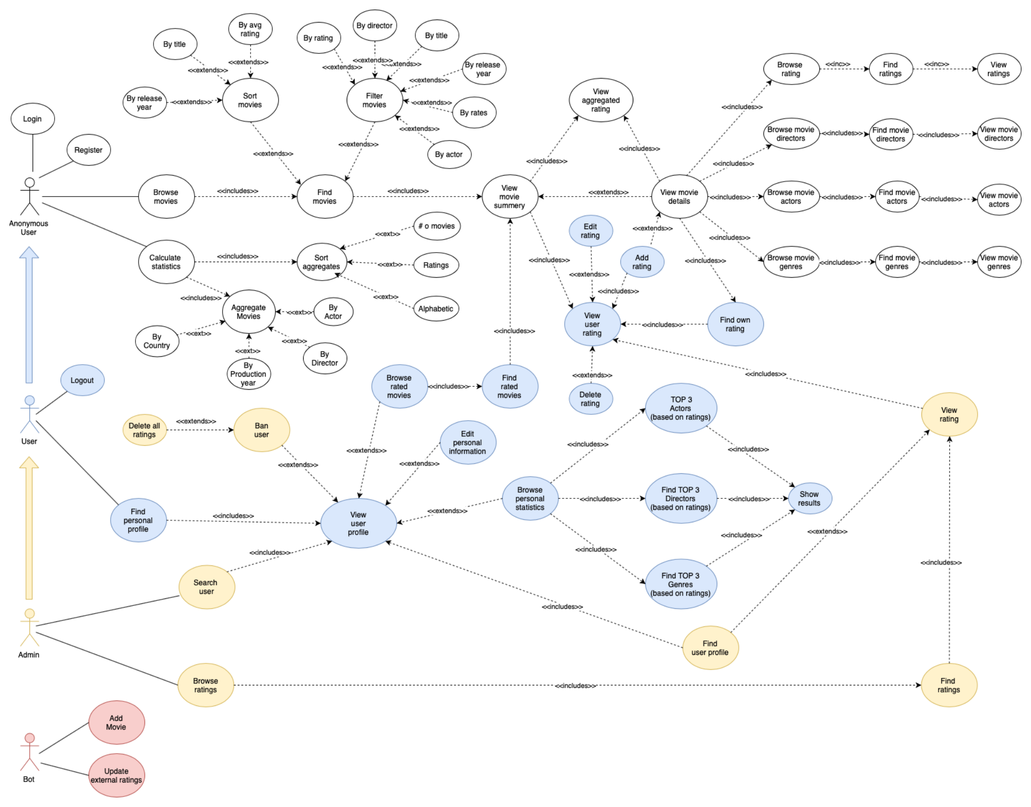

Figure 1: Use-case diagram.

Different colors are used to highlight cases that are exclusive of some actors: blank cases are referred to all users; blue cases are referred to registered user and admin; yellow cases are exclusive of the admin.

## 2.2 Class diagram

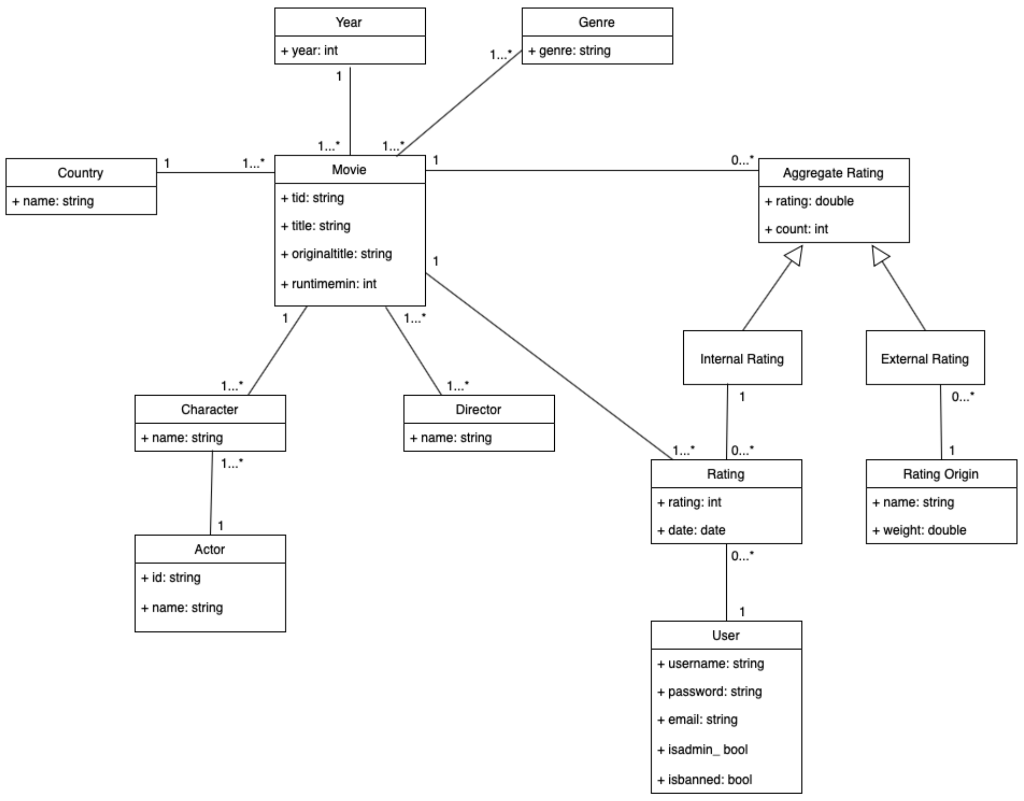

Figure 2: Class diagram for the identified entities

## 2.3 Data model

## 2.4 Software Architecture