Software Requirements Specification

for

PDF Split and Merge

Requirements for Version 2.1.0

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February 6, 2010

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1. Introduction

1.1 Purpose

This document details the software requirements specification for the *PDF Split and Merge v2.1.0* open source project. It will later be used as a base for the extension of the existing software itself. This document follows the IEEE standard for software requirements specification documents.

PDF is the most popular file format for secure, dependable electronic information exchange. It is used by more than half billion people and has become one of the world's most trusted technologies. PDF files can be viewed from almost any platform (Macintosh®, Windows®, UNIX® and LINUX® as well as numerous mobile platforms and devices) but the manipulation of these files is not usually free.

The purpose of this project is to provide an easy way to handle pdf files efficiently and free through a simple graphical interface.

1.2 Document Conventions

PDF Split and Merge was created prior to this document, so all requirements stated here are already satisfied. It is very important to update this document with every future requirement and clarify its priority for consistency purposes, so that this document can remain useful.

Because of the fact that PDFsam is already implemented, parts of this document have a style similar to a manual document.

Some technical information has been included. Readers can refer to Appendix A at the end of the document for terms definition (glossary).

1.3 Intended Audience and Reading Suggestions

This Software Requirements document is intended for:

- Developers who can review project's capabilities and more easily understand where their efforts should be targeted to improve or add more features to it (design and code the application – it sets the guidelines for future development).
- Project testers can use this document as a base for their testing strategy as some bugs are easier to find using a requirements document. This way testing becomes more methodically organized.
- End users of this application who wish to read about what this project can do.

1.4 Project Scope

PDF Split and Merge is a FOSS tool that can split, merge and manipulate PDF documents. It provides a graphical Interface (GUI) and a shell Interface (Console). It is available in two versions, basic and enhanced, both are open source.

The GUI provides the user with all the functionality needed to handle a PDF file (or more files together). The functionalities are distributed in plugins. Each plugin performs a specific function and loads in the main GUI.

In the *basic* version, the GUI contains six plugins:

- Alternate Mix

- Merge/Extract

- Rotate

- Split

- Visual document composer

- Visual reorder
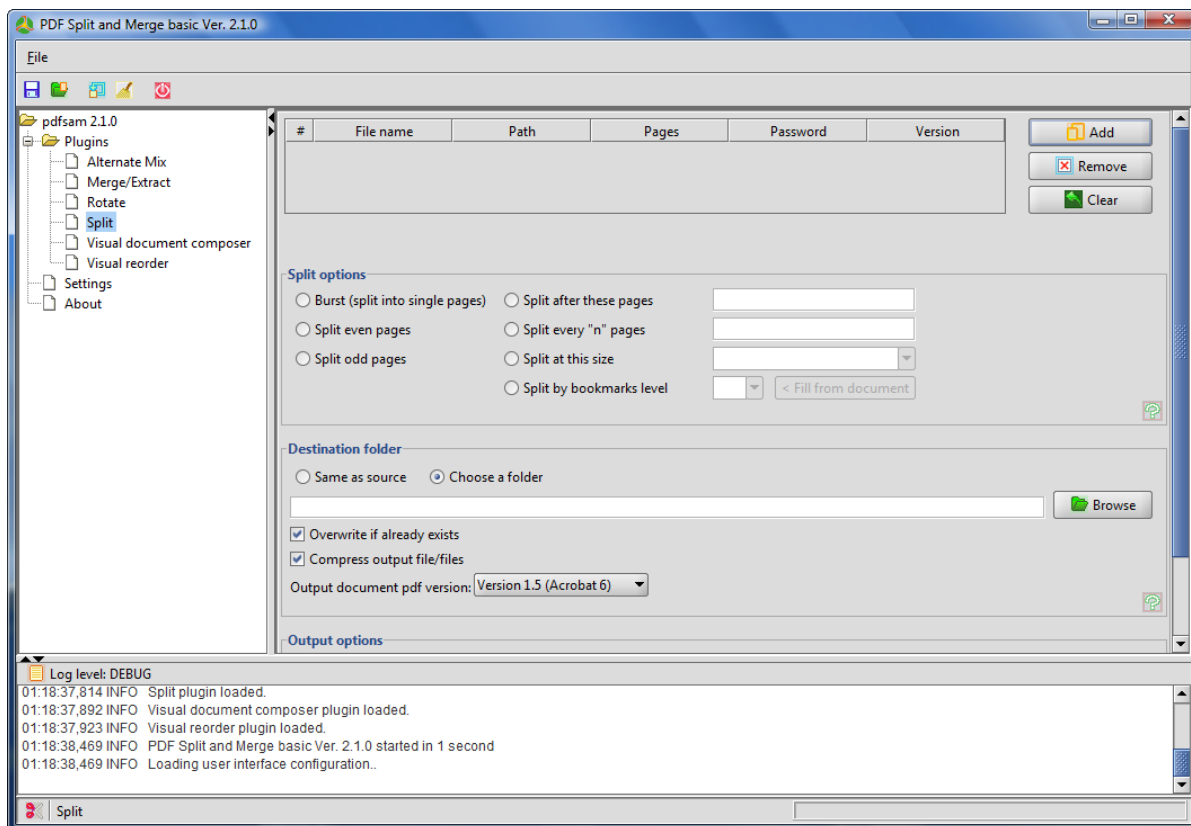
This is a picture of a plugin of PDFsam

The Console is a command-line application. It's the core application and it provides both the enhanced and the basic features for pdf manipulation.

1.5 References

- The official website of the project contains a brief description of the project, screenshots, links, FAQ's and a blog with all the news of the project: http://www.pdfsam.org/
- Project's development and distribution website at Sourceforge. It provides the project's source code, a bug reporting and tracking system, and all the available file downloads of the project: http://sourceforge.net/projects/pdfsam/
- PDFsam wiki: http://www.pdfsam.org/mediawiki/

2. Overall Description

2.1 Product Perspective

PDF Split and Merge is a multi functional tool for manipulating pdf files. It is free and open source with a GNU General Public License (GPL). Although there are many programs for viewing pdfs, there is not any program to handle pdfs with so many features as PDFsam. The fact that it is open source is an extra motive for the users who have the knowledge to help with the project's development. In addition, there is also an enhanced version of the software that provides even more capabilities.

2.2 Product Features

The *basic* version provides:

− Splitting pdf documents (into chapters, single pages, etc).

− Merging many pdf documents or subsections of them.

− Extract section from a pdf document in a single pdf document.

− Mix alternate pages taken from two pdf documents in straight or reverse order into a single document.

− Rotate pages of the selected pdf documents.

− Visually reorder pages of a selected pdf document.

− Visually compose a document, dragging pages from selected pdf documents.

− Save and load the working environment, so that recurrent jobs are automated.

− Managing PDFsam settings and setting an environment to load at start up.

Any of those features can be executed as command prompt from the command line Console application.
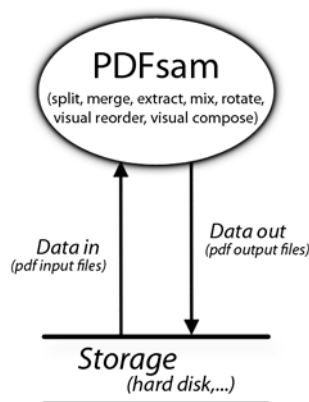
A Level 1 data-flow diagram (DFD)

2.3 User Classes and Characteristics

This project refers to several types of users of any computer system. However, this project is meant to be used by two major user classes:

1. General users who can use the software to cover specific needs:

   – People of all age groups without much experience because the PDFsam interface is pleasant and user friendly and its functions are relatively simple.

   – Users with more experience on computer systems could use some advanced features offered by PDFsam, such as executing its functions in command prompt from the command line application. A command line console could be useful for batch jobs, server jobs (e.g. to manipulate larger pdf files)

2. Open source software developers and contributors:

   – Software Developers: People with very good knowledge of programming language project, in order to understand and be able to extend project's source code.

   – Translators: People of all age groups with very good knowledge of a language not included in the current translation list.

   – Anyone who wants to help FOSS community. The whole project is based on the conception of Free and Open Source Software, so all people are welcome to contribute any way the can/like.

2.4 Operating Environment

PDFsam is platform independent and it runs on every platform where a Java Virtual Machine is available (requires a JVM version 1.6 or higher).

It has been tested on:

– Microsoft Windows

– GNU/Linux distributions

– Mac OS X

Hardware requirements of the project:

– Maximum memory usage: 254MB* (by default)

– Disk space needed: 13.9MB

*it depends on the size of the pdf files. User can change the default value of memory with the appropriate commands if he has to handle large pdf files.

2.5 Design and Implementation Constraints

PDFsam is platform independent and is written in Java. Its user interface is written with Java Swing, so anyone who wishes to work on further development of PDFsam has to know this programming language.

PDFsam is GNU GPLv2 licensed and the PDFsam-console is dual licensed (GPLv2 and LGPLv2). Everyone, that does or is going to develop or use PDFsam, should agree and fully accept the terms of this kind of license.

2.6 User Documentation

User documentation components are available on project's official website:

– http://www.pdfsam.org/ (in the Resources section)

Refer to section 1.5 of this document for further information.

2.7 Assumptions and Dependencies

A working Java Runtime Environment version 1.6 or above is necessary.

3. System Features

PDFsam consists of a number of plugins which constitute its basic functions, and some additional features that make the whole process easier and faster. All plugins are located in the "plugins tree" on the left side of the GUI Interface.

This section describes the functional requirements of the application and the features it provides. System features are described in detail to help the future extension and testing of the system. Features stated here are already parts of the implemented system so no prioritization is needed. Priority is needed for features to be developed that will be added to this document later.

3.1 System Feature 1 - Split

Split a pdf document through the GUI Interface. This plugin allows you to set a number of options that will be used to split the document.
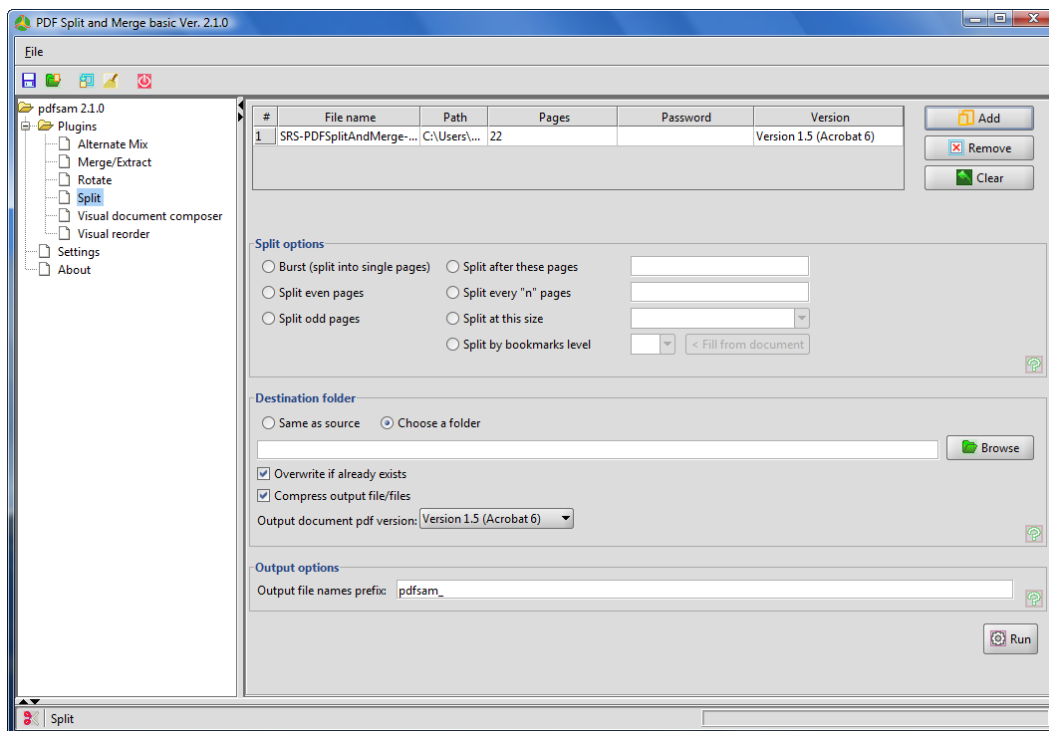
3.1.1 Description

The user can divide a pdf document into parts, following some options for how to split the document. Then he can save the output pdf files in a directory he wants.
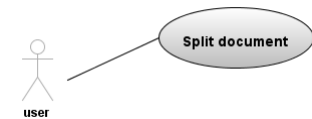
3.1.2 Stimulus/Response Sequences

The user has to select the Split option from the plugins tree (or press the "S" key) to display the split panel.

