Software Requirements Specification

for

Shenron

Version 1.0 approved

Prepared by

Amr Khalid 202201502

Abdelrahman Al-Asil 202202066

Omar Yasser 202201589

Yusuf Tamer Sahab 202201929

Zewail City

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

Shenron is a movie, series and anime database. This is the first version of the product. The system is a platform for users to discover their favorite movies and series as well as new ones and to discuss different topics with other users in forums. This document describes the initial functional and non-functional requirements for the system and provides some graphical descriptions of the system, such as use case diagrams.

1.2 Document Conventions

This document uses a font size of 32 for titles, 18 for main headings, 14 for subheadings, and 12 for normal text. The font used is *Times New Roman.* Keywords are written in italics. No further special formatting was applied in writing this document.

1.3 Intended Audience and Reading Suggestions

This document's primary audiences are developers and the product owner. Developers are the team that will be implementing the project's software. The developers can refer to this document for input on the functional and non-functional requirements. In addition, the document provides information on the system interfaces and the operating environment. Furthermore, this document will be used to validate the project's functionality with the product owner as the product owner has the ultimate authority for which features to be included in the project, and can reject or accept the final product.

For developers, it is suggested to read the following sections: project scope, user classes and characteristics, system features, external interfaces, operating environment, design and implementation, and other nonfunctional requirements in this order of listing. For the product owner, it is suggested to refer to the glossary at the end of the document for technical terms used in the document.

1.4 Project Scope

Shenron is an online movie, series and anime database similar to IMDb and MyAnimeList. *Shenron* will incorporate new features including a Forums page where users can discuss their thoughts about what they have watched, and a new rating system using surveys to accurately and objectively measure a program's rating. As well, *Shenron* will allow users to create lists of their favourite entertainment programs. *Shenron* is envisioned to be the leading website for providing TV program-related information while maintaining an accountable and inclusive community.

1.5 References

User interfaces prototype: initial GUI

2. Overall Description

2.1 Product Perspective

Shenron is a new product designed to enhance user experience in finding and tracking their favourite movies/TV shows. Shenron also focuses on delivering personalized recommendations. Third party software will be used for authentication and data retrieval. Shenron's major components are:

- **Frontend**: The user interface for interacting with the system.
- **Backend**: The server-side processing and business logic.
- **Database**: The storage for all persistent data.

2.2 Product Features

- Allow users to explore movies and series to their liking
- Add movies and series to their list
- get recommendations based on their usage
- users can post their opinions and involve in open discussion with each other on forums
- users can rate different movies and series
- report posts that are found offensive, inappropriate, or discriminatory.

2.3 User Classes and Characteristics

Admins: personnels with the highest level of technical background. They will manage and maintain the system and will most likely have the highest level of accessibility.

Forums Moderators: Personnels that will monitor the forums and remove any posts that are found to be inappropriate or discriminatory.

Users: personnels the web application is developed to satisfy their needs. users will use the software to view entertainment programs and related information, review them, and post their opinions through forums.

2.4 Operating Environment

Shenron is designed to be compatible with the latest versions of popular web browsers such as: Google Chrome (version 95 and above), Microsoft Edge (version 95 and above) and Safari (version 14 and above).

For Hosting requirements, Shenron's backend will run on a server that supports Django 5.x or above as the backend framework, react (17.x or above) for the frontend and MySQL 8.0 or above for database management and a minimum of 4GB RAM and 2-CPU core to handle high traffic.

