Readiris PRO

for Mac OS

U S E R'S G U I D E

SAVE TIME, NO MORE RETYPING!

Congratulations on acquiring Readiris. This software package will undoubtedly be of great help in recapturing your texts, tables and graphics.

As efficient as computers are, you have to key in your information first. If you have ever retyped a 15 page report or a large table of figures, you know how tedious and time-consuming it can be. Use this state-of-the-art OCR package to automatically enter text in your applications and you'll acquire an unprecedented level of efficiency and comfort!

Scan a printed or typed document, indicate the zones of interest - or have the system detect them for you -, execute the character recognition and export the document to your wordprocessor. A few mouse clicks beat long hours of work as Readiris converts your paper documents into editable computer files: it's up to 30 times faster than manual retyping!

With the automatic mode of operation, the user's effort is reduced to a single click: he initiates the scanning and saves the text result, all intermediate steps are taken care of by Readiris. After the recognition, you can send the reading results directly to your favorite applications - be that a wordprocessor, spreadsheet or web browser.

Readiris recognizes tabular data and recreates them as worksheets or as table objects inside your wordprocessor; your numeric data are immediately ready for further processing.

Based on the Connectionist technology from I.R.I.S., Readiris represents the best OCR has to offer. Font-independant feature extraction is complemented by self-learning techniques derived from a proprietary neural network. The system can learn new characters through context analysis: linguistic knowledge about syllables and words improves the OCR performance.

Readiris supports up to 54 languages: all American and European languages are supported, including the Central-European languages, Greek and the Cyrillic (“Russian”) languages. Readiris even copes with mixed alphabets: the software detects “Western” words that pop up in Greek and Cyrillic documents - many

untranscribible proper names, brand names etc. are written using the Western symbols.

Readiris uses linguistics *during* the recognition phase, not after it. As a direct result, Readiris recognizes documents of all kinds with top accuracy, including low-quality documents, faxes and dot matrix printouts. It copes beautifully with badly scanned and copied documents containing too light or dark font shapes. Joined characters (“ligatures”) are resolved and fragmented forms, such as dot matrix symbols, are recomposed.

User verification in pop-up style not only flags doubtful characters but also increases the system's precision. All solutions confirmed by the user are memorized, increasing speed and confidence as you go along. Using Readiris means rendering it more intelligent each time! This powerful learning tool allows you to train Readiris on special characters such as mathematic symbols and dingbats but also to handle distorted fonts as you will find in real documents.

To increase your productivity further, Readiris not only recognizes your texts, but can *format* them for you as well! Make use of “autoformatting” and Readiris recreates a facsimile copy of the scanned document: the word, paragraph and page formatting of the original document are retained.

Similar typefaces are used, the point sizes and typestyles as used in the source document are maintained across the recognition. The placement of columns, text blocks and graphics follows your original documents. And as Readiris supports greyscale and color scanning effortlessly, you can recapture any graphics - be they lineart, black-and-white photos or color illustrations. When a document contains tables, Readiris reorganizes them in real cells and recreates the cell borders of the original tables.

In other words, Readiris allows you to archive a true copy of your documents, be it editable and compact text files instead of scanned images! Various levels of formatting are available, the choice is up to the user.

Readiris supports virtually all scanners using their Photoshop “plug-in” or Twain drivers: all models that dispose of a Photoshop “plug-in” or Twain module are seamlessly supported.

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Chapter 1
INSTALLATION

This chapter discusses the system requirements and installation of the Readiris software.

SYSTEM REQUIREMENTS

This is the minimal system configuration required to use Readiris:

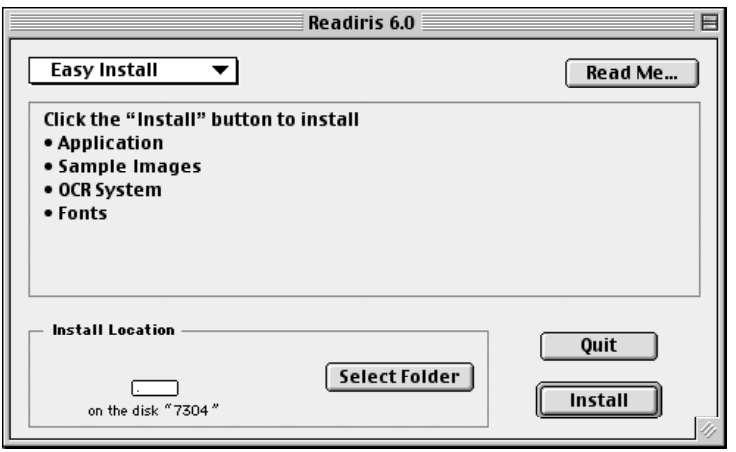
- a Mac OS computer with a PowerPC processor. Readiris does *not* run on 680x0 processor-based computers!
- 22 MB free RAM. Foresee 32 MB free RAM to process "true color" (RGB) images.
- System 7.6 with QuickTime 3.0 and Appearance 1.0.1 installed. Mac OS 8.5 with QuickTime 4.0 installed is recommended. The system extension Appearance can be downloaded for free from the Apple web site (www.apple.com).
- 25 MB of free hard disk space.

INSTALLING THE READIRIS SOFTWARE

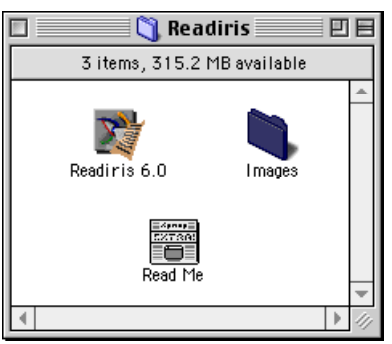
The Readiris software is delivered compressed. To install, it is mandatory to run the installation program.

1. Insert the Readiris CD-ROM.
2. Double-click on the Readiris installer and follow the on-screen instructions.

You are recommended to use the “easy” installation - it places all the necessary files on your hard disk, including the sample images which are used in the tutorial of this manual.