This is a screenshot of the Split plugin

The GUI Split panel consists of the following parts:

➤ Selection panel: The user selects the document he wants to split from a directory. When the file is imported, some information about the file displayed (such as pages number, pdf version…). If the document is protected the user have to enter the password to the appropriate field and then reload the pdf.

➤ Split options: The user can choose between 7 types of splitting:

- *Burst:* the input file will be split in single pages.

- *Split every "n" pages:* the input file will be split every "n" pages.

- *Split even pages:* the input file will be split at every even page.

- *Split odd pages:* the input file will be split at every odd page.

- *Split after these pages:* the input file will be split at the given pages numbers.

- *Split at this size:* the input file will be split in files of the given size (roughly).

- *Split by bookmark level:* the input file will be split at every page linked by the bookmarks of the selected level (this can be very useful if you want to split an e-book in chapters).

➤ Destination folder: The user selects the destination folder for the output files (specific or same as source). Also, he can select whether he wants the output files to be compressed or not, and the pdf version of the generated documents.

➤ Output options: Here the user can define a pattern that will generate filenames for the output files. The available complex prefixes that can be used are:

- **[CURRENTPAGE]:** This prefix variable ensures unique output filenames and it's replaced with the current page number. The number of digits of the generated prefix can be specified appending any number of "#" at the prefix name, inside the square brackets (e.g. the prefix [CURRENTPAGE###] will generate prefixes like '001', '002'...).

- **[TIMESTAMP]:** This prefix variable ensures unique output filenames and it's replaced with the current date and time. Time has milliseconds precision and the replaced variable will be something like "20100206_045107232" that is "YYYYMMDD_HHmmssSSS".

- **[FILENUMBER]:** This prefix variable ensures unique output filenames and it's replaced with a file number according to the output order. The number of digits of the generated prefix can be specified appending any number of '#' at the prefix name, inside the square brackets (e.g. [FILENUMBER###] will generate prefixes like '001', '002'...). A starting number can be appended at the prefix name inside the square brackets (e.g. [FILENUMBER13] will generate prefixes like '13', '14'...). Finally, it can be combined a started number and the number of digits (e.g. [FILENUMBER###13] will generate prefixes like '013', '014'...).

- **[BASENAME]:** This prefix variable is replaced with the original name of the input document. It does not ensure unique output filenames and it must be used together with other variables. If it is used alone, the system will use the default filename pattern.

- **[BOOKMARK_NAME]:** This prefix variable can be used only when splitting by bookmarks level. It ensures unique output filenames (unless two or more bookmarks have the same name) and it enables variable substitution. It's replaced with the bookmark name. Some characters of the bookmark name could be stripped if they are not valid character for a file name.

- If left blank, the output filenames will take the *default pattern* [CURRENTPAGE] _ [BASENAME].
- It can be written anything before or after of these prefixes.

➢ RUN button: After the user sets all these parameters, he presses the RUN button and the splitting starts.

3.1.3 Functional Requirements

REQ-1: The user can split only once document at a time.

REQ-2: The compression of the output files requires pdf version 1.5 or above.

REQ-3: The number of digits that can be used for the unique [FILENUMBER] prefix must be 10 or less.
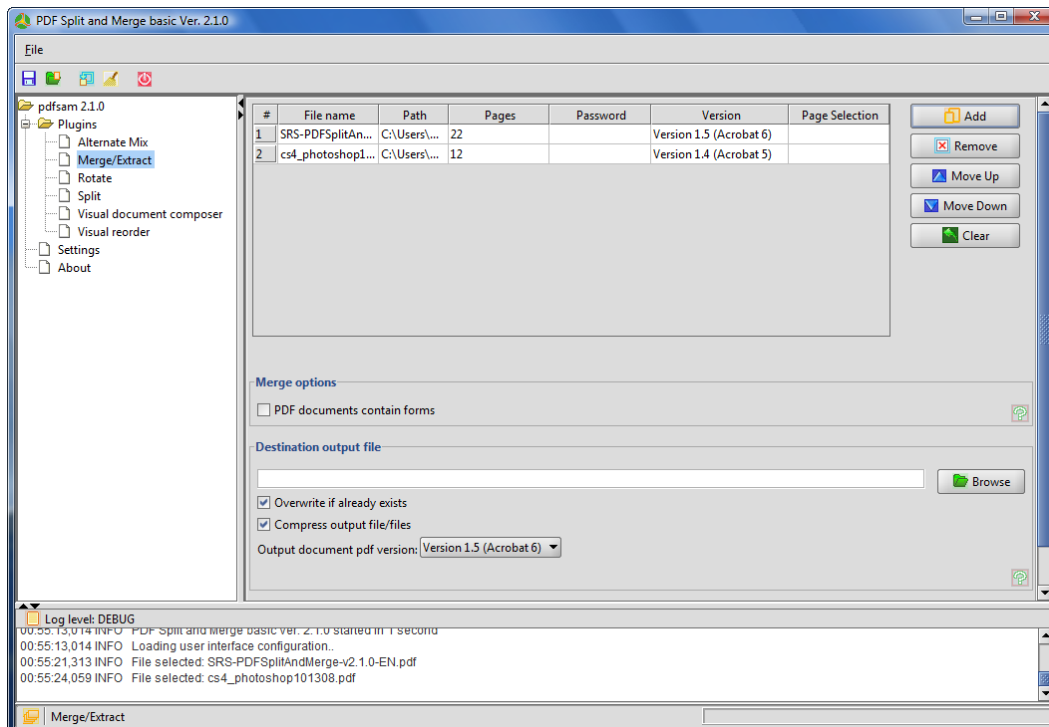
3.2 System Feature 2 - Merge/Extract

Merge many pdf documents or subsections of them.

Extract sections of a document into a single document.

3.2.1 Description

Users can merge many pdf documents or subsections of them together. In the same way, they can extract some sections of a pdf document into a single document.

This is a screenshot of the Merge/Extract plugin

3.2.2   Stimulus/Response Sequences

The user has to select the Merge/Extract option from the plugins tree (or press the "M" key) to display the merge/extract panel.

The GUI Merge/Extract panel enables the user to select more than one file to handle. Once the user selects the file/files they are automatically inserted into the selection table with some specific details. Now, the user can change the order and/or select the pages of the file/files that he wants to be included in the final document.

In the Page Selection column of the table, user can write:

– "All": to merge the whole document.

– "page - to page": to merge pages between "page" and "to page" (e.g. 8-15 if he want to merge pages between 8 and 15).

– "page -": to merge pages starting from "page" till the end of the document.

– A single page number, if he wants only that page of the document.

– Commas (without any blanks) to separate the different values (e.g. "2,12-16,17-" if he wants to merge page 2, pages between 12 and 16, and all the other pages from page17 to the end).

In the Password column user has to set the password if the document is protected and then reload the file. The user can change the order of the files by using "Move Up" and "Move Down" buttons, or make the list be ordered by the value of a specific column by clicking the header of that column.

The user has the ability to export the list of the selected files as an xml file that can be used as an input file for the console "concat" command, -l option.

If the pdf documents contain forms, the user must add that to the merge options.

Finally, the user selects the output file path or let the PDFsam create one by default to the same folder as one of the imported files. Also, he can select whether he wants the output file to be compressed or not, and the pdf version of the generated document. The user presses the RUN button to start the merging of the files.

3.2.3   Functional Requirements

REQ-1:   pages number in the page selection must be comprehended.

REQ-2:   The compression of the output files requires pdf version 1.5 or above.

3.3 System Feature 3 - Alternate Mix

Mix two pdf documents.

3.3.1   Description

Users may want to combine documents together by taking pages alternatively from two existing pdf documents (e.g. for documents coming from one-sided scanners). The resulting document will be composed by pages taken alternatively from the two input documents.

3.3.2   Stimulus/Response Sequences

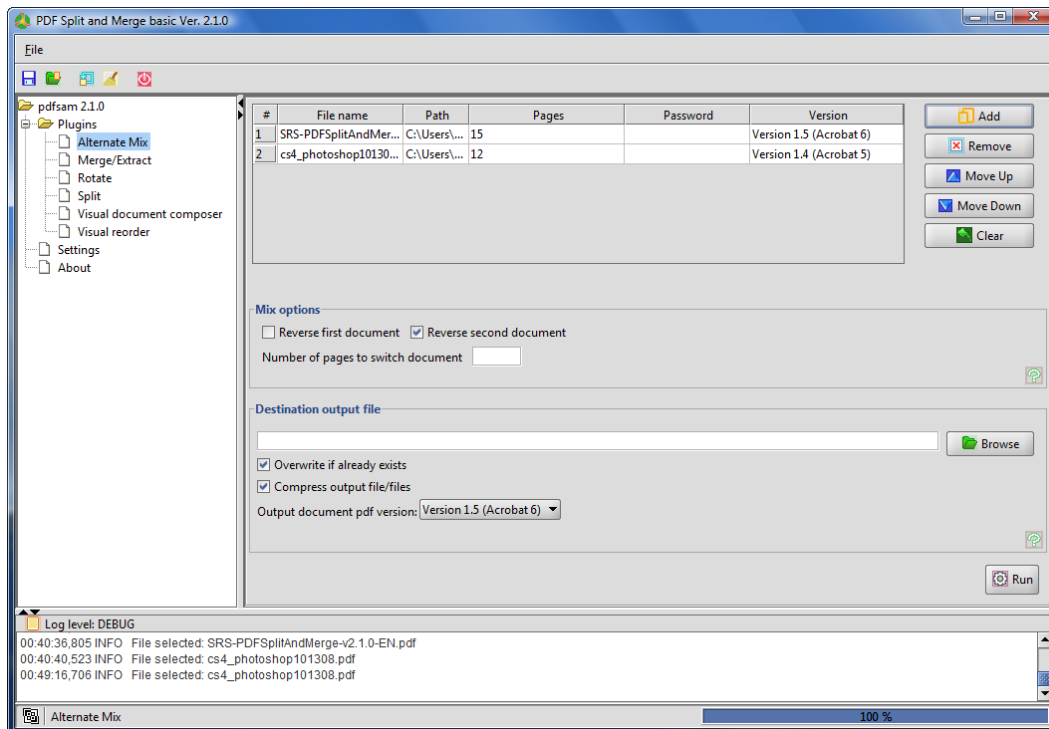The GUI Alternate Mix panel consists of the following parts:

➢ Selection panel: The user selects the two documents that he wants to mix from a directory. When the files are imported, some information about the file displayed

to the selection table (such as pages number, pdf version…). If the documents are protected the user has to enter the password to the appropriate field and then reload the pdf. The user can change the order of the two files by using "Move Up" and "Move Down" buttons, or make the list be ordered by the value of a specific column by clicking the header of that column.