2.5 Design and Implementation Constraints

Relying on external API Availability and Consistency as their circumstances may change. Their rates may change or increase with high usage and they may be permanently or temporarily down

2.6 Assumptions and Dependencies

To update the programs the website depends on a third party API

3. System Features

3.1 Search

3.1.1 Description and Priority

The search allows users to quickly find what they want . also they can search based on title, actors, genre and release year. search is considered as a high-priority

3.1.2 Stimulus/Response Sequences

Stimulus 1:

Action: The user enters a search term in the search bar
System Response: the system displays the movies based on the entering

Stimulus 2:

Action: The user clicks on the movie/tv-show

System Response:The system redirects the user to a new page with more information about the movie/tv-show

Stimulus 3:

Action: The user write the term in swatch bar and click on enter on the keyboard

System Response:The system redirects the user to a new page with all movies with the same name

Stimulus 4:

Action: The user enters an invalid search term

System Response: The System will display a message "No results found"

3.1.3 Functional Requirements

REQ-1: The search bar accepts a user input as a text and returns relevant results based on the text

REQ-2: The search result will include basic details like title, genre and year and will allow the user to click on the movie to be redirected to another page to know more detailed information.

REQ-3: The system must display "no results found " message if no search results match the query,

3.2 Add to list

3.2.1 Description and Priority

The add to list function allows users to add a movie/series/anime to their favourite list. The feature is of medium priority

3.2.2 Stimulus/Response Sequences

Stimulus 1:

Action: The user enters a search term in the search bar

System Response: the system displays the movies based on the entering

Stimulus 2:

Action: The user opens the page for a movie/anime/series

System Response: The System will display the page of said program

Stimulus 3:

Action: The user clicks on the hollow star icon

System Response: The System will add the program to his favorites list

3.2.3 Functional Requirements

Pre-Condition: The user is logged in

REQ-1: The clicking of the hollow star icon must have the ability to add the program that the user chose to his own favorites list.

REQ-2: After clicking the hollow star the user will be prompted to select 1 of 5 states to add it to the list which includes: Plan-to-watch, Completed, On-Hold, Dropped, and Watching.

REQ-3: In case the user isn't logged in display an error message "Please Log-In"

3.3 View List

3.3.1 Description and Priority

This feature allows the user to view the items he added to the list. This feature is of Medium Priority.

3.3.2 Stimulus/Response Sequences

Stimulus 1:

Action: the users selects the list from navigation bar
System Response: the system redirects the user to the selected list

3.3.3 Functional Requirements

Pre-Condition: The user is logged in

REQ-1: The system shall allow the user to view their entertainment programs list when they click on the list button from the navigation bar.

3.4 Post on Forum

3.4.1 Description and Priority

This feature allows the user to add a post on the forums page for a specific movie, a TV series, or an anime. This feature is of high priority.

3.4.2 Stimulus/Response Sequences

Stimulus 1:

Action: the users selects a movie
System Response: the system displays a new page of the movie along with its description and related information

Stimulus 2:

Action: the user clicks on forum button
System Response: the system displays the forums page that contains all posts related to that movie

Stimulus 3:

Action: The user writes a post in the displayed text input and press the post button
System Response: The system displays the updated forums page

3.4.3 Functional Requirements

Pre-Condition: The user is logged in and has opened a program's page.

REQ-1: The system shall open the chosen program forum's page on clicking on the forum's button.

REQ-2: The system shall allow the user to make a post on the forums page

3.5 Interact with Forum Posts

3.5.1 Description and Priority

This feature allows the user to make a comment on an existing post on a program forum's page or upvote / downvote the post. This feature is of medium priority.

3.5.2 Stimulus/Response Sequences

Stimulus 1:

Action: The user upvotes / downvotes a post
System Response: The system displays the updated forums page

Stimulus 2:

Action: The user clicks on a post
System Response: the system displays the post with a text input field

Stimulus 3:

Action: The user writes a comment in the text input field; then, clicks on the post button
System Response: The system displays the updated post page with the user comment on it.

3.5.3 Functional Requirements

Pre-Condition: The user is logged in and has opened a forum page of some program.

REQ-1: The system shall allow the user to upvote / downvote the posts inside a specific program forum's page.

REQ-2: The system shall allow the user to comment on a post inside a specific program forum's page.

