USPTO Patent Analyser GUI Documentation

Overview

The USPTO Patent Analyser is a graphical application that helps users download, process, and classify patent data from the USPTO database. The application provides functionality for:

- Downloading yearly patent zip files
- Unzipping downloaded files
- Processing patents and identifying examples
- Classifying examples based on tense
- Viewing database tables (Patent examples and Patent statistics)
- Exporting data to CSV format

Main Functions

1. Download Patents

Function: `download_patents_only()`
Purpose: Downloads patent files from the USPTO database for specified years.
How to use:

1. Select patent type (Grant or Application)
2. Choose year(s) to download (single year or range)
3. Set output directory
4. Click "Download Patents" button

2. Unzip Patent Files

Function: `unzip_patents_only()`
Purpose: Extracts downloaded patent files from ZIP format.
How to use:

1. Ensure patents are downloaded
2. Click "Unzip Patent Files" button
3. Files will be extracted to the specified output directory

3. Process Patent Data

Function: `process_patents_only()`
Purpose: Analyses patent files to extract examples and statistics.
How to use:

1. Ensure files are unzipped
2. Set number of concurrent files (1-8 recommended)
3. Click "Process Patent Data" button

4. Complete Process

Function: `download_patents()`
Purpose: Executes all three steps (download, unzip, process) in sequence.
How to use:

1. Configure all settings
2. Click "Run Complete Process" button

5. View Database Tables

Function: `view_database_tables()`
Purpose: Displays processed patent data in a tabulated format.
How to use:

1. Click "View Database Tables" button
2. Use tabs to switch between different data views
3. Double-click entries to view full details
4. Use pagination controls to navigate through data

Key Features

Data Navigation

- **Pagination**: Navigate through large datasets using page controls
- **Sorting**: Click column headers to sort data

Data Export

Function: `export_to_csv()`
Purpose: Exports table data to CSV format.
How to use:

1. View database tables
2. Click "Export to CSV" button
3. Choose save location

Tooltips

- Hover over column headers for descriptions
- Tooltips provide additional information about functionality

Input Validation

Year Validation

Function: `validate_year()`

- Accepts years between 1976 and 2025
- Validates both single years and ranges

Patent Type Validation

Function: `validate_kind()`

- Accepts either "grant" or "application"
- Ensures proper USPTO database selection

Concurrent Files Validation

- Accepts values between 1 and 16
- Recommended range: 1-8 files

Error Handling

- Displays error messages in log window
- Prevents invalid operations
- Provides feedback for all operations

Process Control

Function: `stop_operation()`
Purpose: Safely stops running operations.
How to use:

1. Click "Stop" button during any operation
2. Wait for current process to complete safely

Interface Elements

Main Controls

- Patent Type selection (Grant/Application)
- Year Selection (Single/Range)
- Output Directory setting
- Concurrent Files control
- Rows to Display setting

Progress Monitoring

- Log window shows real-time progress
- Status messages for all operations
- Error reporting and feedback

Data Viewing

- Table view with sortable columns
- Pagination controls
- Export functionality
- Detailed view for individual records

Best Practices

1. **Resource Management**
    - Start with smaller date ranges for testing
    - Use recommended concurrent files range (1-8)
    - Monitor system resources during processing
2. **Data Organisation**
    - Use dedicated output directories
    - Maintain consistent naming conventions
    - Regular data exports for backup
3. **Error Recovery**
    - Check log messages for issues
    - Use stop button for safe process termination
    - Verify input parameters before long operations

Technical Requirements

- Python 3.x
- Required libraries: tkinter, sqlite3, requests, beautifulsoup4
- Sufficient disk space for patent data
- Internet connection for downloads