

Software Requirements Specification (SRS)

1. Introduction

This document describes the Software Requirements Specification (SRS) for the ProgramUpdater system. The goal is to clearly define the current and future functionalities of the system, as well as the technical and operational requirements necessary for its proper functioning.

1.1 Objectives

The ProgramUpdater system aims to identify programs installed on the Windows operating system, detect changes between stored versions and the current state, check for newer versions available online (via Winget or other future sources), and assist the user in the update process.

1.2 Scope

The ProgramUpdater is intended for both technical and regular users who wish to keep their programs updated in a simple and automated way. It includes features for scanning, comparison, JSON file storage, online version checking, and execution of automatic or manual updates.

2. Current Features

- Detection of installed programs through the Windows registry (LocalMachine and CurrentUser).
- Storage of the program list in a JSON file (ProgramSaver).
- Comparison between the current state and the saved state (ProgramComparer).
- Identification of new, removed, and modified programs (different version).
- Verification of newer versions available via Winget (ProgramUpdateAuto).
- Presentation of results to the user in the command line.
- Prompting the user whether to update programs one by one.
- Execution of automatic updates via Winget (ProgramUpdateAutoStatic).

3. Future Features

- Implementation of a graphical interface in Windows Forms for better usability.
- Integration with update sources other than Winget (official websites, APIs).
- Notification system to alert when new versions are available.
- Scheduling of automatic updates.
- Support for automatic backups of the program list in multiple formats (JSON, CSV, XML).
- Detailed reports on history of changes and updates.
- Option to ignore certain applications during verification.

4. Functional Requirements

- FR1 - The system must list all programs installed on Windows.
- FR2 - The system must allow saving the program list in a JSON file.
- FR3 - The system must compare current and saved lists, identifying differences.
- FR4 - The system must check for newer versions online (Winget).
- FR5 - The system must ask the user if they want to update each program.
- FR6 - The system must execute the update command for programs (Winget).
- FR7 - The system must allow updating the JSON file with the new list after changes.
- FR8 - The system must display the results on the screen (console).

5. Non-Functional Requirements

- NFR1 - The system must be developed in C# (.NET 6 or higher).
- NFR2 - The system must run exclusively on Windows (use of registry and Winget).
- NFR3 - The JSON file must be human-readable and indented.
- NFR4 - The system must display clear messages to the user.
- NFR5 - The system must perform efficiently, listing programs in under 10 seconds.
- NFR6 - The code must be modularized by classes and responsibilities.

6. Workflow

1. The user runs the ProgramUpdater.
2. The system scans installed programs.
3. The system loads the previous list from the JSON file (if it exists).
4. The system compares the current list with the saved one and shows differences.
5. The system checks online for the latest versions (Winget).
6. The user is prompted about updating each outdated program.
7. The system executes the selected updates.
8. The user decides whether to update the JSON file with the new state.
9. The process ends.

7. Dependencies

- Microsoft .NET 6 or higher.
- Windows 10 or higher.
- Winget installed and configured.
- Administrator permissions for program installation/updates.