

Software Requirements Specification

Introduction

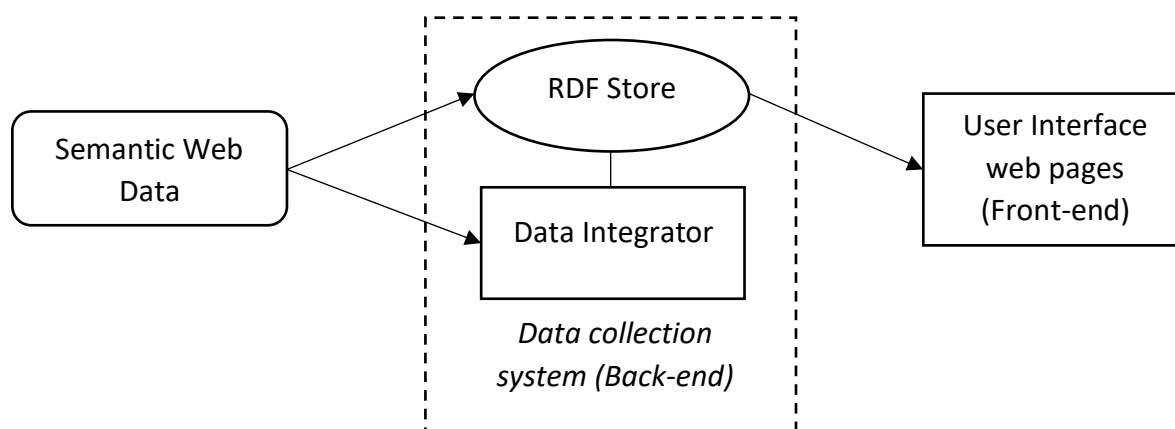
This document will outline the requirements of the Semantic Web application I will be designing and implementing for my project. Firstly, the main purpose of the application will be outlined followed by a description of the system's basic structure and a profile of its intended users. After listing any constraints that may apply during system development, specific requirements for the system will be recorded. These requirements will be classified as either Functional or Non-functional. Functional requirements are essential to the application's core purpose and must be fulfilled before the end of the project. Non-functional requirements are desirable but not essential.

Overview

The purpose for this project is to produce automatically generated web pages which display information about musical artists in a concise manner. On each artist web page, there will be links which users can follow to find more specific information if they wish.

Overall Description

Structure



The Data Integrator will be primarily Python scripts that can retrieve information directly from Semantic Web sites (DBpedia and MusicBrainz) using SPARQL queries. The results of these queries can then be displayed on the user interface. The user will select options for what data they wish to view, which will correspond to functions in the back-end of the application. The execution of these functions will lead to SPARQL queries being generated and the result of these queries will be returned to the user via the UI. PHP will be used to output the results from the Python scripts on the UI.

Users

This application will be used by anyone who has a particularly keen interest in music; individuals who want to know more than an artist's name and their songs. People who want to know where an artist came from, what inspired that artist and who their contemporaries are. Is an artist on tour in a nearby city? These are just a few examples of questions that users of the application should be able to find answers to.

Constraints

The primary source of data for my application MusicBrainz, features 1,313,788 artists (as of February 14th 2018) ^[1]. Due to limitations of using the School of Computer Science's web server and the time available to complete this project, it would be unreasonable and unrealistic to attempt to produce web pages which feature as many artists. Therefore, the earliest iterations of the site I develop must feature at least 50 artists, but I will aim to add a much greater number so long as all functional requirements of the system have been met.

Specific Requirements

(Include all the requirements, functions, interfaces, performance and data requirements, design constraints, security, adjustments needed for site implementation, maintenance, features and systems attributes, priorities, and release plans.)

Functional Requirements

- System database contains at least 50 artists.
- If available, an automatically generated page regarding an artist must contain the following information:
 - A brief description of the artist.
 - All albums released by the artist.
 - List of band members if artist is a group.
 - List of associated genres.
 - Hometown.
 - Link to the artist's official site if available.
- Automatically generated page regarding an album must contain:
 - A brief description of the album
 - The album's year of release
 - The producer(s) of the album
 - Highest sales award (i.e. Platinum, Gold)
 - Genres associated with the album

Non-Functional Requirements

- All web pages contain a search bar for finding artists, albums or songs.
- All pages load up in under four seconds.
- Web pages should look modern and be easy to navigate/understand.
- Web pages should cater for accessibility issues (e.g. visual impairment, colour blindness)
- Artist pages:

- Include an image of the artist.
- List some of their highest rated tracks according to ratings on MusicBrainz.
- Links to external social media sites belonging to the artist: Facebook, Twitter, Instagram and YouTube
- A link to the artist's corresponding Bandsintown page so that users can see if the artist is on tour near them
- A link to the artist's corresponding setlist.fm page so that users can view setlists of the artist's past performances.
- Album pages:
 - Album artwork is displayed next to the album name.
 - Contain a list of tracks from the album.

References

1. <https://musicbrainz.org/statistics>