3.6 Report a Post

3.6.1 Description and Priority

This feature allows the user to report a post on the forum's page of a specific program. This feature is of high priority.

3.6.2 Stimulus/Response Sequences

Stimulus 1:

Action: The user clicks on the report button next to the designated post to be reported.

System Response: The system displays a message to ask the user if they are sure they want to report this post.

Stimulus 2:

Action: The user clicks the confirm button.

System Response: The system creates a report of the post with the appropriate information and sends it to the moderator of the forums. In addition, the system displays a success/failure message to the user.

3.6.3 Functional Requirements

Pre-Condition: The user is logged in and has opened a forum page of some program.

REQ-1: The system shall allow the user to report a post on a forum’s page.

REQ-2: The system shall ask the user for confirmation before executing the reporting process.

REQ-3: The system shall display the status of the reporting process to the user after confirmation.

3.7 Edit a post

3.7.1 Description and Priority

This feature allows the user to edit a post of their own that they have already composed before. This feature is of medium priority.

3.7.2 Stimulus/Response Sequences

Stimulus 1:

Action: The user clicks on the edit button that is only visible on their own posts.

System Response: The system displays a text-input field for the user.

Stimulus 2:

Action: The user edits their post and clicks on the repost button.

System Response: The system displays the updated forum's page with the edited user post.

3.7.3 Functional Requirements

Pre-Condition: The user is logged in and has opened a forum page of some program that they have already posted on before.

REQ-1: The system shall allow the user to edit their own posts.

REQ-2: The system shall display the updated forum’s page with the user-edited post after clicking on the repost button.

3.8 Remove a post

3.8.1 Description and Priority

This feature allows the forum’s moderator to remove a post they find inappropriate or discriminant. This feature is of high priority.

3.8.2 Stimulus/Response Sequences

Stimulus 1:
Action: The moderator selects a report.
System Response: The system displays the report and its details.
Stimulus 2:
Action: The moderator clicks on the remove button.
System Response: The system prompts the moderator with a confirmation message
Stimulus 3:
Action: The moderator clicks on the confirm button.
System Response: The system removes the post from the corresponding forum. Then, displays a status message to the moderator.

3.8.3 Functional Requirements

Pre-Condition: The moderator is logged in and has opened the list of reported posts.

REQ-1: The system shall allow the moderator to select a report for a detailed view.

REQ-2: The system shall allow the moderator to remove the post by clicking the remove button.

REQ-3: The system shall display a confirmation message before executing the removing process.

REQ-4: The system shall display a status message after the removing process is completed.

3.9 Review

3.9.1 Description and Priority

This feature allows the user to review any program that they have watched using the survey rating system. The feature is of Medium Priority.

3.9.2 Stimulus/Response Sequences

Stimulus 1:
Action: the user selects a movie/anime/series that they have watched
System Response: the system redirects them to the page of that program
Stimulus 2:
Action: the user clicks on the rate button
System Response: the system prompts a survey for the user to fill out
Stimulus 3:
Action: the user submits the rating
System Response: the system prompts a message to the user about the success/failure of the operation

3.9.3 Functional Requirements

Pre-Condition: The user is logged in, The movie/series/anime is in the user's List

REQ-1: The System must open a survey after the user clicks on the Rate button
REQ-2: The System will add the user's rating to the Program's page
REQ-3: The System will measure the updated overall rating in accordance with the new rating
REQ-4: The System will prompt a message to the user about the success/failure of the rating

3.10 Edit Account Information

3.10.1 Description and Priority

This feature allows the user to edit their account information like their username, password, profile picture, etc… . The feature is of High Priority

3.10.2 Stimulus/Response Sequences

Stimulus 1:
Action: the user selects their profile page
System Response: the system redirects them to the page of their profile
Stimulus 2:
Action: the user clicks on the Edit Profile button
System Response: the system prompts an edit menu for the user to choose what they want to change
Stimulus 3:
Action: the user selects one of the options to be edited
System Response: Depends based on the option you chose
Stimulus 4:
Action: the user submits the object edited
System Response: the system prompts a message to the user about the success/failure of the operation

3.10.3 Functional Requirements

Pre-Condition: The user is logged in.