➢ Mix options: The user can modify the following parameters:

   – *Reverse first document:* if he wants to take pages from the first document in reverse order (starting from the last page).

   – *Reverse second document:* if he wants to take pages from the second document in reverse order (starting from the last page).

   – *Number of pages to switch document:* the user with this option can define the step size of the mix. The default behavior is to take one page from the first document and one from the second one. However this step can be configured by this option telling PDFsam how many pages it should take from one document before switching to the other.

➢ Destination output file: The user selects the destination folder for the output files or let the PDFsam create one by default to the same folder as one of the imported files. Also, he can select whether he wants the output files to be compressed or not, and the pdf version of the generated documents.

➢ RUN button: After the user sets the parameters, he presses the RUN button and the mixing of the 2 documents starts.

3.3.3   Functional Requirements

REQ-1:   The user can mix only 2 documents at a time (not more or less).

This is a screenshot of the Alternate Mix plugin

## 3.4 System Feature 4 - Rotate

Rotates pages of pdf documents.

3.4.1 Description

The users have the ability to bulk rotate pages in different documents. With this plugin they cannot select specific pages that they want to rotate but all the document/documents will be rotated.

3.4.2 Stimulus/Response Sequences

The GUI Rotate panel consists of the following parts:

➢ Selection panel: The users select the documents that want to rotate their pages from a directory. When the files are imported, some information about the file displayed to the selection table (such as pages number, pdf version…). If the documents are protected the users has to enter the password to the appropriate field and then reload the pdf. The users cannot select the pages that they want to rotate, so the whole document/documents will be rotated (for specific page rotate refer to section 3.5).
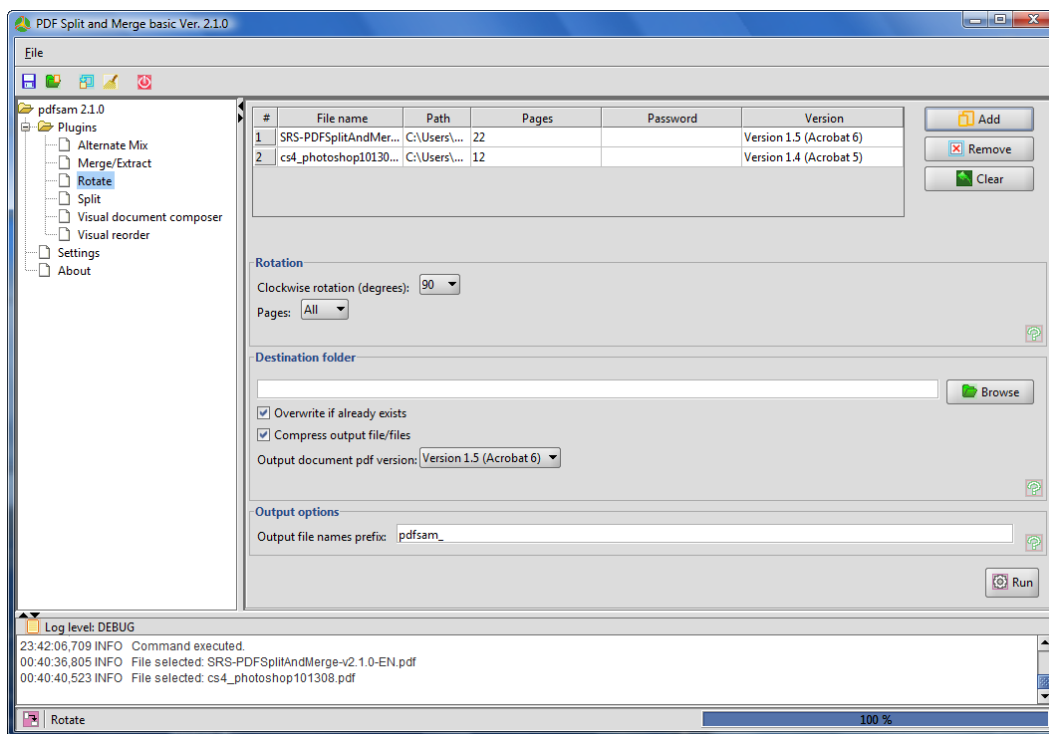
This is a screenshot of the Rotate plugin

➢ Rotation options: The user can modify the following parameters:

– *Clockwise rotation (in degrees):* the users select the rotation degrees. The rotation will be applied clockwise.

– *Pages:* the users select the pages they want to rotate (All, Even or Odd).

➢ Destination output file: The user selects the destination folder for the output files or let the PDFsam create one by default to the same folder as one of the imported files. Also, he can select whether he wants the output files to be compressed or not, and the pdf version of the generated documents.

➢ Output options: Here the user can define a pattern that will generate filenames for the output files. (for the available complex prefixes that can be used refer to section 1)

➢ RUN button: After the user sets the parameters, he presses the RUN button and the rotation of the 2 documents starts.

3.4.3   Functional Requirements

REQ-1:   The compression of the output files requires pdf version 1.5 or above.

REQ-2:   The number of digits that can be used for the unique [FILENUMBER] prefix must be 10 or less.

3.5 System Feature 5 - Visually reorder

Rotate, reorder and delete specific pages from a pdf document.

3.5.1   Description

Users want an easy way to manipulate specific pages of a pdf document through a user friendly graphical interface with simple functions. With this plugin they can rotate, reorder or delete selected pages of a pdf file.

### 3.5.2   Stimulus/Response Sequences

The GUI Visual reorder panel consists of the following parts:

➢ Selection panel: The users select the document that they want to manipulate from a directory. The program creates thumbnails for each page of the pdf document and presents them into a subpanel. When the thumbnails load, the users have the following abilities:

– Select specific pages by clicking on them through the graphical interface.

– Change the order: The user can change pages order by:

- Dragging them.

- Using the "Move Up" and "Move Down" functions.

- Reversing the selected pages: The user can select some pages and reverse their order using the "Reverse" button.

– Zoom-in/Zoom-out: the user can change the zoom level of the thumbnails preview.

– Delete/Undelete: these pages won't be included in the output file.

– Rotate left/right: the user can rotate the selected pages clockwise or anticlockwise.

– Reverse selected pages: The user can select some pages and reverse their order.

– Preview a selected page in a built-in Image viewer.

All these conversions can be accessed either by right clicking on the selected pages or by the graphical interface's buttons. The changes will be applied to the output file.
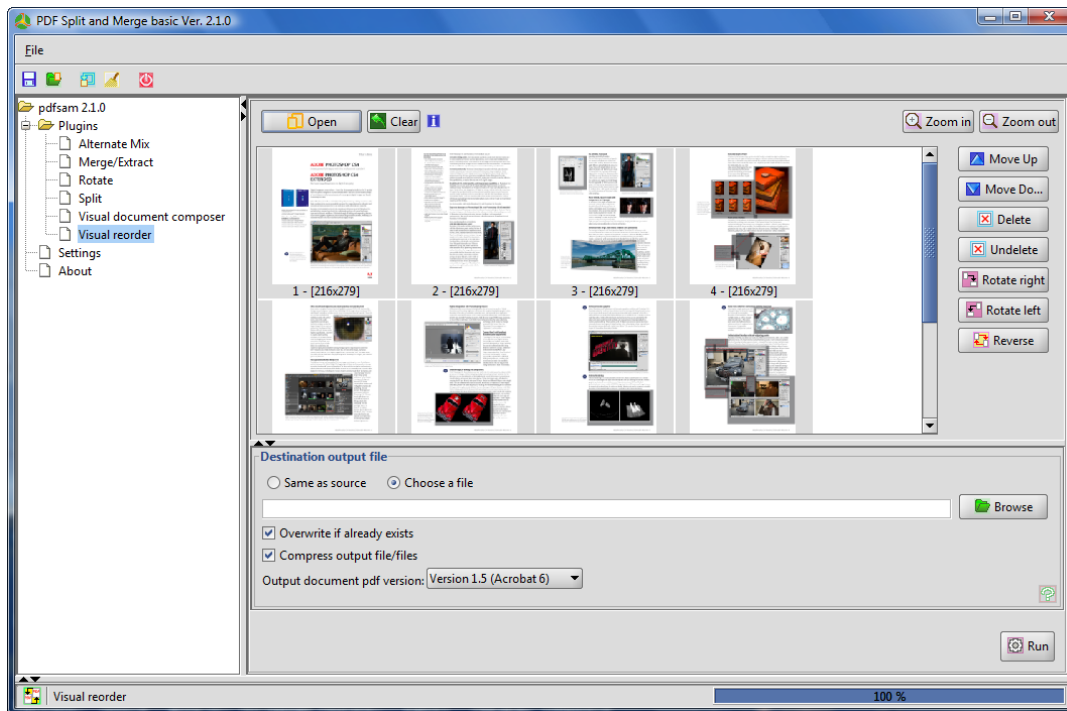
This is a screenshot of the Visual reorder plugin
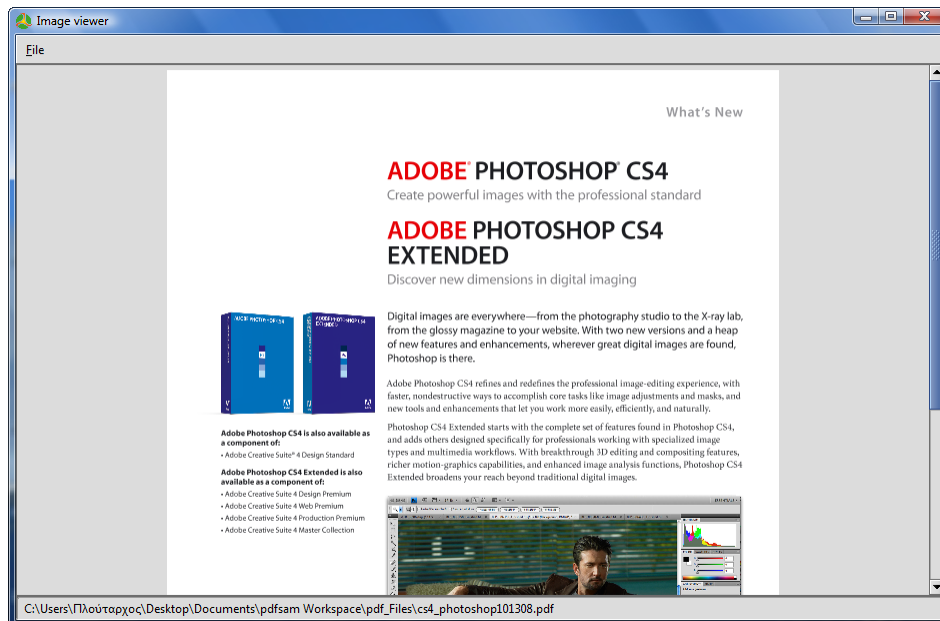
This is a screenshot of the built-in Image viewer

➢ Destination output file: The user selects the destination folder for the output file or lets PDFsam create one by default to the same folder of the imported file.