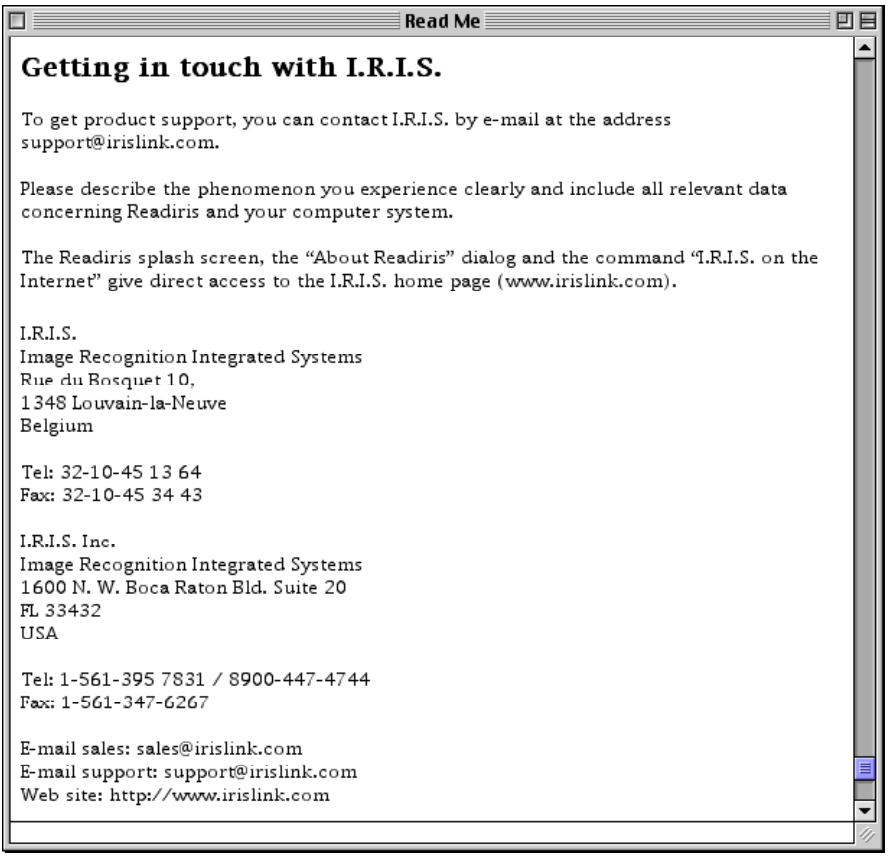
The Readiris folder is created automatically by the installation program.



REGISTER TO VOTE!

At the end of the software installation, you are invited to register your Readiris licence by submitting a registration form on the I.R.I.S. web site - this method obviously requires an Internet connection! (You can access the same registration form with the command "Register Readiris" under the "Help" menu.)

You can register in many ways, not just via the web: by faxing or sending in your registration card and by calling I.R.I.S. during working hours.



Registering your Readiris licence allows us to keep you informed of future product developments and related I.R.I.S. products. The registration benefits, including free **product support** and **special offers**, are strictly limited to registered users.

COMFORT ISN'T LAZINESS!

Some additional steps can be completed for maximal ease of use of Readiris.

First of all, it may be useful to create an **alias**. Use the command "Make Alias" of the Finder's "File" menu to do so. As a result, you'll be able to start the Readiris software directly from your desktop.

Also, you can add Readiris to the folder "Apple Menu Items". This folder can be found under the System folder.

The software documentation that came with your Macintosh can tell you more about aliases and the Apple menu.

INSTALLING YOUR SCANNER UNDER READIRIS

Readiris exploits the **Photoshop "plug-in"** or **Twain driver** of each scanner to support it. In other words, as soon as there's a Photoshop "plug-in" or Twain driver available for your scanner model, Readiris supports it effortlessly!

Here's how you install your scanner under Readiris.

Using the Photoshop "plug-in"

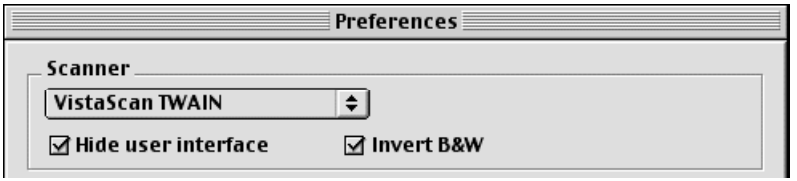
1. Install the scanner drivers using the CD-ROM (or set of diskettes) that comes with your scanner. Doing so will install the Photoshop "plug-in" on your computer. (If necessary, study the installation instructions that accompany your scanner carefully to ensure that these drivers are installed properly.)
2. Verify if the scanner operates correctly with any scanning application other than Readiris.
3. Locate the Photoshop "plug-in" on your hard disk and copy it to the Readiris folder, or create an alias for that "plug-in" in the Readiris folder.
4. Start up the Readiris software. You are warned when Readiris is unable to detect the Photoshop "plug-in" at the program startup.

5. Select your "plug-in" under Readiris with the option "Scanner" in the "Preferences" command under the "Edit" menu. That shouldn't be too hard: your Photoshop "plug-in" will be the only scanner driver available under the "Scanner" option.

Using the Twain driver

1. Install the scanner drivers using the CD-ROM (or set of diskettes) that comes with your scanner. Doing so will install the Twain driver on your computer. (If necessary, study the installation instructions that accompany your scanner carefully to ensure that these drivers are installed properly.)
2. Verify if the scanner operates correctly with any scanning application other than Readiris.
3. Start up the Readiris software. You are warned when Readiris is unable to detect a Photoshop “plug-in” at the program startup. As a Twain driver is used, you can simply ignore this warning; click "Don't Remind Me" to do so.

5. Select your scanner model under Readiris with the option "Scanner" in the "Preferences" command under the "Edit" menu.



More about scanner support can be found in the **"Read Me" file** that comes with the Readiris software.

Don't hesitate to contact your scanner manufacturer or its representative should there be problems with scanner drivers. Most manufacturers allow you to download the latest versions of the scanners drivers from their web site.

GETTING PRODUCT SUPPORT

The Readiris "Read Me" file details how you can get **technical support**. Among other things, you can contact I.R.I.S. by e-mail at the address *support@irislink.com*.

Please describe the phenomenon you experience clearly and include all relevant data concerning Readiris, your scanner and your computer system.

GETTING IN TOUCH WITH I.R.I.S.

You can also contact I.R.I.S. to learn more about its range of software solutions.

The Readiris startup screen and the command "I.R.I.S. on the Internet" under the "Help" menu of Readiris bring you directly to the I.R.I.S. home page (www.irislink.com).


