« File Searcher » Project

Requirements refinement

SAMPLE

Project Documentation
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Background	Full set of requirements specification.
Purpose	To organize both development and testing process.
Scope	Business requirements, user requirements, detailed specification, limitations.
Audience	Management staff, project team.
File	03 06 - Requirements Sample.docx

Contents

1. Project scope

The application is designed to automatically search for files by a given pattern.

2. Main goals

- Development of an application to automatically search for files by a given pattern.
- Writing an application in Delphi 7 that will work under Win XP and Win 7.
- Creating a functionality that allows you to specify the initial directory or set of directories to search for files.
- Development of the ability to select the type of files to search: audio files, video files, office files.
- Display information about the found files, such as name, full path, size, date-time of creation and screenshot with the first frame.
- Ensuring high application performance, including the ability to search at least 500 files per second at a read / write speed to disk of more than 50 MB per second.
- Support for Russian and English by default, as well as the ability to add new languages.
- Implementation of the function of logging the operation of the application, with a log size limit of up to 1 Mb and displaying the current analyzed directory in the "Now being checked" panel.
- Support for all Windows and UNIX file systems, with crashes when an unsupported file system is encountered.
- Development of network support functionality.

3. Criteria for main goals achievement

Functionality:

- Ability to automatically search for files by a given pattern;
- Ability to specify the initial directory or set of directories to search;
- Ability to select the type of files to search (audio files, video files, office files);
- Displaying the found files in the right panel with the name, full path, size, date-time of the file creation and a screenshot with the first frame;
- Ability to support all Windows and UNIX file systems;
- Network support.

Quality:

- Compliance with the specified requirements (writing in Delphi 7, working under Win XP and Win 7);
- The ability to work with a search speed of at least 500 files per second, provided that the read / write speed to the disk exceeds 50 MB per second;
- Ability to work for no more than 1 hour;
- Error handling when an unsupported file system is encountered.

Language support:

- Support for Russian and English languages by default;
- Ability to add new languages.

Logging:

- Keeping a log of your work;
- Stop logging when the log file size exceeds 1 Mb;
- Displays the currently analyzed catalog in the "Now being scanned" panel at the bottom of the screen.
- The implementation of all these criteria will achieve the main goals of the project and ensure the performance of the "File Searcher" application.

4. Risks

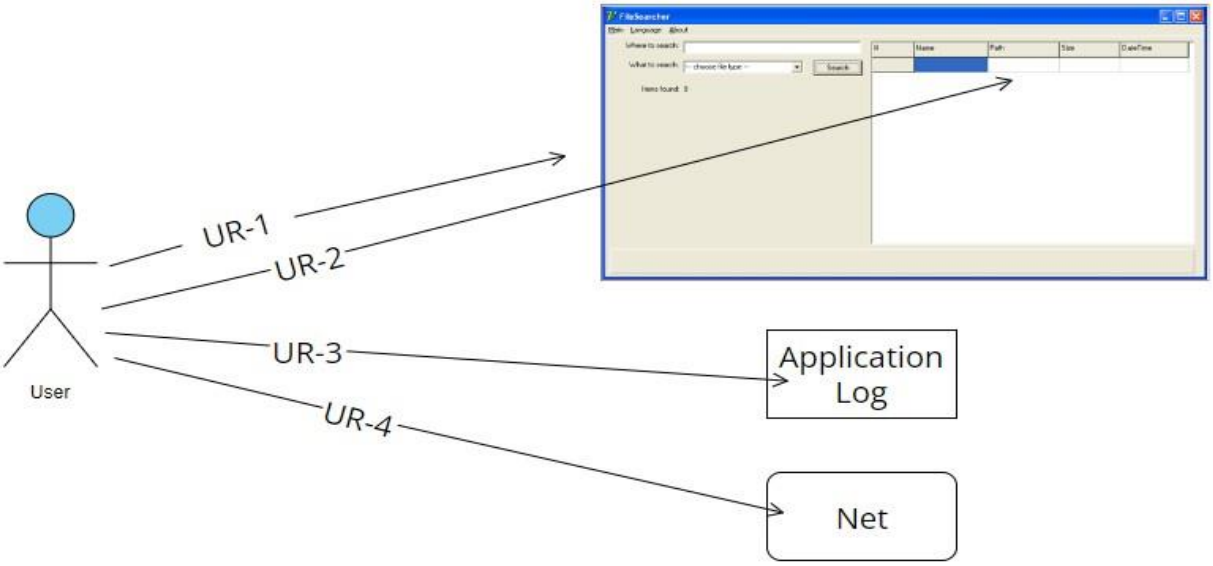
- Limited temporary resources. In 1 month, developers must plan, implement, test and release the application to the market. If the tasks are set incorrectly or if temporary resources are lost, this can lead to the fact that the project will not be completed on time.
- Effective project management. Having different roles in a project does not guarantee success if there is not adequate management. A team leader should be able to effectively build a workflow between developers and a tester, as well as be able to monitor the progress of tasks.
- Technical risks. The developer may face technical problems such as the wrong choice of technologies, the lack of the necessary libraries, the need to implement complex algorithms, etc.
- The stability of the application. The application should work quickly and without failures. If there are no properly written tests, then there is a chance that the application will be unstable and will not have a good reputation in the market.
- Limited budget. The $9000 budget for app development is the limiting factor. If there are budget issues, this may result in a lack of funds to improve functionality, implement new features, and maintain the application after launch.