Also, he can select whether he wants the output file to be compressed or not, and the pdf version of the generated documents.

➢ RUN button: After the user makes the changes he wants, he can press the RUN button to start the operation.

3.5.3   Functional Requirements

REQ-1:   The compression of the output files requires pdf version 1.5 or above.

REQ-2:   The user can manipulate only 1 document at a time (not more).

3.6 System Feature 6 - Visually compose

Compose a pdf document from the pages of others pdf documents.

3.6.1   Description

Users can combine multiple pdf documents in a single pdf document through a user friendly graphical interface with simple utilities. They can open one or more pdf documents and compose a single document that consists of parts of the original documents. They can also make all the basic functions (reorder, rotate, reverse...) to the final document.

3.6.2   Stimulus/Response Sequences

The GUI Visual document composer panel consists of the following parts:

➢ Selection panel: The Selection panel is divided into two parts:

− The panel where the user can open the input pdf documents. The user can open several files together. They can:

• Zoom in/out to change the scale size of the thumbnails.

• Preview any page they want in the Image Viewer.

− And the panel where the user composes the final document. It offers all the basic utilities:

• "Move Up" and "Move Down" functions.

• Delete any page.

• Rotate clockwise and anticlockwise.

• Reversing the selected pages.

• Preview any selected page in the Image Viewer.

All these conversions can be accessed either by right clicking on the selected pages or by the graphical interface's buttons. The changes will be applied to the output file.

➢ Destination output file: The user selects the destination folder for the output file or sets the same output folder of an imported file. Also, he can select whether he wants the output file to be compressed or not, and the pdf version of the generated documents.

➢ RUN button: After the user makes the changes he wants, he can press the RUN button to start the operation.
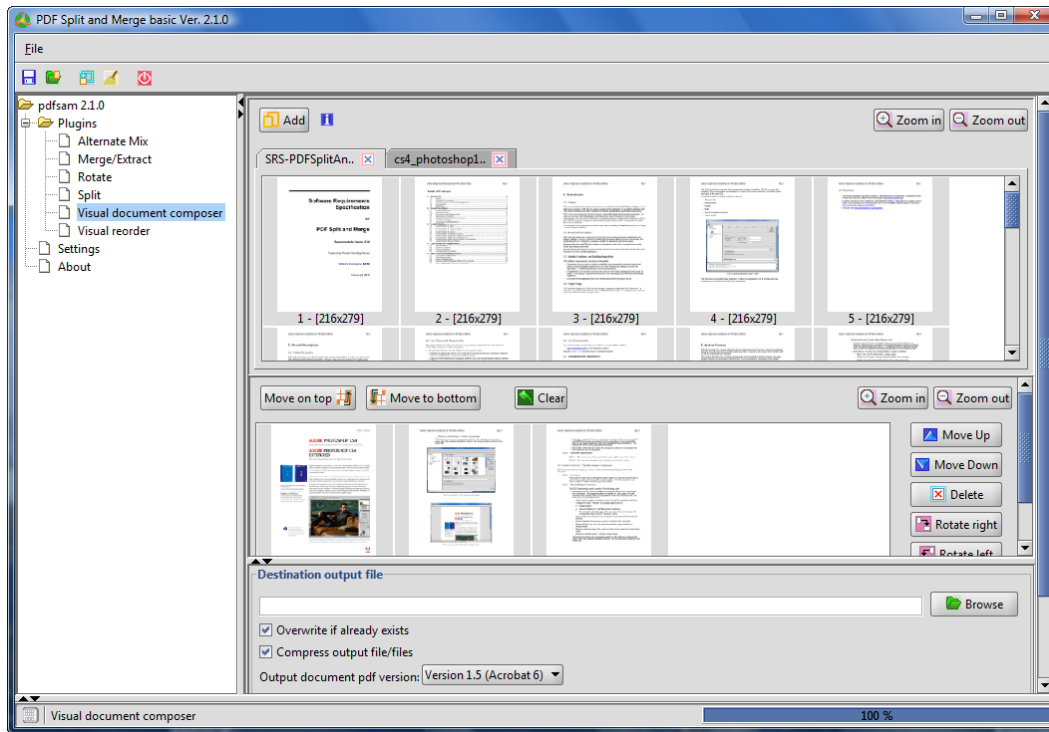
This is a screenshot of the Visual document composer plugin

3.6.3   Functional Requirements

N/A

3.7 System Feature 7 - Working Environment
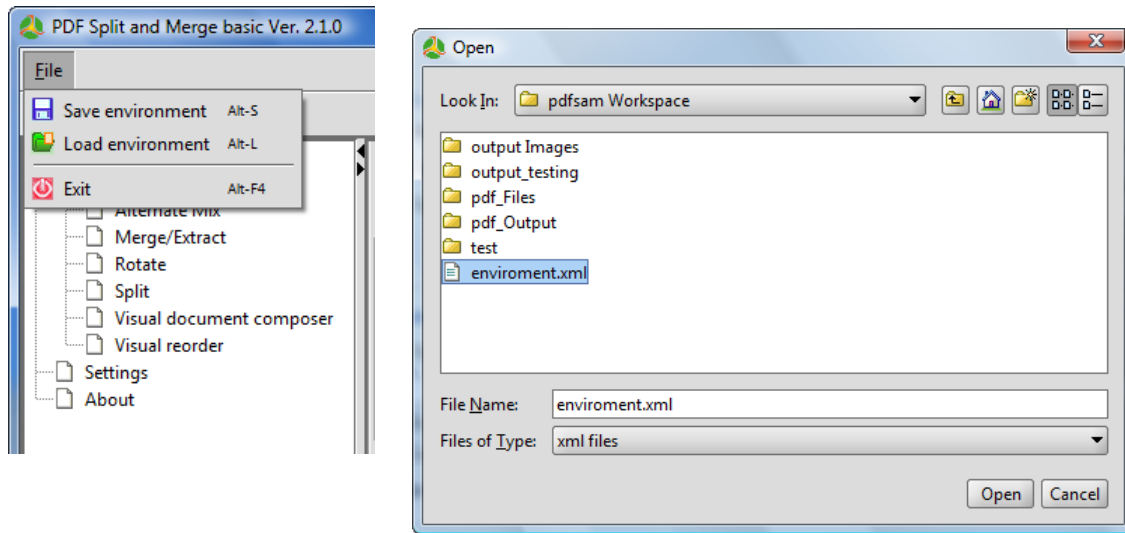
Save/Load a working environment.

3.7.1   Description and Priority

Users have the ability to save the working environment with all the status of every part of the application, so they don't have to set the options of each plugin every time they open the application. This feature is very useful for repetitive tasks, where users save a lot of time with this possibility.

3.7.2   Stimulus/Response Sequences

The user can access this feature by:

➢ Pressing "Alt + S" for save, and "Alt + L" for load the environment.

➢ Pressing the File button at the very top of the window, and then choose Save or Load the environment.

➢ Pressing the appropriate icons under the bar menu.

This is a screenshot of the feature of saving/loading the Working Environment

3.7.3   Functional Requirements

REQ-1:   Operation system on the computer system

3.8   System Feature 8 - Log Panel

Displays log messages for the operation of PDFsam's functions.

3.8.1   Description and Priority

Users can understand how PDFsam responds to their actions by viewing the log messages in the log panel.

3.8.2   Stimulus/Response Sequences

Users can discern the proper function of the application by the messages that are displayed in the log panel. There are 3 kinds of message separating by color:

➤ Black message (DEBUG or INFO) is just an information about what the application is doing.

➤ Blue message (WARNING) is a Warning telling that there's an unexpected situation that the application can handle.

➤ Red message (ERROR or FATAL) is an error that PDFsam can't handle.

There is also the possibility to select and copy the log text, clear it, or save the log text to a file.
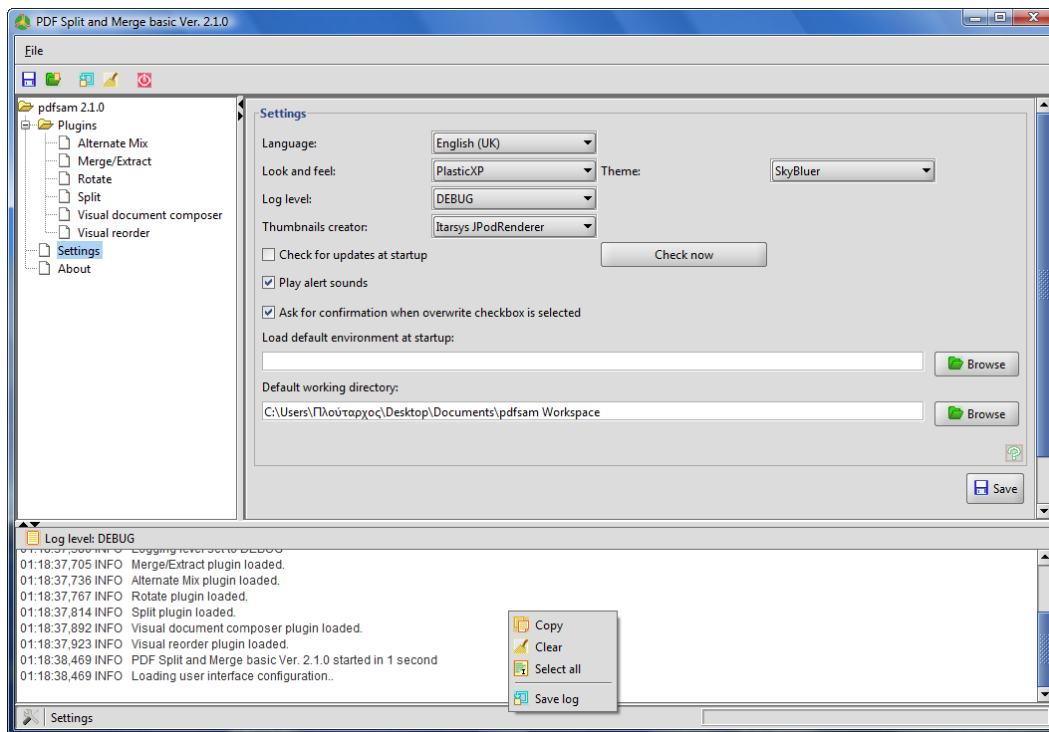
This is a screenshot of the Log panel

3.8.3 Functional Requirements

REQ-1: Log level must not be OFF (in the Settings panel) in order to work this function

3.9 System Feature 9 - Settings

Settings for the main PDFsam's GUI.

3.9.1 Description

Users are allowed to make modifications on PDFsam's working environment, in order to adapt to their preferences and cover their needs more sufficiently. In general, available settings refer on: application language, theme of the application GUI Interface, alert sounds and dialog boxes, the log detail level, the thumbnails creation library, auto update, default working environment and the default working directory.