IRIS : OCR software and document management com...
I.R.I.S.
Leader in Multi-Lingual Text Recognition and Document Management
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> American server
> European server
• English
• Français
• Spanish
Professional Systems
The complete professional solutions
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Clinical Technology of I.R.I.S.
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Image Processing Technology
GET READIRIS FREE!
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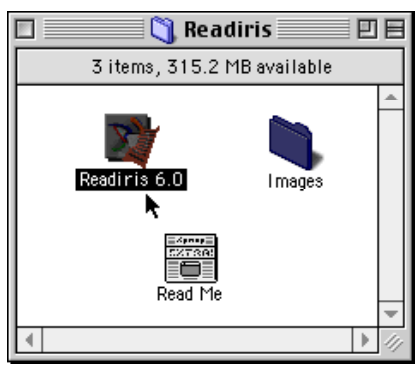
Chapter 2
GUIDED TOUR

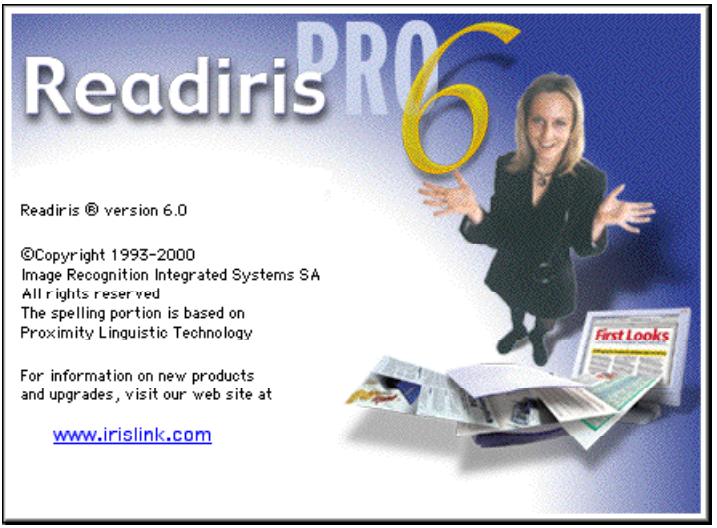
Readiris is a state-of-the-art OCR package equipped with numerous advanced features. We will discuss all major features in this chapter and add many tips and hints concerning the use of Readiris.

STARTING THE SOFTWARE UP

Double-click on the Readiris application in the Readiris folder or on the alias for the Readiris application on your desktop.



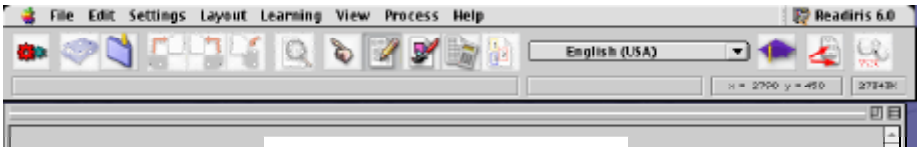
The Readiris startup screen and the menu bar of the Readiris software are displayed. The startup screen displays the version and copyrights of the Readiris software. It also gives direct access to I.R.I.S.' **homepage** - simply click on the URL www.irislink.com to visit the I.R.I.S. web site. Clicking the mouse anywhere else makes this screen disappear.



DISCOVERING THE READIRIS INTERFACE

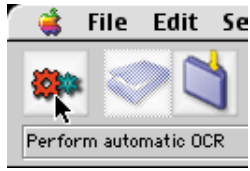
The Readiris application not only contains a **menu bar** but also an image window and a toolbar that gives quick access to the most frequent commands.

The **toolbar** gives quick access to all frequent general commands and contains all common commands you need during the image preview. Initially, many buttons are dimmed: they concern the preview. As long as no image is opened, they are unavailable.



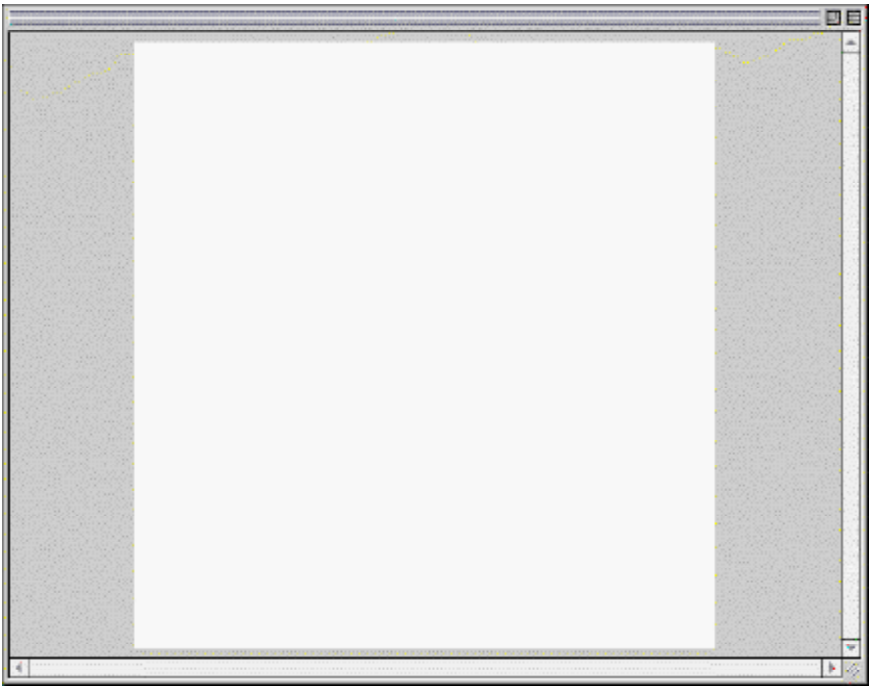
The toolbar can be disabled with the command "Hide Toolbar" under the "View" menu, but we recommend that you display it at all times.

To learn which command corresponds to a certain button, hold your mouse pointer over it for a while: a **tooltip** appears in the status bar to tell you what the button does.

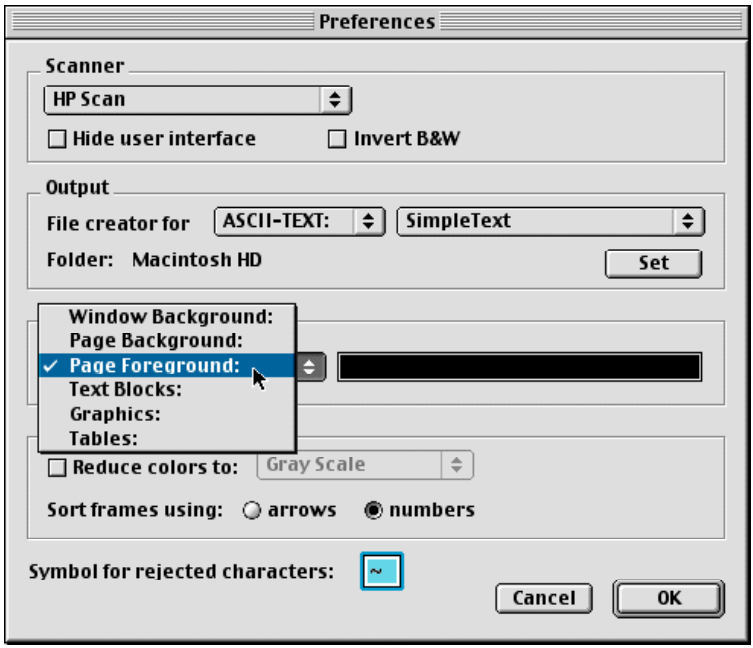


The **status bar** below the button bar doesn't just display the tooltip. It also gives information on the current image: the image size (in image pixels and in KB), the image type (bit depth), the image resolution and the pixel coordinates of the mouse cursor. Finally, the available RAM memory is mentioned on the right side.