REQ-1: The System must open a list of possible edits after the user clicks on the Edit Profile button

REQ-2: The System will change the current option to the new edited option according to the user's choice
REQ-3: The System will prompt a message to the user about the success/failure of the rating

4. External Interface Requirements

4.1 User Interfaces

Refer to the references in 1.5 for initial GUI prototypes.

- **Home page:** includes the main display of the website and navigation bar.
- **Program:** displays the programs cover image and related details, such as title, description, rating, etc….
- **List:** The programs the user has added to their favourites list.
- **Forums**: page containing all the forums.
- **Login page:** Allows users to access the website.
- **Signup:** Allow users to create accounts

4.2 Hardware Interfaces

- Supported devices: The software supports a variety of devices like: desktops, laptops, tablets, and mobile devices.

- Hardware components: back-end VPS with, initially, a minimum of 4GB RAM and 2 CPU cores to handle requests and implement the software's logic and a database VPS with, initially, a minimum of 10GB for data storage and retrieval.

4.3 Software Interfaces

- **operating systems:** The software is designed to be a web app that supports a variety of operating systems, such as Windows, Linux, and macOS.

- **Frameworks**: Django 5.x as a back-end REST framework and React 17.x as a front-end framework.

- **Third-party APIs:** TMDB API V3 for requesting updates on programs daily, and Google Oauth 2.0 as an authorization framework.

- **Database:** MySQL 8.x will be used as the DBMS.