3.9.2 Stimulus/Response Sequences

The user has to select Settings below the plugins tree and the Settings main panel appears with all the available choices that the user can do. Specifically, in this section a user can modify the following options:

➢ Language: The user can select the preferred application language.

➢ Look and feel: The user sets his preferred PDFsam's look and feel and his preferred theme to be used.

> ➢ Log level: The user can set the detail of the log messages that he want to see in the log panel.

> ➢ The thumbnails creation library

> ➢ Check for updates automatically.

> ➢ Turn on or off alert sounds.

> ➢ Ask for overwrite confirmation: Show a dialogue box asking the user for confirmation when "Overwrite" is selected.

> ➢ Default environment: The user selects a previously saved environment file that will be automatically loaded at start up.

> ➢ Default working directory: The directory where the documents will be saved and loaded by default.

The user has to click the Save button and restart the application to have his changes applied.
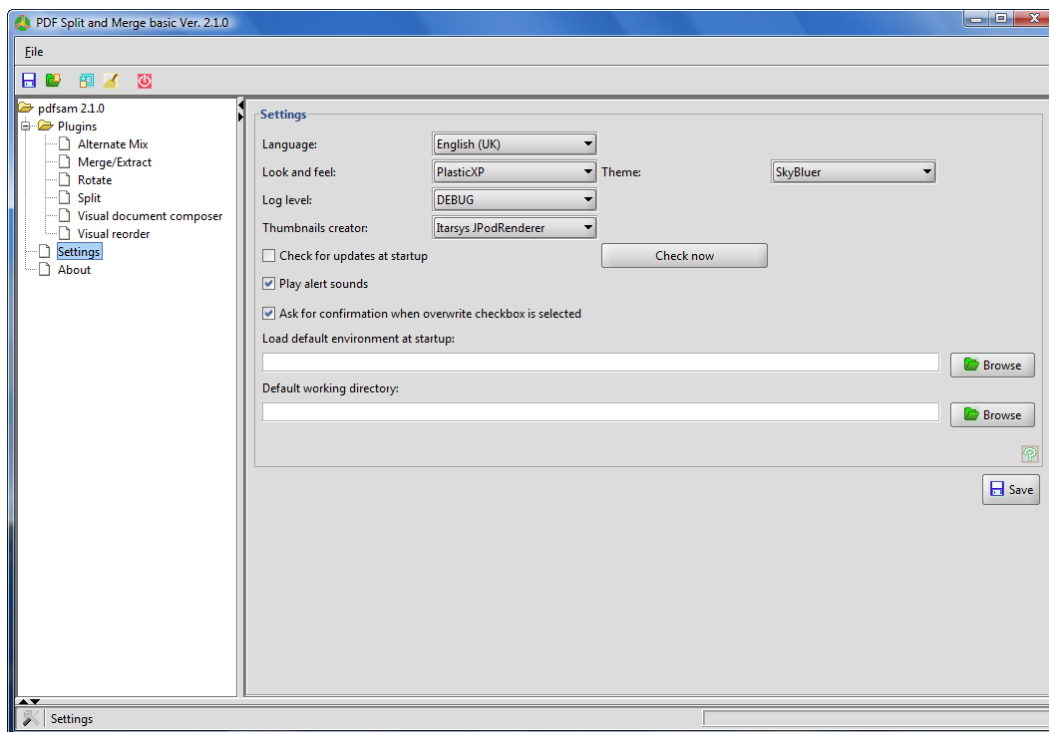
This is a screenshot of the Settings main window

3.9.3   Functional Requirements

REQ-1:   Restart PDFsam application to be the changes applied.

4. External Interface Requirements

4.1 User Interfaces - GUI

The PDFsam GUI is a simple designed user interface which loads all the plugins that constitute the basic functions of the program.

The most common features of PDFsam's GUI are:
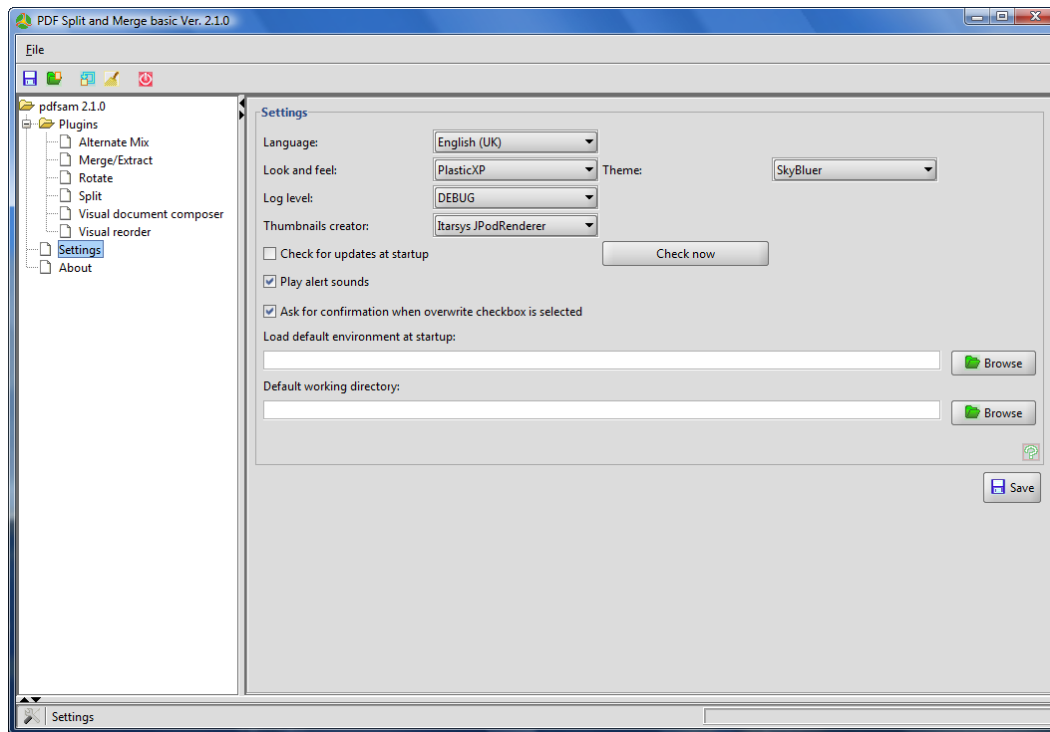
➢ The main toolbar:
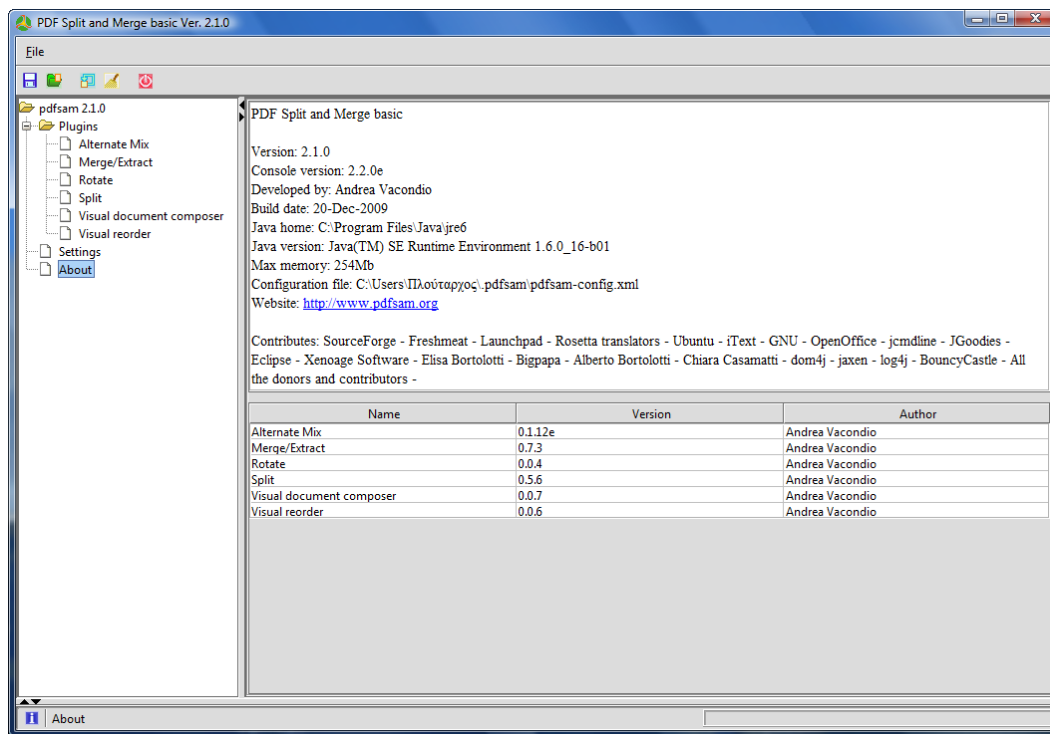
➢ Working environment (load/save):
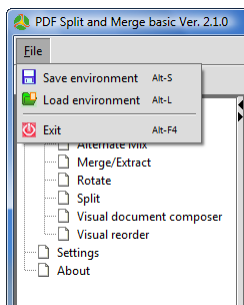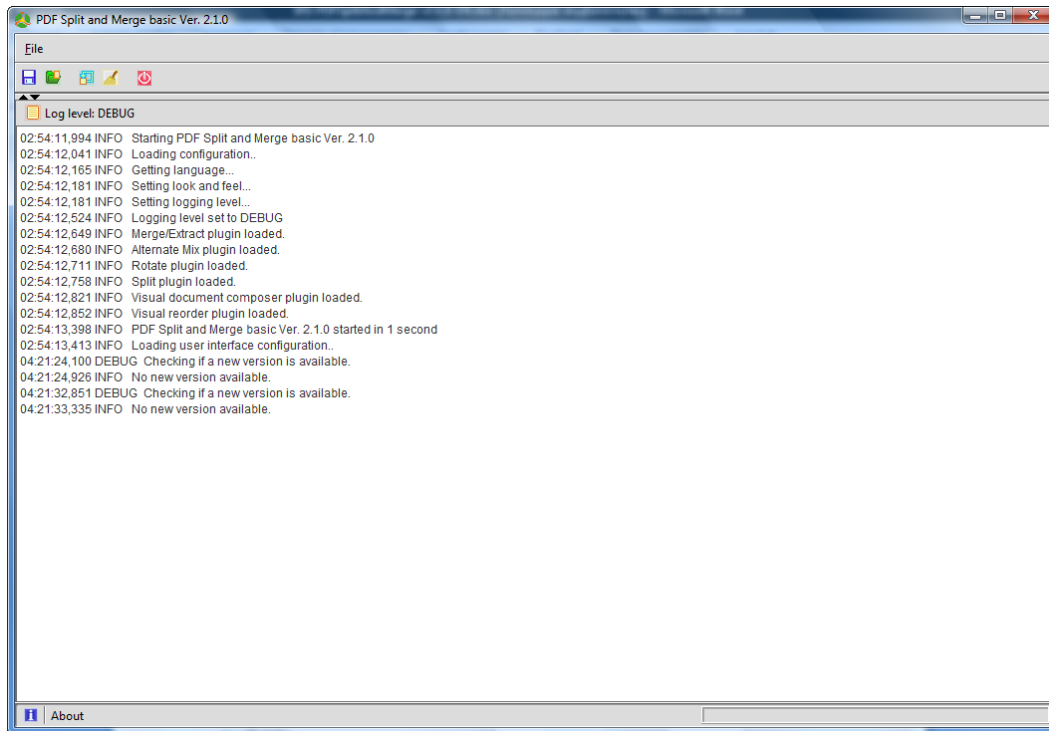
➢ Browsing window for pdf/xml files:
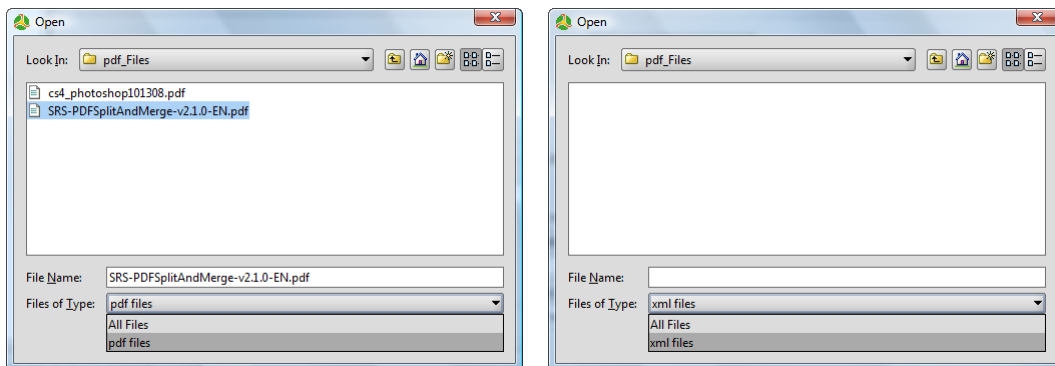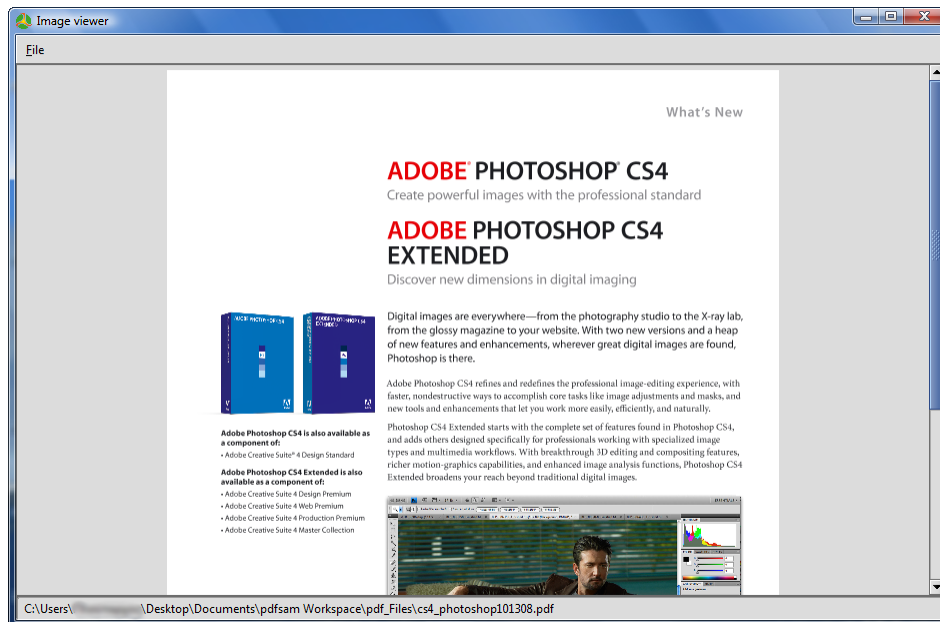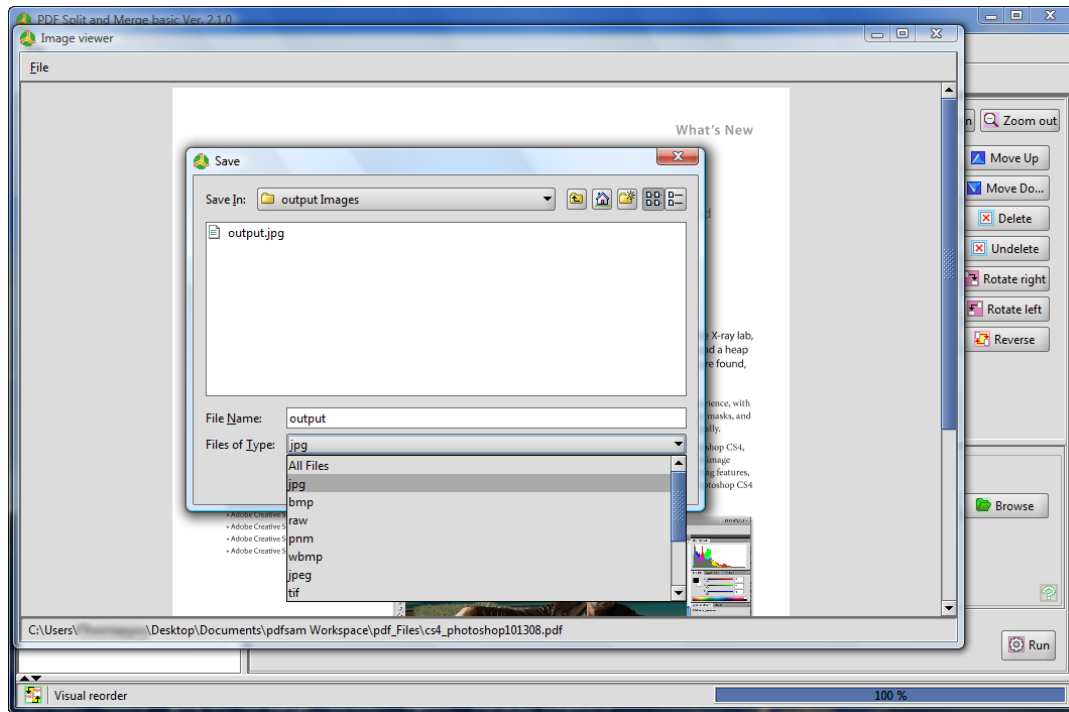
➢ Settings panel:

