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|  | «Video player» Project |
| Requirements  Project Documentation |
|  |  |
| 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 | Video Player Requirements.docx |

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# Project scope

Development of a tool to:

• Catalog videfiles.

• Find duplicates of videofiles.

• Find corrupted videofiles.

• View videofiles

# Main goals

* Provide the Customer with a user-friendly and intuitive interface.It includes easy playback controls, the ability to adjust video and audio quality, and intuitive navigation through the video library.
* Support for a wide range of video formats. It is important for the app to provide smooth and trouble-free playback of videos in any format.
* The tool should not fail (for any reason) during its working process (unlike many competing tools).

# Criteria for main goals achievement

* Support smart Compression and optimization algorithms (for good performance) and the following video formats: see [BR-1](#BR_1).
* Deep testing for negative and critical situations should be implemented to ensure the application reliability.
* Buffering and adaptive playback algorithms (They allow you to dynamically adjust video quality and buffering speed depending on network conditions and device capabilities).

# Risks

* Difficulty to accurately compress and buffer some formats.
* Difficulty (or inability) to detect encoding for non-English subtitles in files.

# System characteristics

* SC-1: The application must be able to handle different resolutions and video quality.
* SC-2: The application must be developed using Java and Kotlin.
* SC-3: The application should be a multi-platform one (taking into account [L-4](#L_4)).

# User requirements

* UR-1: Starting and interacting with the application.
  + UR-1.1: User can start the application by tapping the application icon.
  + UR-1.2: User can select and open video files through the application interface.
  + UR-1.3: User can start playing video files with the “Play” button.
  + UR-1.4: User can pause the video files playback with the "Pause" button.
  + UR-1.5: User can fast forward or rewind the video files with the time slider.
  + UR-1.6: User can change the playback volume of video files with the volume knob.
  + UR-1.7: User can add and select subtitles for video files.
  + UR-1.8: The user can customize subtitle settings such as font size, color, and position.
  + UR-1.9: The user can view information about the video, such as title, duration, resolution, and format.
* UR-2: Configuration of the application.
  + UR-2.1: The user can configure the parameters of the application through the Settings interface.
  + UR-2.2: The user can select Auto Scan (to automatically detect new video files on the device)
  + UR-2.3: User can enable hardware acceleration to increase the performance of the application
  + UR-2.4: User can select the day/night mode that changes the color of the interface
* UR-3: Application log.
  + UR-3.1: The application should output its log to the console (see [DS-3](#DS_4)).
  + UR-3.2: Log contents and format are described in [DS-3.2](#DS_4_2) and [DS-3.3](#DS_4_3).

# Business rules

* BR-1: Supported formats are: MP4, AVI, MKV.
* BR-2: Output formats are both HTML and CSV.
* BR-3: In DuplicatesOnly mode the background color for duplicates should be white in HTML output. In normal mode the background for duplicates should be red.
* BR-4: Any directory or file name in console output should be fully qualified normalized one.

# Quality attributes

* QA-1: Resilience to input data
  + QA-1.1: See [BR-1](#BR_1) for the requirements to input file formats.
  + QA-1.2: See [DS-4.2](#DS_5_2) for the requirements to input file size.
  + QA-1.3: See [DS-4.3](#DS_5_3) for the details on application reaction on incorrect input file format.
* QA-2: Exception handling: under no circumstances the application should crash with unhandled exception. No matter how broken an audio file is, the application should either extract necessary data or replace the data with predefined stubs in the output.
* QA-3: If several starting directories are specified, the application should analyze the set for nesting and/or duplication in order to scan each real directory only once.

# Limitations

* L-1: The application should be developed using Java as the most convenient cross-platform environment.
* L-2: See [DS-1](#DS_1) for JRE version and configuration details.
* L-3: JRE setup and configuration process are out of this project scope and therefore are NOT described in any product/project documentation.
* L-4: Multi-platform capabilities of the application are the next: it should work with Windows and Android 5.0+ (see [DS-1.1](#DS_1_1)).

# Detailed specifications

**DS-1: Java**

DS-1.1: Minimal JRE version – 8.0.60.

DS-1.2: The application should work with just standard JRE, i.e. without any additional specific libraries and/or tools.

**DS-2: Messages**

DS-2.1: Usage message: “Usage: java -jar AudioCataloger.jar [DuplicatesOnly] HtmlOutputFileName CsvOutputFileName StartingDirectory1 [... StartingDirectoryN]”.

DS-2.2: Error messages:

* “The following directory is not found or is inaccessible: {full path}”;
* “The following file is not writable: {full path}”.
* “No video header or video tag data in: {full path}”.

**DS-3: log**

DS-3.1: The application should display its current activity in the console. No log files needed.

DS-3.2: The console log format is up to developers.

DS-3.3: [Optional] The application should list and describe the list of given command line parameters in the log.

**DS-4: File format and size**

DS-4.1: The application should process files in the following formats: see [BR-1](#BR_1).

DS-4.2: The application should process files up to 12 GB (inclusive).

DS-4.3: If a broken file or a file with unsupported inner structure detected, the application should display a log message “No audio header or audio tag data in: {full path}”.