OpenGalaxy

Software Requirements Specification

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1 Introduction

This document specifies the functional and non-functional requirements for OpenGalaxy, a platform designed to facilitate the searching, browsing, and management of open-license media (images, audio, and videos). The app integrates with the Openverse API and provides features for user account management, including registration, authentication, and saving preferences. The aim is to offer an efficient and seamless experience for content creators, educators, and marketers who seek open-license resources.

1.1 Intended Audience

This document is intended for the following stakeholders:

- Product Owners
- Software Developers
- Testers
- Investors

1.2 Intended Use

The Software Requirements Specification (SRS) will be used for:

- Feature design and development
- Project and sprint planning
- Risk assessment and mitigation
- Progress measurement
- Compliance and regulatory considerations

1.3 Scope

The system aims to provide a web platform for searching and managing open-licensed media. Key functionalities include:

- Media search and filtering through the Openverse API
- User account management (registration, authentication, and preferences)
- Secure handling of user data, including search history and preferences
- A modular, scalable architecture, with practices such as automated testing, Docker containerisation, and CI/CD pipelines

Target users include content creators, educators, marketers, and the general public seeking freely available digital media.

1.4 Definitions and Acronyms

- **Openverse API** - A platform providing access to openly licensed media
- **CI/CD** - Continuous Integration and Continuous Deployment
- **OOP** - Object-Oriented Programming
- **Docker** - A tool for containerising applications to ensure consistent environments
- **UX** - User Experience, referring to the overall interaction a user has with the system
- **UI** - User Interface, the space where users interact with the application

2 Overall Description

OpenGalaxy addresses the growing demand for accessible open-license media while reducing copyright and licensing concerns. The platform will enable efficient searching, browsing, and management of open-license media, including images, videos, and audio. It will feature advanced search capabilities, an intuitive user interface, and secure user account management, while ensuring the application remains scalable and maintainable.

This system is designed for content creators, educators, marketers, and hobbyists who require free-to-use media for various projects. The app will employ modern software engineering practices, such as automated testing, containerisation, and API integration, to provide a robust and scalable platform.

2.1 Target Audience

The primary users of the system include:

- Content creators looking for open-license media for their projects
- Educators seeking resources for online courses or digital learning materials
- Developers and marketers needing media for websites, blogs, and promotional material
- Hobbyists and enthusiasts interested in free-to-use digital media

2.2 User Needs

Users require a system that enables them to easily search, browse, and manage open-license media. Key features of the system include:

- Integration with the Openverse API for media search
- User account management for saving preferences and recent searches
- Advanced filtering and sorting options for media search
- A responsive design that adapts to desktop, tablet, and mobile devices
- Media playback for audio and video content

2.3 User Stories

- As a user, I can search for media based on specific filters (e.g., size, license type).
- As a user, I can log in to favourite media, save my search history, and edit preferences.
- As a user, I can view detailed information about the media, including licensing terms.
- As a user, I can play audio or video directly from the platform or download it for offline use.

2.4 Assumptions and Dependencies

The system assumes the following:

- Users have access to the internet
- The system will be compatible with modern web browsers (e.g., Chrome, Firefox, Safari)
- The Openverse API is available and functional
- The system will comply with accessibility standards (WCAG 2.1)

3 System Features and Requirements

3.1 Functional Requirements

The system will provide the following features:

- User Account Management: Registration, login, and preferences management
- Media Search Interface: Integration with the Openverse API for searching and filtering media
- Media Display: Preview and playback functionalities for media results
- Advanced Filtering: Filters for media type, license type, resolution, and more
- User Preferences: Saving favourite media and search filters

3.2 External Interface Requirements

The system will support the following interfaces:

- **User Interface**: The UI will be user-friendly, with clear workflows and intuitive navigation. It will also adhere to accessibility standards.
- **Software Interfaces**: Integration with the Openverse API to retrieve open-license media.
- **Hardware Requirements**: The system will run on standard desktop and mobile devices with modern web browsers, supporting various screen sizes and resolutions.
- **Communication Protocols**: The system will use RESTful APIs and JSON for communication with the Openverse API.

3.3 Performance Requirements

The system must meet the following performance requirements:

- Retrieve media data from the Openverse API with minimal latency
- Display media results quickly, optimised for desktop and mobile devices
- Handle a moderate number of concurrent users
- Provide a seamless browsing and media playback experience across devices

3.4 Security Requirements

Security features will include:

- Authentication and authorisation for secure user login and data access
- Encryption to protect user data (personal information and search history)
- Protection against common security threats (SQL injection, XSS)
- Secure session management to prevent session hijacking and fixation
- Regular security audits to identify and mitigate vulnerabilities

3.5 Software Quality Attributes

The system must exhibit the following quality attributes:

- **Reliability**: 99.9% uptime, with graceful handling of external service failures (e.g., Openverse API outages)
- **Maintainability**: Modular design for easy updates, with clear documentation and adherence to coding standards

- **Usability**: Intuitive UI prioritising user experience (UX) best practices
- **Scalability**: Support for a growing user base and increasing media content without significant performance degradation
- **Portability**: The system must work across different platforms and browsers