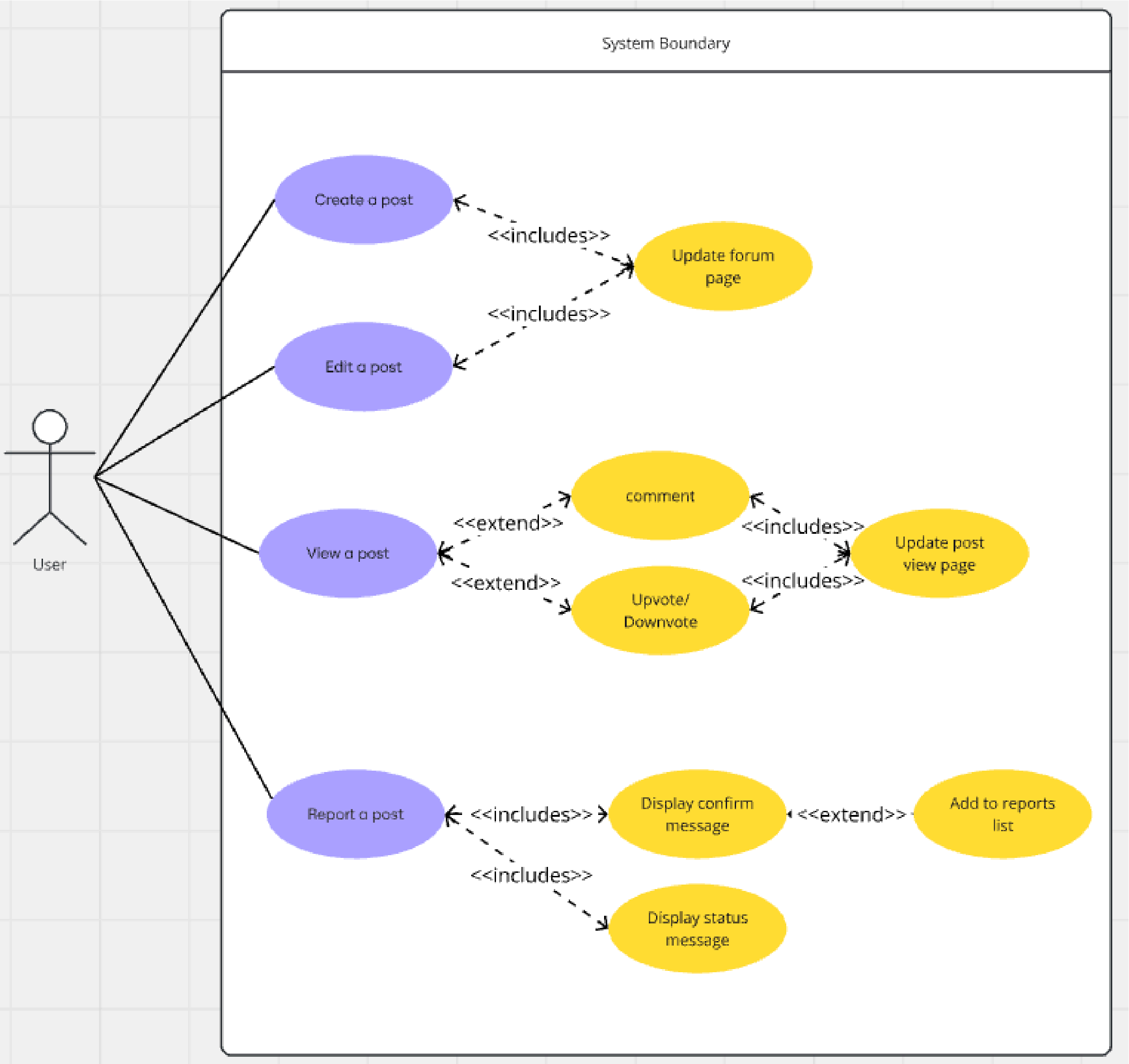
4.4 Communications Interfaces

All requests and their responses will use HTTP, to update files stored in the database SFTP will be used, and for server configurations and updates SSH will be used. Due to the use of Django RESTful API data is expected to be transferred in JSON format. Emails will be sent in case of account registration or password resetting.

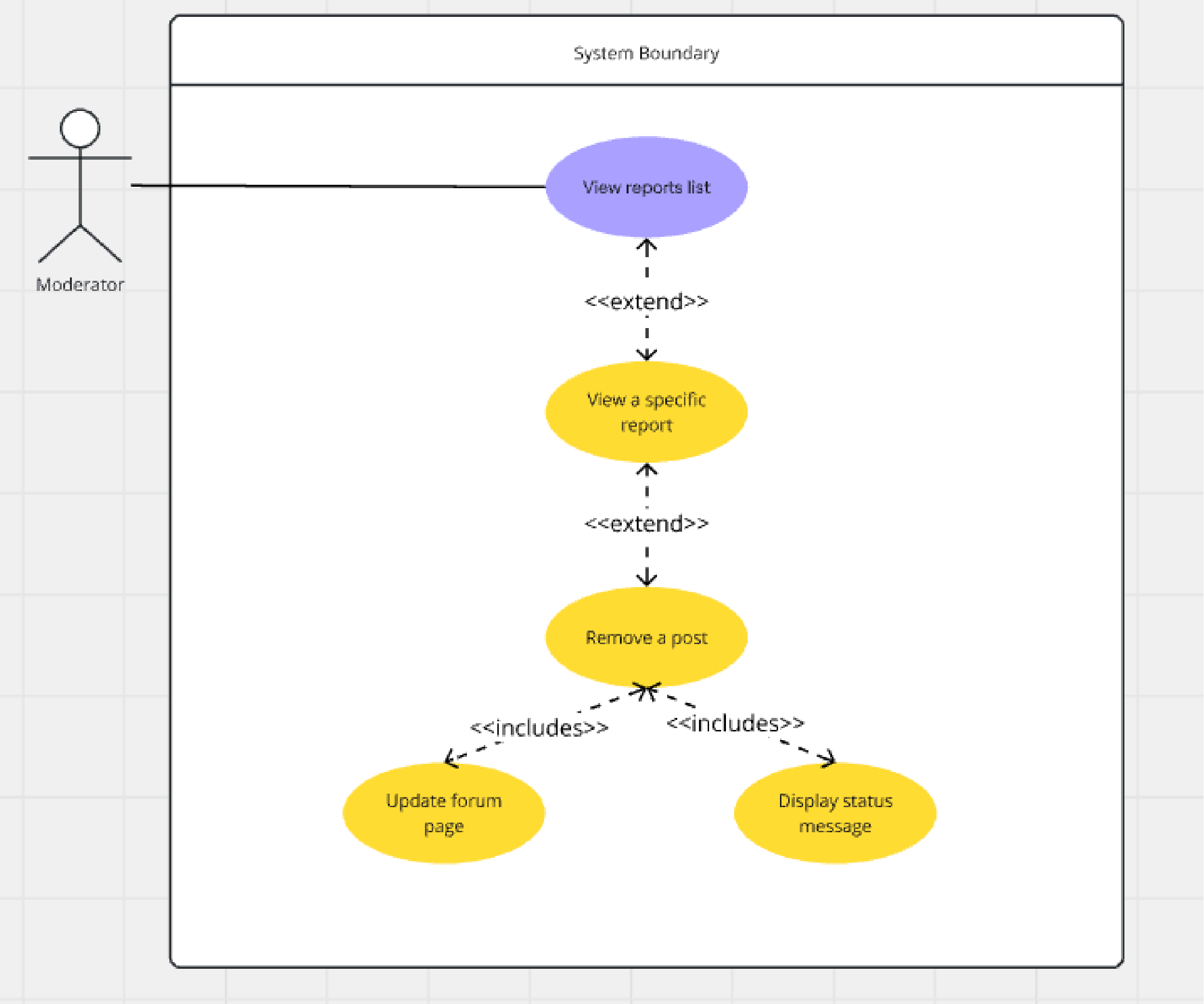
5. System models

5.1 Use Case Diagrams

User's forum functionalities use case diagram.



Moderator's remove post use case diagram



6. Nonfunctional Requirements

6.1 Performance Requirements

The system should respond to user requests within 1 second.

6.2 Software Quality Attributes

The system should be compatible with different operating systems to provide accessibility to a wide range of users.

6.3 Usability Requirements

The system's interface should be user-friendly, intuitive to use, and easy to navigate.

7. Other Requirements

The data collection methods must comply with all local data privacy acts/regulations.

Appendix A: Glossary

Web Browser: A software application used to access and view websites. Examples include Google Chrome, Mozilla Firefox, and Safari.

Django: A Python backend web framework used in developing web applications.

React: A JavaScript library for building user interfaces.

MySQL: A relational database management system that is based on Structured Query Language (SQL).

RAM (Random Access Memory): A type of computer memory that can be accessed randomly. It is used to store information related to actively running programs.

CPU (Central Processing Unit): The primary component of a computer that performs most of the processing inside a computer.

API (Application Programming Interface): A tool that enables two different software components to communicate with each other without having to understand how each component implements its functions.

VPS (Virtual Private Server): Allocated set of computing resources that acts, virtually, as a server allowing for applications deployment.

REST (Representational State Transfer): A software architecture that imposes some conditions on how an API should work so that it enables high-performance and reliable communication between the system's software components.

TMDB (The Movie Database) API: A third-party software that allows for retrieving data related to movies, actors, etc….

HTTP (Hypertext Transfer Protocol): A protocol that defines the communication and data exchange on the web between web-browsers and web-servers.

SFTP (Secure File Transfer Protocol): A network protocol that provides secure file access, transfer, and management functionalities over any reliable data stream.

SSH (Secure Shell): A cryptographic network protocol for operating network services securely over an unsecured network.

JSON (JavaScript Object Notation): A lightweight data-interchange format that is easy for humans to read and write, and easy for machines to parse and generate.