➢ About panel:

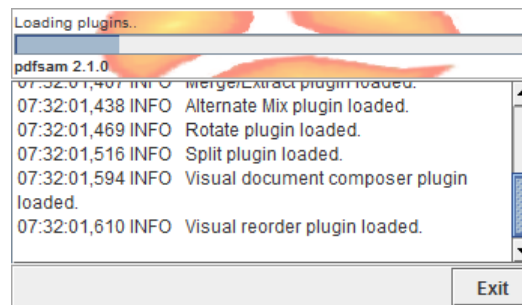➢ Log panel:

➢ Image viewer (to preview pdf pages):

➢ Save image (in the Image viewer):
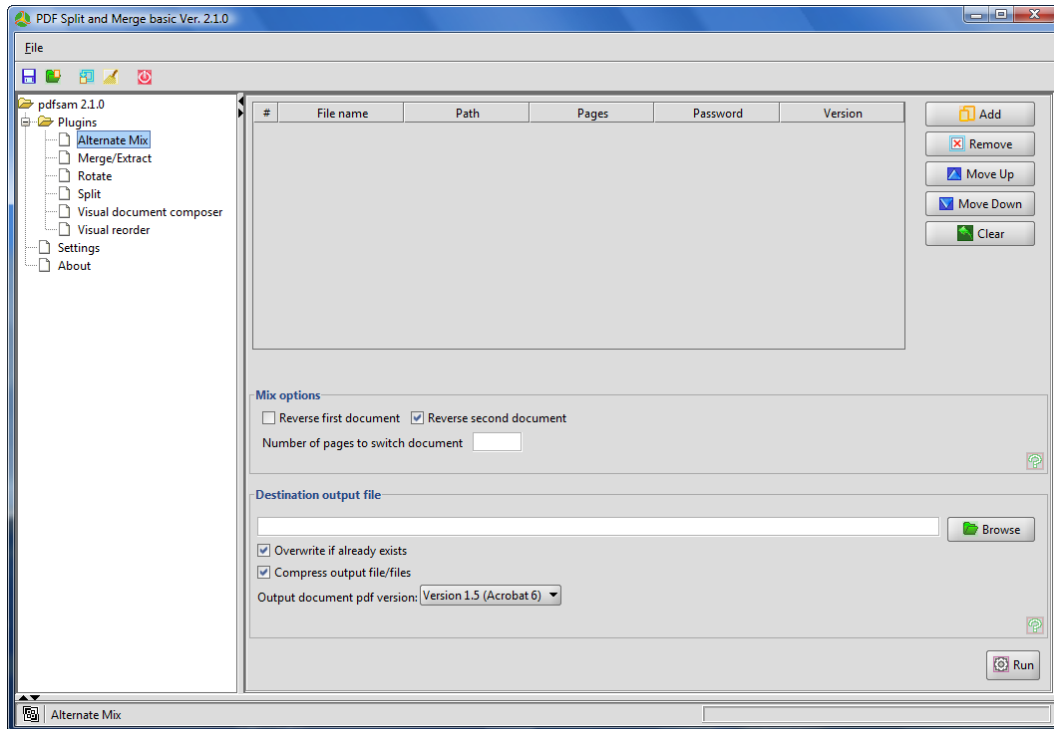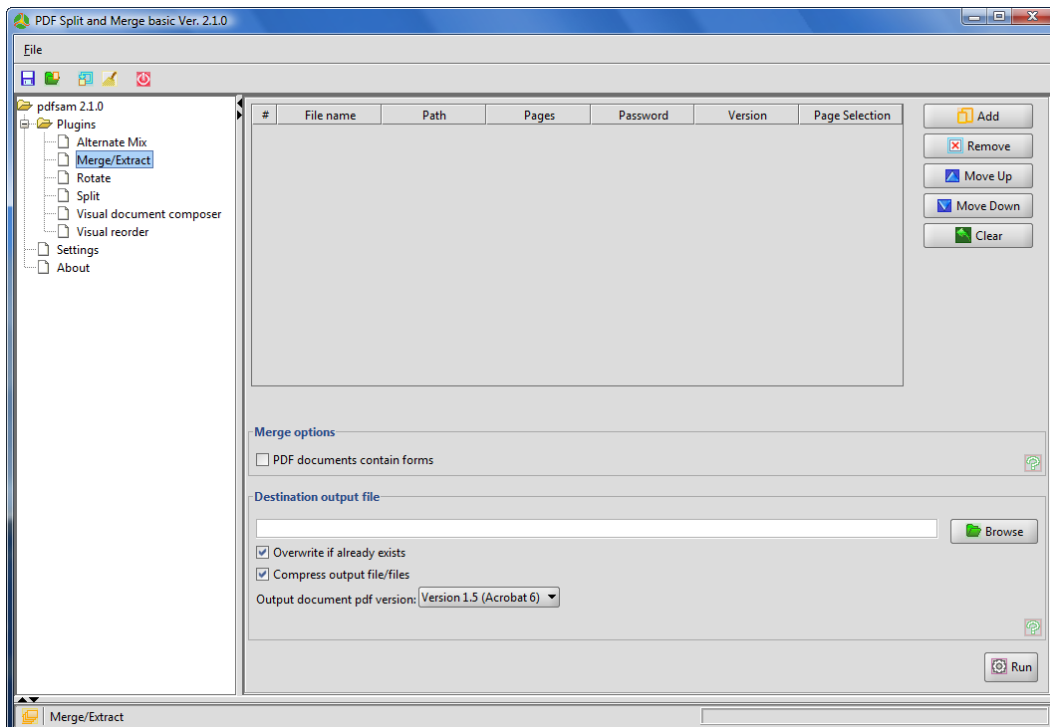