5. System characteristics

- Operating system: Windows XP and Windows 7.
- Programming language: Delphi 7.
- Processor: Intel Pentium 4 or equivalent, 1 GHz or faster.
- RAM: at least 512 MB.
- Read / write speed to disk: at least 50 MB per second.
- Search speed: at least 500 files per second.
- File system support: all Windows and UNIX file systems.
- The following types of search files should be supported: audio files (mp3, ogg, wav, mid), video files (avi, mpg, mpeg), office files (doc, docx, xls, xlsx).

6. User requirements

- See also the use cases diagram below for details.
- UR-1 The application should have an intuitive interface that allows you to quickly set up a search for files according to a given pattern and get results.
- UR-2 The user should be able to select the directories to search and the types of files to search.
- UR-2 The application should display all found files with their names, full paths, sizes, creation dates and screenshots.
- UR-3 The application should keep a log of its work and display the current parsed directory in the "Now being checked" panel at the bottom of the screen.
- UR-4 The application must support networking.



7. Business rules

- BR-1: All Windows and UNIX file systems are supported.
- BR-2: The work log cannot exceed 1 Mb.
- BR-3: Disk read/write speed must exceed 50MB per second.

8. Quality attributes

QA-1: Reliability:
- QA-1.1: The application must work reliably on all supported operating systems (Win XP and Win 7).
- QA-1.2: The application should crash on encountering an unsupported file system.
- QA-1.3: The application must support logging so that the user can see information about errors or problems in the process.

QA-2: Performance:
- QA-2.1: The application should have high performance, especially when searching for a large number of files. It should look for at least 500 files per second, provided that the disk read/write speed exceeds 50 MB per second.
- QA-2.2: The application should display the found results, including the file name, full path, size, file creation date and time, and a screenshot of the first frame.

QA-3: Usability:
- QA3.1: The user should easily find the desired settings and functions.
- QA3.2: The application should support Russian and English languages by default, as well as provide the ability to add new languages.

QA4: Network support:
- QA4.1: The application must support networking.
- QA4.2: The application must search for files on remote computers and network drives.

QA5: Compatibility:
- QA5.1: The application must be written in Delphi 7.
- QA5.2: The application must support all Windows and UNIX file systems.

9. Limitations

- L-1: The application must be developed using Delphi, as the Customer will maintain the application by their own IT department. Search volume limit. The user can specify a limit on the size of scanned files to avoid system overload and unexpected shutdown.
- L-2: The user can specify only certain types of files to be searched. This can shorten the operation time and avoid finding unnecessary files. These types can be seen in chapter 5 in the last paragraph
- L-3: Restriction on running time. If the search takes more than an hour, the application should automatically quit.
- L-4: Limit on the number of results. The user can specify the maximum number of search results that will be displayed in the application interface. This can save time and make the results more readable.
- L-5: Restriction on file availability. Some files may be password protected or have restricted access. The application should not look for or display such files unless the user has the appropriate permissions.
- L-6: File location limit. The user can specify only certain directories in which to search for files. This can avoid the detection of junk files and speed up the operation.

10. Detailed specifications

DS-1: Delphi

DS-1.1: The minimum version is Delphi 7.

DS-1.2: Uses the standard Delphi component library.

DS-2: Messages

DS-2.1: Usage message: "USAGE search.exe SEARCH_DIR".

DS-3: File Search

DS-3.1: The application must recursively browse the specified directory and all of its subdirectories to find files.

DS-3.2: The application must be able to search for files by name and extension.

DS-3.3: Search results should be output to the application's console window.

DS-4: File Filtering

DS-5.1: The application must filter files by file types supported by the file search engine (mp3, ogg, wav, mid, avi, mpg, mpeg, doc, docx, xls, xlsx).

DS-5.2: The application must search at least 500 files per second, provided that the disk read/write speed exceeds 50 MB per second.

DS-6: User Interface

DS-6.1: The application must have a graphical user interface.

DS-6.2: The user should be able to specify a directory to search for files and filter options.

DS-6.3: The user should be able to select a file from a list of search results and view its contents.

DS-7: File Handling

DS-7.1: The application must be able to open and read files with supported formats.

DS-7.2: The application must be able to search for text data in a file and output it to the user interface.

DS-7.3: The application must process files in Russian and English in supported encodings.

DS-8: Magazine

DS-8.1: The application must keep a log of its activities.

DS-8.2: The log must include the date and time of the operation, the number of results, and the time spent searching.