The window pane or **image zone** is where the scanned images are displayed.



Should you wish to do so, the colors used in the image window - for the window background, the page background and page foreground - can be changed with the "Preferences" command under the "Edit" menu.



GETTING STARTED WITH A FIRST TUTORIAL

The best way to become familiar with the operation of Readiris is undoubtedly by using it. A number of **prescanned images** is provided with the software; they allow you to get started even when there is no scanner connected to your computer. Let's turn to them now.

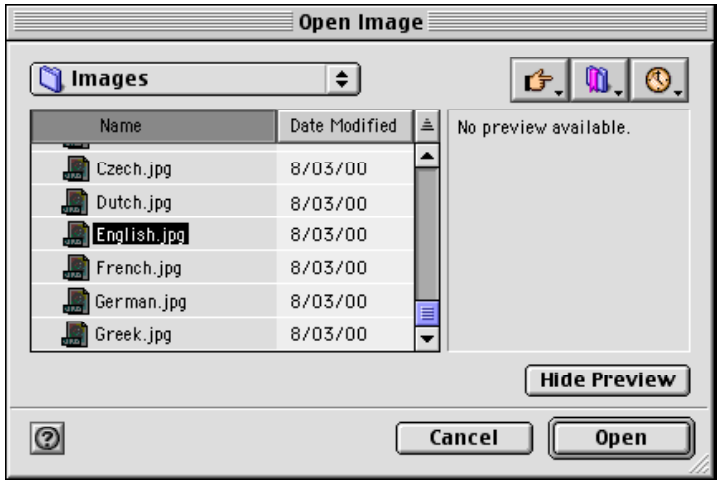
Readiris allows you to scan images using your scanner and open prescanned images: use the "Open" button to open prescanned images, use the "Scan" button to acquire images with your scanner. (You can also select the command "Open"

from the "File" menu to load an image and use the command "Acquire" from the "File" menu to scan an image.)

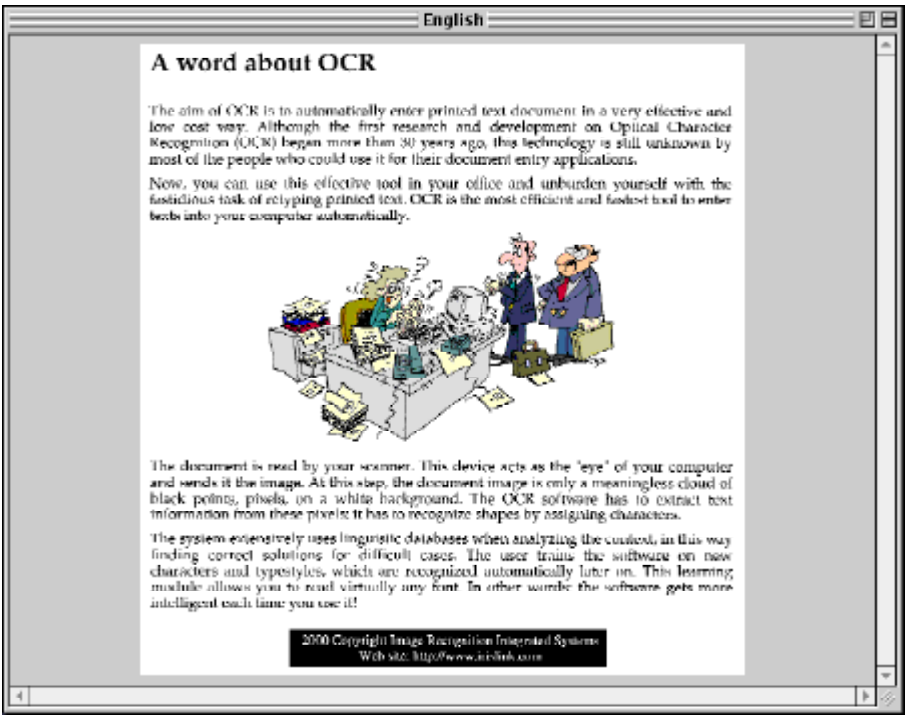
Color, greyscale and black-and-white images are supported on an equal basis: Readiris allows you to open FlashPix images, GIF images, JPEG images, MacPaint images, Photoshop images, PICT images (called “native” Readiris documents), PNG images, QuickDraw GX images, QuickTime images, Silicon Graphics images, Targa images, (uncompressed, packbits and Group 3 compressed) TIFF images and Windows bitmaps (BMP).

Loading prescanned images is particularly useful to convert your **faxes** into editable text files.

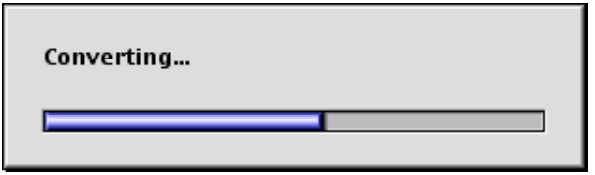
Click the "Open" button and go to the folder "Images" under the Readiris folder. By default, a preview (if available) of the selected image is shown - “selected” means you've clicked the image once. Click the button "Hide Preview" if you wish to disable the image preview; click "Show Preview" to enable it again.



Double-click the image English.jpg in the image folder or click the image once and click the button "Open". The image is read from disk and displayed in the image zone progressively.

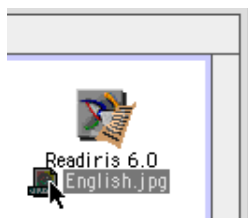


For every greyscale and color image, a black-and-white version is generated for the OCR process.