➢ PDFsam loading screen:
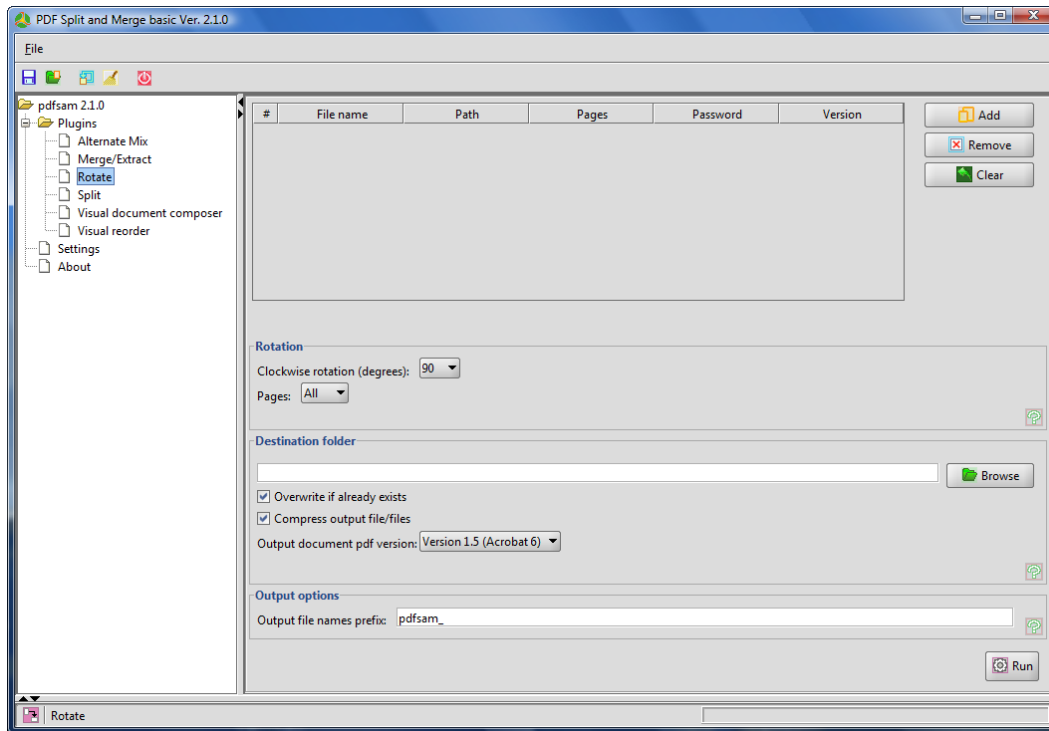
In the *basic* version PDFsam includes six plugins:

➢ Alternate Mix Interface:

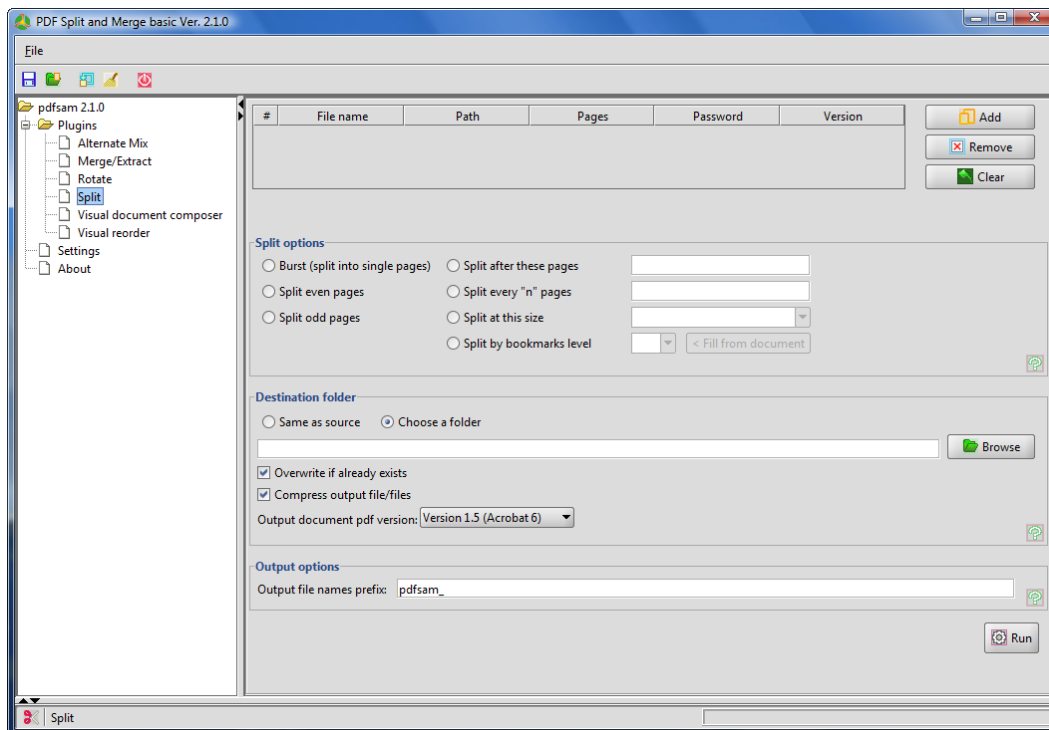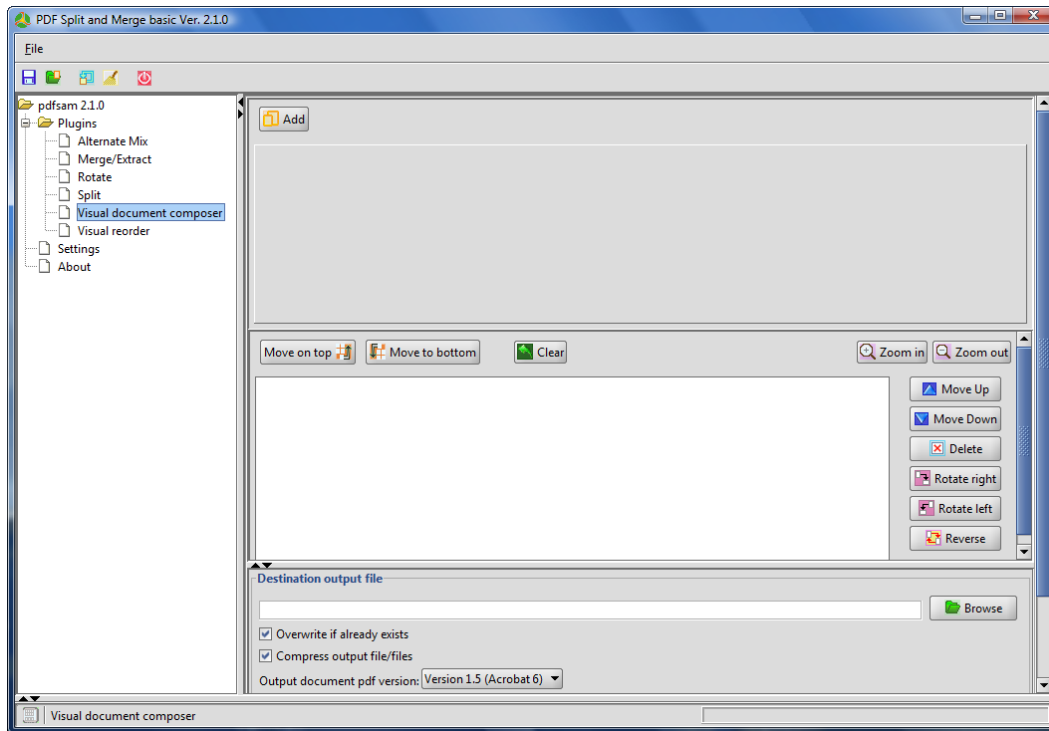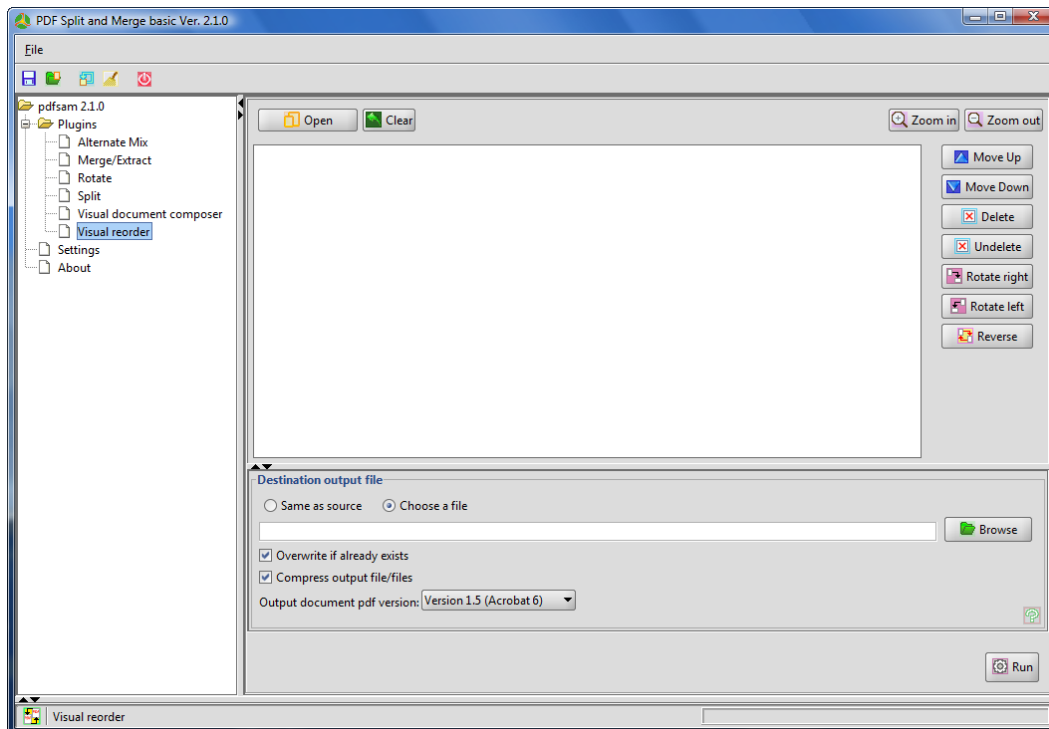
➢ Merge/Extract Interface:

➢ Rotate Interface:

➢ Split Interface:

➢ Visual document composer Interface:

➢ Visual reorder Interface:

PDFsam Embedded help:

Destination output directory
Use the same output folder as the input file or choose a folder.
To choose a folder browse or enter the full path to the destination output directory.
Tick the box if you want to overwrite the output files if they already exist.
Tick the box if you want compressed output files. PDF version 1.5 or above.
Set the pdf version of the ouput document.

