

Image and Video Processor Specifications

Project Description

This application is a comprehensive tool designed to facilitate batch processing of image and video files. It allows users to resize images, convert their formats, and manage file naming with a flexible and user-friendly interface.

Features

- **Batch Processing:** Supports processing multiple files at once to streamline workflow.
- **Image Resizing:** Offers standard and custom size options for image resizing to meet various requirements.
- **Format Conversion:** Enables conversion between popular image formats (e.g., JPG, PNG) and maintains video formats.
- **Advanced File Naming:** Provides options for setting filename prefixes, numerical sequencing, and an optional suffix for better file organization.
- **Interactive File List:** Displays selected files in a list with the option to deselect any, enhancing user control over batch processing.
- **Output Control:** Users can specify the output directory for saving processed files, ensuring organized file storage.

Libraries and Technologies

- **Tkinter:** Python's standard GUI library used for creating the application's graphical user interface.
- **PIL (Pillow):** An advanced imaging library in Python, used for handling image resizing, format conversion, and other image manipulations.
- **os module:** Utilized for interacting with the operating system, managing file paths, and directories.
- **shutil module:** Employed for high-level file operations like copying files.

System Requirements

- **Python 3.x:** The script is developed and tested in Python 3, ensuring compatibility with its standard libraries.
- **Pillow:** Requires the latest version of the Pillow library for image processing features.

Installation and Setup

1. **Python Installation:** Ensure Python 3.x is installed on your system.
2. **Pillow Library:** Install Pillow using `pip install pillow` if it's not already installed.

Usage Guide

1. **Starting the Application:** Run the script to open the graphical user interface.
2. **File Selection:** Use the "Browse Files" button to select the desired image and video files for processing.
3. **Resize and Format Options:** Choose from predefined resize options or set custom dimensions for images, and select the desired output format.
4. **Setting Output Preferences:** Define the filename prefix, numbering, and select the output directory.
5. **Processing:** Click on "Process Files" to begin processing based on the chosen settings. The progress will be shown, and files will be saved to the specified location.

Change Log

- **Initial Implementation:** Developed the core functionality with basic file selection and processing.
- **UI Enhancement:** Improved the user interface for better user interaction and visual appeal.
- **Resize and Format Features:** Added image resizing and format conversion capabilities.
- **Filename Management:** Implemented advanced naming options including prefix, numbering, and suffix addition.
- **Listbox for File Selection:** Integrated a listbox to display and manage selected files.
- **Error Handling:** Enhanced system robustness with improved error handling mechanisms.

Future Enhancements

- Video processing capabilities like resizing and format conversion could be developed to make the application more versatile.
- Integration of batch processing optimizations to handle large sets of files more efficiently.