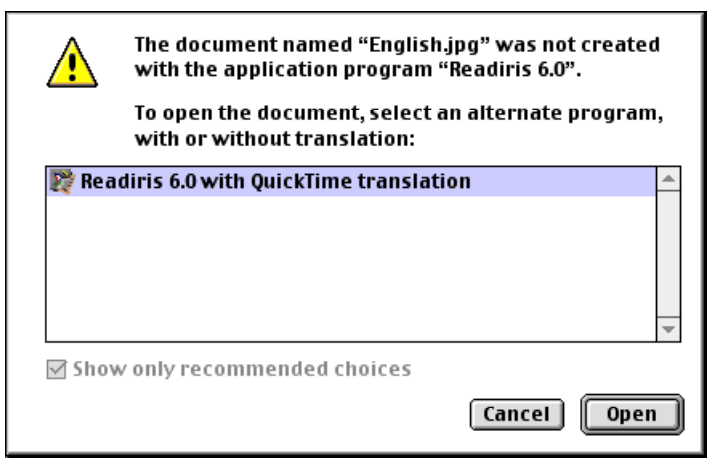


To display a greyscale or color image as black-and-white, disable the option "Image in Color" under the "View" menu.

There's another way to import image files into Readiris. Drop them on the Readiris icon: Readiris starts up and the image file is opened automatically.



Depending on the file format of the image you're trying to open, you may be prompted to agree with the file conversion.



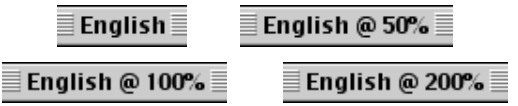
The toolbar contains all the commands you need during the image preview: tools to analyze the page, to indicate the zones of interest, to rotate the image etc.

ZOOMING IN ON IMAGES

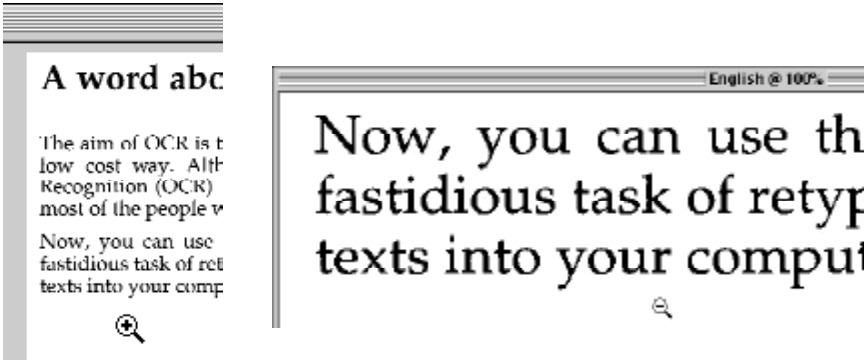
Readiris has several commands that allow you to **zoom** in on the scanned image, for instance to verify the scanning quality.

The "View" menu contains commands that allow you to zoom in at real size, to display the image at 50% and 200% of its actual size, to fit the image to the page width and to fit the entire image in the preview window. At actual size, a screen pixel corresponds to an image pixel. (Shortcuts are available for all zoom levels!)

Note that the current zoom level is indicated in the window title - there's no zoom level mentioned when the image fits the window.



You can also Ctrl-click the mouse button over a region of the scanned image to zoom in at real size immediately. Ctrl-click a second time to zoom out again. As soon as you press the Ctrl key over the image preview, the mouse cursor is adapted!



Finally, you can Shift-Ctrl-click the mouse button over the scanned image to invoke all zoom levels. As you repeat the action, you'll go through the zoom levels one after the other.

ONE, DECOMPOSING A SCANNED IMAGE

Now that the image is scanned, you have to indicate which parts you want to convert into editable text by drawing frames, so-called “windows”, around the zones of interest.

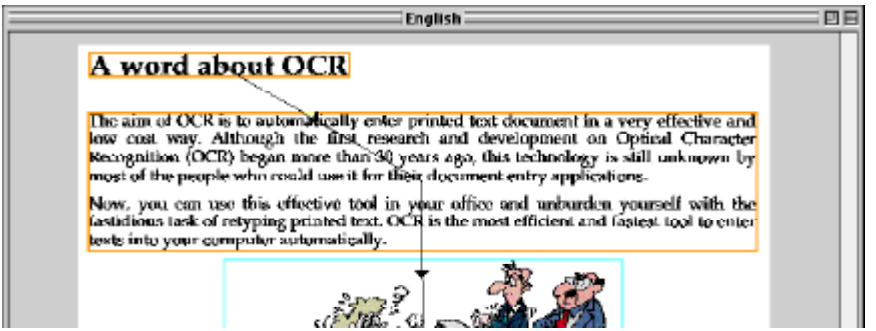
Actually, Readiris will do this for you automatically when the option "Page Analysis" under the "Layout" menu is enabled. The page analysis is enabled by default.

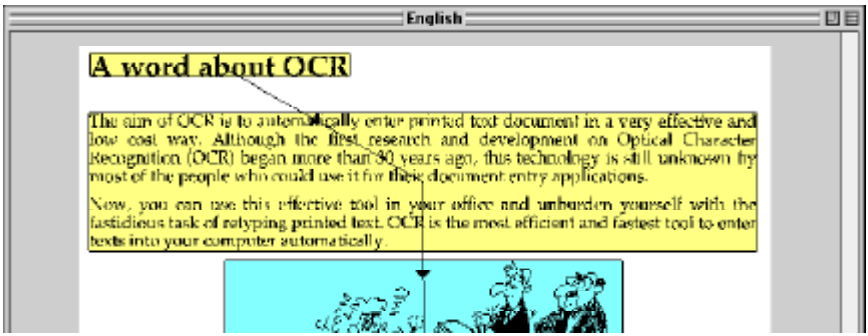
To force Readiris to decompose the current page - because you disabled page analysis by accident, because you erased some windows erroneously and want to redo the page analysis etc. -, you can simply click the button "Analyze Page" (or the command "Analyze Page" under the "Process" menu).

Automatic page decomposition is particularly useful when **columnized texts** and documents with a complex page layout, possibly including graphics and tables, are recognized.

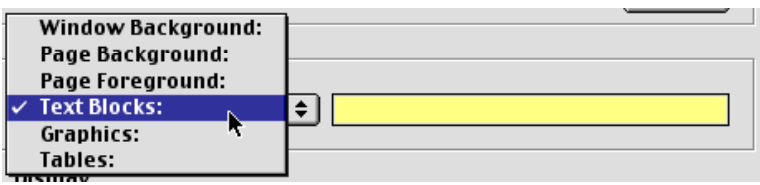
Page decomposition uses three **window types**: text, graphic and table windows. Readiris discriminates text blocks, tables and graphic zones containing photos, illustrations etc. on the page. (Saving graphics and recognizing tables will be discussed at great length below.)

A **color code** indicates the window type: text zones are yellow, graphic zones are blue and tables are purple. When you are displaying the original image - even if it is black-and-white -, you get a color border around the zone. In that way, the windows do not hide the actual color tones or greyscales of the image. When you are displaying the black-and-white version - the option "Image in Color" under the "View" menu is disabled -, the zones are entirely filled.

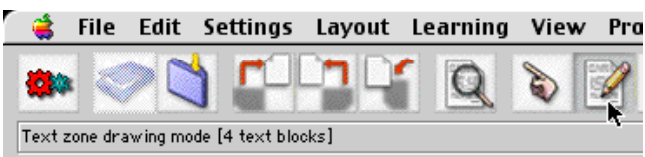




The colors assigned to the three zone types can be modified with the "Preferences" command under the "Edit" menu should you wish to do so.



The number of windows is indicated in the status bar when the tooltips of the window tools are called up. Hold your mouse cursor over a zoning button and the number of windows of the selected window type is mentioned.



Page analyisis is fast, skew-tolerant and highly accurate: it traces complex, “irregular” shapes.

The page analysis will even detect zones where you get **white text on a black background**. Recognizing such inserts is no problem: while the preview displays the scanned document correctly on-screen, Readiris “inverts” the image when the need arises to recognize such text blocks!

One and a Half, Sorting Windows

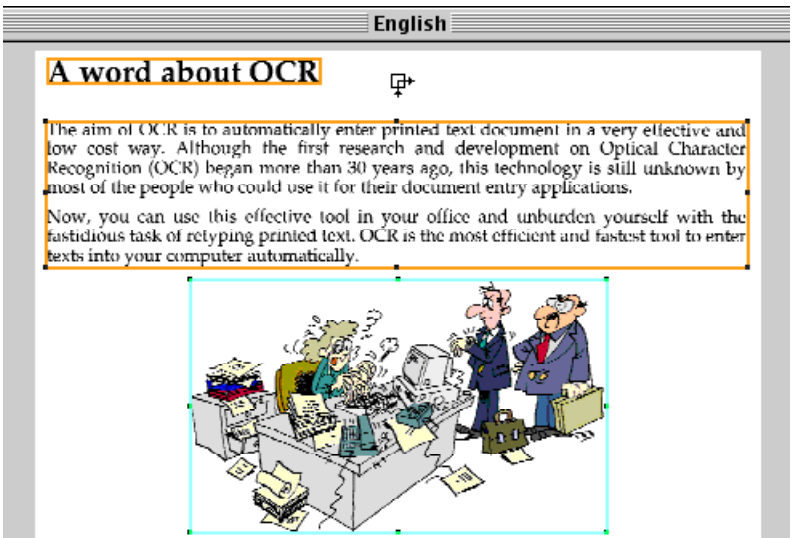
Readiris not only detects the various blocks, but also *sorts* them: the zones are sorted top-down, left to right by default to cope with columnized documents.

Arrows indicate the sort order unless you've chosen to display numbers with the "Preferences" command under the "Edit" menu.

Evidently, you can modify the **sort order**. To do so, click the "Sort" button (or use the command "Sort Zones" under the "Layout" menu).

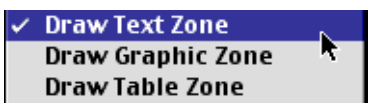
The mouse cursor changes as soon as the “sort mode” is enabled.

Click on the windows you want to include. Windows you do *not* click on are simply ignored, excluded from recognition. It's easy to see which zones are selected and which aren't: the selected windows have no markers on them, the non-selected windows still have markers on the corners and in the middle of each side.



TWO, WINDOWING A SCANNED IMAGE MANUALLY

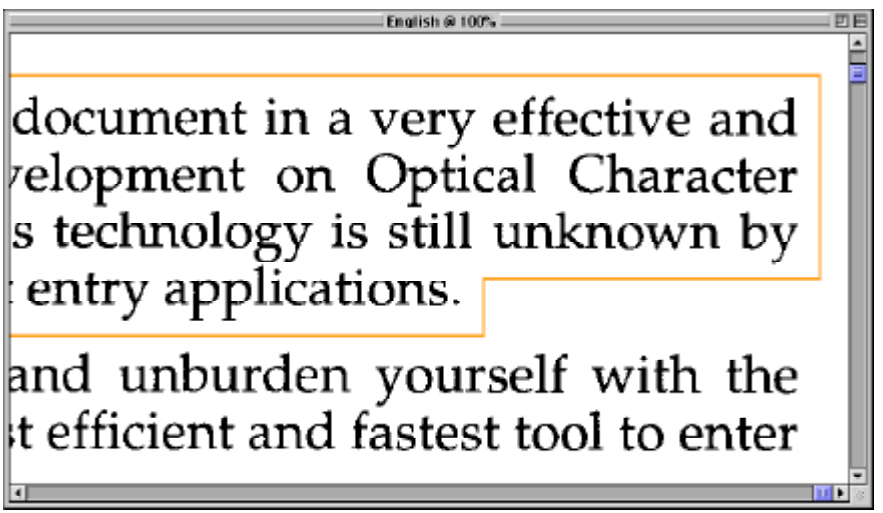
Page analysis is the automatic way of zoning a scanned page. Alternatively, you can zone an image manually with the **windowing tools** of Readiris. These are available on the toolbar and under the "Layout" menu.



To **draw** a rectangle around a zone of interest, select the corresponding tool in the toolbar (or under the "Layout" menu), click the cursor in the upper left corner of the window, stretch the window by moving the mouse to the lower right corner and click again. (Sides smaller than 1 mm are not allowed, they wouldn't even contain a single character anyway.)

The windows are automatically sorted in the order of creation: arrows or numbers indicate the sort order.

You can also frame “irregular” text blocks by drawing **polygonal windows** around them. Non-rectangular windows are created by merging rectangular zones: as soon as two rectangles (of the same type) intersect, they become a single window automatically! In a way, you're building a house by adding one room after the other... (Creating polygonal table windows doesn't make any sense.)



Furthermore, manual zoning can be combined with window sorting: you can draw new windows even when the “sort mode” is enabled. You then use sorting to include a number of detected windows and manually create some other windows where the page analysis didn't yield the appropriate results. As soon as you start creating windows in the “sort mode”, all windows you didn't select are promptly erased!

To modify, move and delete windows, you need to **select** them first. To do so, choose the window selection tool in the toolbar and click inside a window. Rect-

angular markers now appear at each corner and in the middle of the window sides.

To **unselect** windows, click the mouse button elsewhere. To select **additional windows**, hold down the Shift key while clicking on these extra windows.

So much for selecting zones. To **modify** a window, select it, put your mouse cursor over a marker and drag the side to change the window size.

To **move** a window, simply select it and drag it to another location.

To **delete** windows, select the window(s) and choose the "Cut" or "Clear" command from the "Edit" menu. The "Cut" command cuts the window(s) to an internal buffer, "Clear" erases the window(s) irretrievably. When you paste windows, they are inserted in their original position, and you have to drag them to their new location.

In fact, *all* familiar commands from the "Edit" menu apply to the windows: you can delete, cut, copy and paste them! The "Undo" command also applies: if you have unfortunately deleted, moved, resized etc. some zones, "Undo" will cancel the last operation.

Also note that shortcuts are available for all commands! Let's give an example: to erase all existing windows, you can choose the command "Select All" or its shortcut Command-A and click the command "Clear" or its shortcut

BackSpace. Alternatively, you can use the command "Clear" under the "Layout" menu to erase the current zones from the memory.

You are now ready to recreate the necessary layout. To restore the previous layout, you can choose "Undo" or the shortcut Command-Z. Or click "Redo" to erase the windows a second time...

THREE, SAVING WINDOWING TEMPLATES

The resulting windowing layouts can be saved as **zoning templates** for future use with the command "Save As" under the "Layout" menu and loaded into memory with the command "Open" under the "Layout" menu. (There's a specific command to allow you to quickly save the current layout again!)

If you have to recognize documents with a similar layout, for instance a 50 page report where the header and footer should be excluded for obvious reasons, a single template can be applied to zone all 50 pages.

When you load a template into memory, the page analysis is disabled automatically. The zoning template remains active until you re-enable the page analysis.

READIRIS TAKES YOU AROUND THE WORLD

Assuming that the windows are correctly defined, you are now almost ready to execute the character recognition. We say “almost”, because we haven’t verified the language and document settings yet.

The language setting can be found on the toolbar. Click the "Language" dropdown list to modify the document language.

Readiris is far from limited to English: up to 54 **languages** are supported! All American and European languages are supported, including the Central-European languages, Greek, Turkish, the Cyrillic (“Russian”) and the Baltic languages.

Also note that the British and American - or should we say “international”? - variants of the English language are distinguished.

Selecting the proper document language is imperative. Based on the selection of a language, the software knows which **symbol set** to recognize. Multi-linguistic support ensures that “exotic” characters such as ç, ß, ñ, γ and ø are recognized correctly.

Secondly, the software extensively uses **linguistic databases** to validate its results. Suppose that you have to read the word "president" where an ink stain makes the "r" look like an "f". Looking things up in the English lexicon, Readiris will detect autonomously that the word "president" is being read and that it doesn't make any sense to recognize the symbol "f". This **“self-learning” technique** is of course highly dependant on the linguistic context.

Linguistics offer useful help to solve **ambiguous cases** such as an "O" which might be mistaken for a '0'. Another typical example is the letter "l" and number '1' which have an identical form in many fonts - think of texts produced on old typewriters! The linguistic context helps to determine whether you are dealing with "l" or '1'.

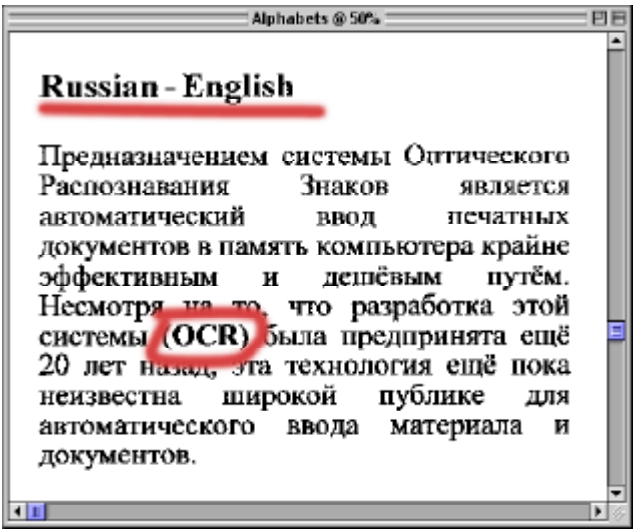
The illustration below shows various shapes of '1' and "l". The shapes on the first line are unambiguous, the shapes on the second line are ambiguous, but linguistics can solve them. When the context does not suffice, the user intervenes.

READIRIS CHANGES LANGUAGES AS NEEDED

But the buck doesn't stop here: Readiris can switch languages in the middle of a sentence without any help from the user! When Western words pop up in Greek or Cyrillic documents - many untranscribible proper names, brand names etc. are written using the familiar Western symbols -, Readiris can switch to the correct alphabet automatically. In other words, you can activate a **mixed alphabet** of Greek or Cyrillic and Western characters.

Be sure to select "Greek-English" or the appropriate Cyrillic language setting, for instance "Byelorussian-English". In other words: don't try to just select "Greek" or "Byelorussian" as document language and hope that the Western symbols will come out fine!

Here's an example where a Russian text contains some English words - open the image file Alphabets.tif if you want to try it for yourself!



To **mix other languages**, simply select the language with the most extended character set. If you have a document where the, say, French translation is placed alongside an English text, you have to select French as language to ensure that the accentuated characters such as ç, é and ù get recognized correctly.

Defining the Document Characteristics

Now that the language is set, we'll turn to the other document characteristics. You can fine-tune the recognition by specifying some document features: the font type and character pitch. Let's clarify what this means.

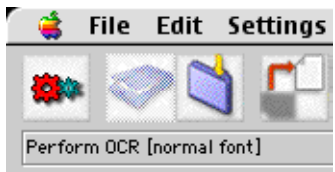
First of all, indicate whether you are recognizing "normal" or **dot matrix** printed documents with the command "Font Type" under the "Settings" menu.

Setting this parameter correctly is mandatory: “draft” or “9 pin” dot matrix symbols are made up of isolated, separate dots, and highly specialized recognition routines are required to recognize them.

ape-descended life

“Letter quality” dot matrix printing, also called “25 pin” or “NLQ” dot matrix, requires the normal setting, as do the **printing qualities** typeset, typewritten, laser printed and inkjet printed. Obviously, "Normal" is the default value.

