

Software Requirements Specification

of the application *Album Manager*

Based on the IEEE Standard 830-1998

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1. Introduction

1.1 Purpose

The purpose of the SRS is to introduce those who are interested in the project into its details, especially the lecturer of the subject Procedural Programming Languages II for which the project is being implemented.

1.2 Scope

The aim of the application is to simplify choosing a right album to listen to at a certain moment. Therefore, it will contain helpful filters together with easy and quick access to the chosen album in the Spotify app and random album selection. The app will not contain any internal music player. The app is temporarily named 'Album Manager'. The name might change in the future.

1.3 Definitions

Application software (**app** for short) – software designed to perform a group of coordinated functions, tasks, or activities for the benefit of the user.

Album – a collection of audio recordings issued as a collection.

Spotify app – official application issued by Spotify both for desktop and mobile devices.

Filter – part of a program separating the items meeting certain criteria from the rest.

Window - a graphical control element. It consists of a visual area containing some of the graphical user interface of the program it belongs to and is framed by a window decoration. It usually has a rectangular shape that can overlap with the area of other windows. It displays the output of and may allow input to one or more processes.

Operating system – system software that manages computer hardware, software resources, and provides common services for computer programs.

Desktop application – application that runs on the desktop of the PC.

Smartphone – a class of mobile phones and of multi-purpose mobile computing devices. They are distinguished from feature phones by their stronger hardware capabilities and extensive mobile operating systems, which facilitate wider software, internet (including web browsing over mobile broadband), and multimedia functionality (including music, video, cameras, and gaming), alongside core phone functions such as voice calls and text messaging.

Start Window – the window that is displayed after the start of the program. It displays items, filters and buttons.

Random Album Window – the window that is displayed when a user clicks the ‘Choose random album’ button in the Start Window. It displays a random album and redirects a user into a Spotify application.

Edit Collection Window – the window that is displayed when a user clicks the ‘Edit the collection’ button in the Start Window. It enables a user to change a collection by adding a new item, changing the existing one or deleting the unwanted ones.

User – a person who utilizes a computer or network service. Users of computer systems and software products generally lack the technical expertise required to fully understand how they work.

Cover art – a type of artwork presented as an illustration or photograph on the outside of a published product such as CD, or music album (album art).

Mouse – a hand-held pointing device that detects two-dimensional motion relative to a surface. This motion is typically translated into the motion of a pointer on a display, which allows a smooth control of the graphical user interface. In addition to moving a cursor, computer mice have one or more buttons to allow operations such as selection of a menu item on a display.

Touchpad – a pointing device featuring a tactile sensor, a specialized surface that can translate the motion and position of a user's fingers to a relative position on the operating system that is made output to the screen.

Touchscreen – a both input and output device and normally layered on the top of an electronic visual display of an information processing system. A user can give input or control the information processing system through simple or multi-touch gestures by touching the screen with a special stylus or one or more fingers.

View – the structure, layout, and appearance of what a user sees on the screen.

1.4 Overview

The rest of the SRS contains an overall description presenting more details of the application project and specific requirements section containing many significant technical details required to efficiently implement the project into a fully working app.

2. Overall description

2.1 Product perspective

The app is designed both for PCs and for smartphones (especially those running Android OS). Therefore these devices need operating system which can run this application. For PCs it is at least Windows 7 (or later) while for smartphones it should be at least Android 7 'Nougat' (or later). As *Album Manager* uses the Spotify app to play music, the newest version of the app and the internet connection is necessary for a proper experience.

2.2 Product functions

Desktop app

- At the start of the desktop application Start Window should pop up on the screen. This window should contain list of all albums in a user's collection. At the top of the window there ought to be access to various filters which limit number of items displayed in the window to only those which meet certain criteria (e.g. genre, mood, year of production).
- Every item of the list should contain essential data: name, artist, year of release. At the left side of each item should be the album's cover art.
- Start Window also needs to have two buttons – the first one opens a window displaying a random album (Random Album Window) from the filtered list below, the second one opens a window enabling a user to edit the collection (Edit Collection Window).
- Albums are sorted by popularity – when initialising a collection, the user will write the number of plays of any song from each album. Item will be sorted by this value in a descending order.
- Double-clicking an item should open the album in a Spotify app.
- Random Album Window should display some data and after 5 seconds open the album in a Spotify app. It should also contain a button after clicking which the app displays another random album.
- Edit Collection Window lets a user edit the collection – it saves the information written in by a user using serialization. At the start of the application all files containing necessary information must be deserialized. The user should be able not only to save information but also to change some data, choosing the file containing information about some album using a file picker and opening it within the application.

Mobile app

- The mobile application's functionalities will be limited comparing them to the desktop ones.
- At the start the app displays a random album from the collection. At the bottom of the screen there should be a button after clicking which the app displays another random album.
- There should be also an option of applying the same filters that are used in the desktop application.
- The mobile app does not allow a user to edit the collection.

2.3 User characteristics

The application should be easy to operate for every user able to use a computer or a smartphone. It does not require any additional skills.

3. Specific requirements

3.1 External interfaces

When using the desktop application user should have an access to a mouse, touchpad or a touchscreen. Besides, there should be an access to a working display.

When using the mobile application user should have an access to a working touchscreen.

3.2 Functions

The system shall accurately process click events when a mouse/touchpad/touchscreen is clicked enabling the program to react to this.

The system shall display all program output directly onto a screen, without any significant errors and glitches.

3.3 Performance requirements

- The desktop app should be ready (display all items) in 5 seconds.
- Random Album Window should be ready in 2 seconds.
- The mobile app should be ready in 3 seconds.

4. Schedule

07/11/2019 – WPF project structure. Temporary (basic) view of Start Window and Random Album Window.

13/11/2019 – Filters in the Start Window should be working limiting the number of item displayed.

20/11/2019 – Program should display a random item from the collection limited by filters in the Random Album Window. The window opens the album on Spotify.

27/11/2019 – Editing of the collection enabled – serialization and deserialization (xml) of each album.

04/12/2019 – The project should contain 'real' data – at least 50 albums with all significant data required by the app. Basic (beta) version of the desktop app should be finished here.

11/12/2019 – Xamarin.Forms project structure. Basic view of the mobile app finished.

18/12/2019 – Basic version of the mobile app should be working – displaying a random album (without filters)

08/01/2020 – User of the mobile app should be able to use the filters too. Unit tests of both apps. Improved view of both apps.

15/01/2020 – Final view of both apps. Unit tests. Both apps should be completed.

22/01/2020 – The ultimate version of both apps (if any improvements will still be necessary).