Output files prefix
If it contains "[CURRENTPAGE]", "[TIMESTAMP]", "[FILENUMBER]" or "[BOOKMARK_NAME]" it performs variable substitution.
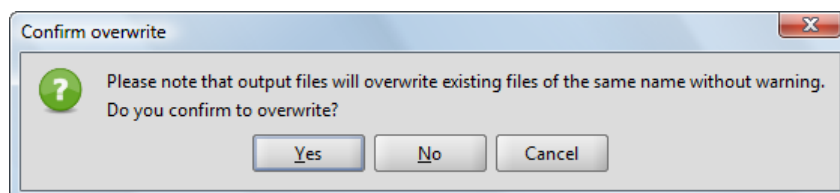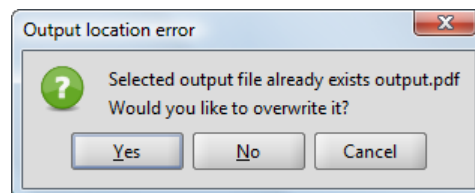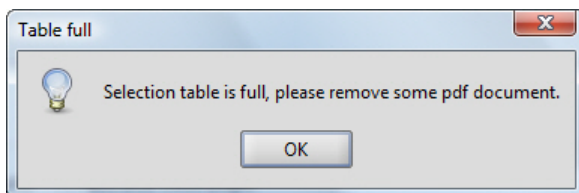Ex. prefix_[BASENAME]_[CURRENTPAGE] generates prefix_FileName_005.pdf.

If it doesn't contain "[CURRENTPAGE]", "[TIMESTAMP]" or "[FILENUMBER]" it generates oldstyle output file names.

Available variables: [CURRENTPAGE], [TIMESTAMP], [BASENAME], [FILENUMBER], [BOOKMARK_NAME].

Settings
- **Language:** Set your preferred language (restart needed).
- **Look and feel:** Set your preferred look and feel and your preferred theme (restart needed).
- **Log level:** Set a log detail level (restart needed).
- **Thumbnails creator:** Set the thumbnails creation library.
- **Check for updates:** Set when new version availability should be checked (restart needed).
- **Play alert sounds:** Turn on or off alert sounds.
- **Ask for overwrite confirmation:** Show a dialogue box asking the user for confirmation when "overwrite" is selected.
- **Default env.:** Select a previously saved env. file that will be automatically loaded at startup.
- **Default working directory:** Select a directory where documents will be saved and loaded by default.

Error/confirmation Messages:

Table full
Selection table is full, please remove some pdf document.
OK

Output location error
Selected output file already exists output.pdf
Would you like to overwrite it?
Yes   No   Cancel

Confirm overwrite
Please note that output files will overwrite existing files of the same name without warning.
Do you confirm to overwrite?
Yes   No   Cancel

The basic keyboard shortcuts that are supported:
- ➢ Alt-S: to save the working Environment.
- ➢ Alt-L: to load the working Environment.
- ➢ Alt-F4: to close the program.

Available translations:

Arabic, Asturian, Bosnian, Brazilian Portuguese, Bulgarian, Catalan, Chinese (Hong Kong),Croatian, Czech, Danish, Dutch, English (UK), Estonian, Finnish, French, Galician, German, Greek, Hebrew, Hiligaynon, Hungarian, Indonesian, Italian, Japanese, Korean, Latvian, Lithuanian, Malayalam, Norwegian Bokmal, Persian, Polish, Portuguese, Russian, Slovak, Slovenian, Spanish, Swedish, Thai, Turkish, Ukrainian, Vietnamese.

As listed here: https://translations.launchpad.net/pdfsam

4.2 Hardware Interfaces

N/A

4.3 Software Interfaces

PDFsam is compatible with every system supports a JRE and pdf files. That means that is independent from the operating system of the computer system on which it runs.

PDFsam runs on every platform where a Java Virtual Machine is available (requires a JVM version 1.6 or higher). It has been tested on various versions of Microsoft Windows, GNU/Linux distributions and Mac OS X.

4.4 Communications Interfaces

PDFsam is not a web application, so the network communication is only necessary to check for software updates.
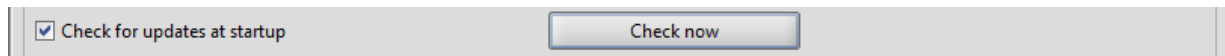
The Check for updates option in the Settings panel

5. Other Nonfunctional Requirements

5.1 Performance Requirements

PDFsam is an application that needs a few system resources to work. This is designed not to delay the system from other key processes. The response time of the program is direct and the application is considered real-time.

Furthermore, the system can check for updates whenever is requested by the user, or automatically when opening the application. In this way PDFsam will be always up-to-date with all new supported features and bug fixes.

5.2 Safety Requirements

The application must ensure that it leaves untouched the input pdf files. No modification is allowed to these files.

Moreover, the application should function even in cases of wrong data insertion or wrong settings. In case of error it should provide users with appropriate help messages.

5.3 Security Requirements

PDFsam does not introduce any security level, since the data it manages is not critical. The users in the application are all equal so there is not the need of any identity management level.

5.4 Software Quality Attributes

This application provides a pleasant and user friendly graphical interface with relatively simple functions. Any user should be able to use PDFsam without any specific knowledge or experience by reading the user manuals (or the help messages that are embedded in the application). Users only need to provide some pdf documents and with just a few clicks they can perform any action.

5.5 Other Requirements – GNU GPL License

The project is released under the GNU General Public License. The philosophy of this license implies some basic principles which apply to the project.

The GPL is a free software license, and therefore it permits people to use and even redistribute the software without being required to pay anyone a fee for doing so.

− The freedom to run the program, for any purpose.
− The freedom to study how the program works, and adapt it to your needs. Access to the source code is a precondition for this.
− The freedom to redistribute copies so you can help your neighbor.
− The freedom to improve the program, and release your improvements to the public, so that the whole community benefits. Access to the source code is a precondition for this.

Source: http://www.gnu.org/copyleft/gpl.html

6. Appendix

6.1 Appendix A: Glossary

PDF (Portable Document Format): is a file format created by Adobe Systems in 1993 for document exchange.

PDFsam (PDF Split and Merge): The software described in this document.

JRE (Java Runtime Environment): is the Java software that needs a computer in order to run Java applications.

JVM (Java Virtual Machine): is a platform-independent execution environment that converts Java bytecode into machine language and executes it. The JVM is the instance of the JRE, comes into action when a Java program is executed. When execution is complete, this instance is garbage-collected.

IEEE (Institute of Electrical and Electronics Engineers): IEEE is the world's largest professional association advancing innovation and technological excellence for the benefit of humanity.

SRS Document (Software Requirements Specification Document): is a complete description of the behavior of the system to be developed.

Source: http://en.wikipedia.org/wiki/Software_Requirements_Specification

GPL: The GNU General Public License is a free, "copy left" license for software and other kinds of works. It is intended to guarantee freedom to share and change all versions of a program to make sure it remains free software for all its users.
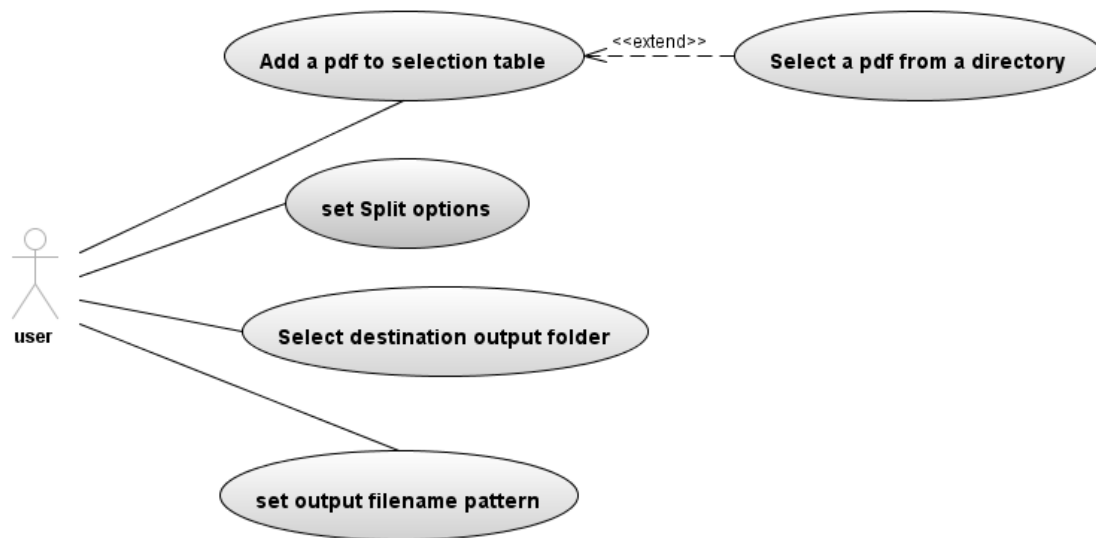
Source: http://www.gnu.org/copyleft/gpl.html

FOSS (Free and Open Source Software): is software that is liberally licensed to grant the right of users to study, change, and improve its design through the availability of its source code.

6.2 Appendix B: Analysis Models – Use Case diagrams
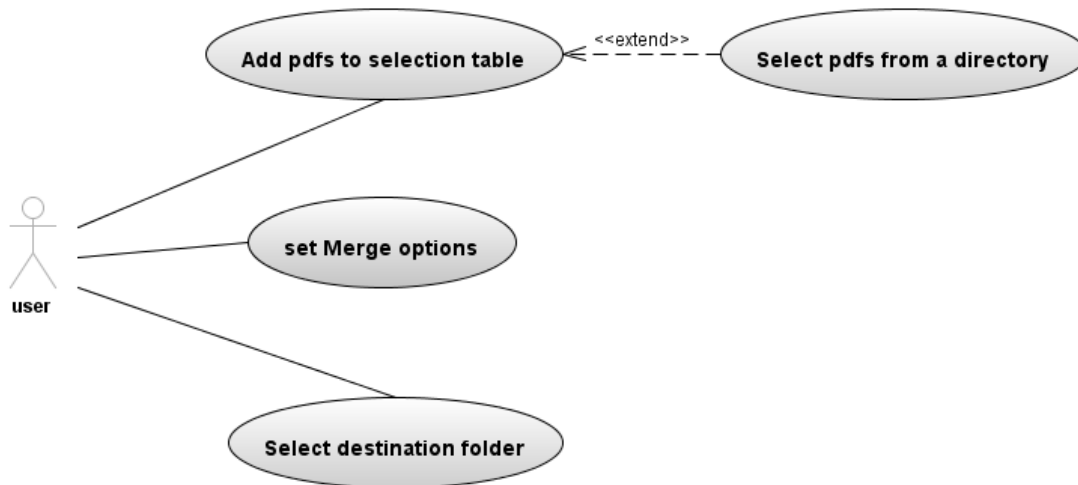
6.2.1 Use case 1 - Splitting a pdf document:

6.2.2 Use case 2 – Embedded help:

6.2.3 Use case 3 – Log panel:

6.2.4 Use case 4 – Merging pdf documents:

6.2.5 Use case 5 – Save/Load the working Environment: