Software Requirements Specification

for

OMDB

Version 1.0

Prepared by Yeong Wei Song

27th Jan 2022

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Revision History

Name	Date	Reason For Changes	Version
Yeong Wei Song	27/1/2023	First version	1.0

1. Introduction

Online Movie Database App, also known as OMDB, is an online movie database web application. It provides information about different genres of movies to the user. The information includes movie title, movie rating and movie poster.

1.1 Purpose

The purpose of the Software Requirements Specification is to provide agreement on what the software product or the portion of the product to be implemented in software is to do. Specifically, it provides a means of:

- communications among the project owner and the development team,
- supporting software design and software quality assurance activities,
- supporting system testing activities,
- supporting Verification and Validation activities, and
- supporting a controlled system evolution

1.2 Intended Audience

- Project stakeholders: Business owners, product managers, and other decision-makers who need to understand the software's capabilities and requirements.
- Development Team: Software developers, testers, and other technical personnel who need to know the software's specifications in order to build and test it.
- Customers: End-users and customers who will use the software and need to know what to expect from it
- Regulators: Regulatory agencies that need to ensure that the software complies with legal and industry standards

1.3 Project Scope

OMDB app will be designed to have an independent system that will present sincere ratings on various different movies. It recommends movies based on users' preferences. The recommender system gets better as more honest reviews are collected from the users. However, for new users, as the preference is unknown, the recommender system will not be able to give the best movie recommendation for the users. For these new users, the system will recommend the popular movies instead by default.

1.4 Terms, Definitions, and Acronyms

Algorithm
Algorithm is a finite sequence of rigorous instructions to a computer, typically used to solve a class of specific problems or to perform a computation.

Full Stack Web Application
Full stack web application is defined as an web application that includes both the front end and back end of an application. The front end is usually accessed by a client, and the back end forms the core of the application where all the business logic is applied.

Front-end View
Front-end View refers to the graphical user interface of a website, through the use of HTML, CSS, and JavaScript, so that users can view and interact with the web application.

Back-end Server
The back-end is the portion of the web application the users won't be able to see. It’s responsible for storing and organizing data, and ensuring everything on the client-side actually works.

User Interface Design (UI design)
User interface design is the design of user interfaces for machines and software, such as computers, home appliances, mobile devices, and other electronic devices, with the focus on maximizing usability and the user experience.

Application Programming Interface (API)
Application programming interface (API) is a way for two or more computer programs to communicate with each other. It is a type of software interface, offering a service to other pieces of software.

Item-based Collaborative Filtering
Item-based collaborative filtering is a form of collaborative filtering for recommender systems based on the similarity between items calculated using people’s ratings of those items.

2. Overall Description

2.1 Product Perspective

OMDB app is a self-contained, full-stack web application with proper design of front-end view and back-end server ready. It will not interface with another system. It provides a variety of movie information for the users. without streaming services injected into the web application, if users wish to watch the movie, they can use it with other streaming apps like Netflix, Disney+, fubo TV… etc while OMDB app provides the most comfortable view in regard to the movie details.

2.2 Product Features

OMDB web app will differentiate the users into two user groups which are admin and general user. Admin will be able to perform all the tasks that a normal user can perform. The web app will include a recommender system which gives movie recommendations to the users based on their preference.

2.3 User Classes and Characteristics

Expected users include the people who wish to understand more about certain specific movies. Their skill levels are expected to vary from each other. Hence, the UI design of the web application will focus on simplicity with a common navigation bar and the only main view. However, users are still required to know to press enter when they are done entering the search value in the search box and understand that providing an empty search value will be navigating the web page to the home page. Admin class users are expected to understand that OMDB web app will not provide features of deleting a user from the database. Lastly, all user groups are expected to understand that register email should be in valid format and the password should contain 8-15 characters, at least one lowercase, at least one uppercase, at least one number and at least one special character.

2.4 Operating Environment

The system is intended to be operated on any Windows-based computer. Users are recommended to have a stable internet connection for ensuring the best experience with this web app.

2.5 Design and Implementation Constraints

OMDB web app fetches data from TMDB server via TMDB API. All movies' information comes from the API as well. In cases where the poster is not for the specific movie, the web application would attach a placeholder image to the movie.
OMDB recommender system performs better to a user as the users give more ratings to the movies.

2.6 Assumptions and Dependencies

Item-based collaborative filtering algorithm is adopted for OMDB’s recommender system. The algorithm takes users’ ids, movies’ ids,their respective ratings on the particular movies as the parameters and contributes the results of different groups of users’ preferences to OMDB recommender system.

3. System Features

The completed OMDB app will provide the following functionality to all users (in general) and will include the ability to:

- View different movies
- Give movies ratings
- Add movies to favorite list
- Search for movies

Specific functionality for admin will include the ability to:

- Create new user account
- Create new admin account
- Enter a movie with details that include title, poster, genre and description

4. Non-Functional Requirements

Usability
System design focuses on comfortable UX and reasonably pleasing UI. It makes sure the users will not get confused by the UI design of the system. Soft colors are chosen for the graphical user interface with dark background that reduces eye strain while users use the web app in the dark environment.

5. External Interface Requirements

5.1 Hardware Interfaces

A computer device with a stable internet connection will be required to launch the OMDB web application.

5.2 Communication Interfaces

The Communication between the front-end and back-end is done through a proxy server.