The tooltip of the "Recognize" (and the "Auto") button indicates the selected font type - normal or dot matrix.



The **character pitch** can be set with the command "Character Pitch" under the "Settings" menu.

With *fixed* or “monospaced” fonts, all symbols of the font have the same width. `An "i" takes up as much horizontal space on a line as a "w", as is the case in this sentence.` Think of documents produced using a typewriter, where the carriage moves a fixed distance for each typed symbol.

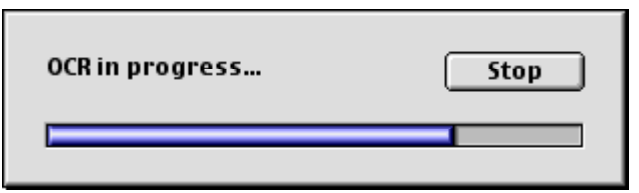
A *proportional* pitch means that the width of a character depends on its shape. Symbols like “m” and “w” are wider, take more horizontal space on a line than the “thin” characters “l” or “j”. Virtually all books, magazines and newspapers are printed in proportional pitch.

The simplest solution is to leave this option at all times on the default value "Auto", which means that Readiris will detect the character pitch automatically.

READIRIS GETS MORE INTELLIGENT EACH TIME!

When the document language is selected and document characteristics are set, you can click the "Recognize" button (or the command "Recognize" under the "Process" menu).

The OCR progress is indicated on-screen. You can click the "Stop" button to abort the text recognition.



Readiris will enter the interactive learning phase at the end of the recognition when the learning is enabled. Interactive learning is enabled by default.

Font training can substantially enhance the accuracy of the recognition system. When the user tries to read distorted, defaced forms as are found in real documents or stylized font shapes which Readiris does not recognize optimally, training can overcome this temporary “failure”.

User learning is also used to train the system on **special symbols** which Readiris is unable to recognize, such as mathematical and scientific symbols and dingbats. Some examples: Readiris can be trained to recognize the "π" symbol as "pi" or the dingbat "☎" as "Tel". (However, the list of recognized symbols cannot be extended with the symbols "π"and "☎"!)

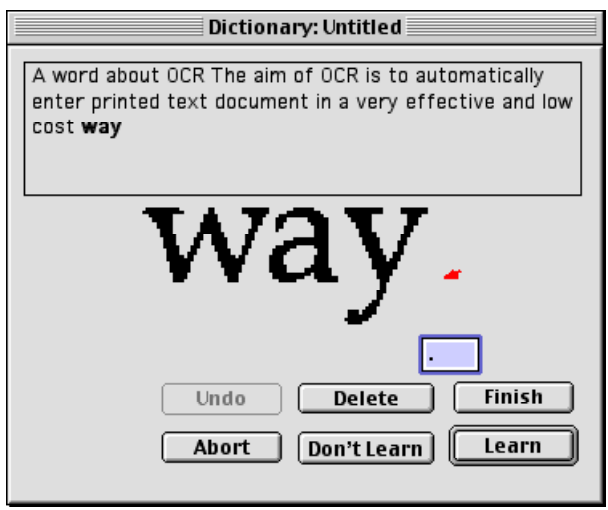
How does this work? Learning is best understood in three steps: first of all, determine whether you want to train the system on your documents or not. Secondly, once you've decided to make use of learning, determine if you want to limit the learning to the current image. Only when you recognize similar documents will you take the learning one step further: you will then perform training on

several pages and use the font dictionaries created in this way on other documents.

Let's start with the first step: the interactive learning is enabled with the "Learn" button (or with the option "Interactive Learning" under the "Learning" menu). The "Learn" button is a toggle button: when learning is enabled, the button's background is dark, when learning is disabled, its background is white.



At the end of the recognition, Readiris displays the recognized text progressively and the system stops on doubtful characters, or - if you are dealing with touching characters (“ligatures”) - on doubtful character strings. They are always presented in their context, the doubtful characters are highlighted.



Unrecognized characters are by default represented by a tilde (the "~" symbol). The “reject” character can be modified with the "Preferences" command under the "Edit" menu.

If necessary, enter a character (or character string) for the incorrect or unknown shape and click one of the following buttons.

Learn

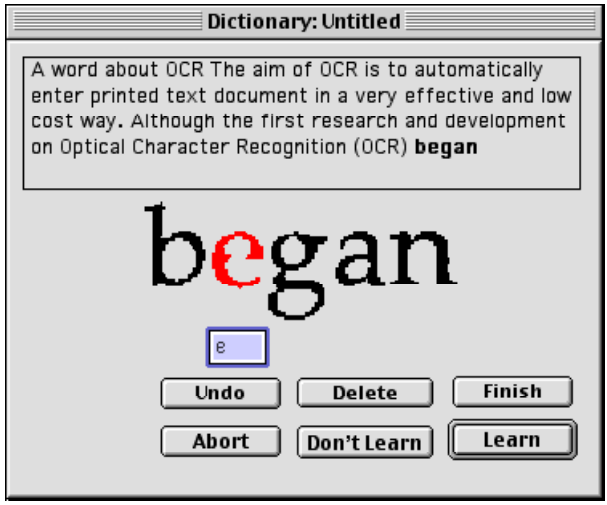
You agree with the proposed solution or correct it. The program saves this doubtful character in the font dictionary as “sure”, final. Future recognition will no longer require your intervention, the shape is considered learnt once and for all.

In the example above, the system stops on a damaged character, and we click "Learn" to accept a shape which cannot be confused with other characters.

Don't Learn

You agree with the proposed solution or correct it. The difference with the "Learn" button is that the learnt symbol gets the status “unsure” in the dictionary. For future recognition, the system will propose the “learnt” solution but still require a confirmation.

This button is used for symbols which might be confused with others: a defaced "e" which might be mistaken for a "c", a damaged "t" which closely resembles an "r" etc.



The "e" above is seriously damaged - in fact it is close to the letter "c", and you should click "Don't Learn" so as not to confuse it with the symbol "c".

Delete

The displayed form is eliminated from the output. This button is used to ignore “noise” on the documents - spots, coffee stains etc. - which might get recognized as points, comma’s and what have you -, and to erase any other unwanted symbol.

Undo

You go back to correct mistakes. You can undo the nine last decisions.

Finish

The learning process is aborted but the OCR continues in automatic mode. All decisions by the system thereafter are accepted without user validation.

Click this button when you see that the recognition is highly accurate and does not require detailled proofreading.

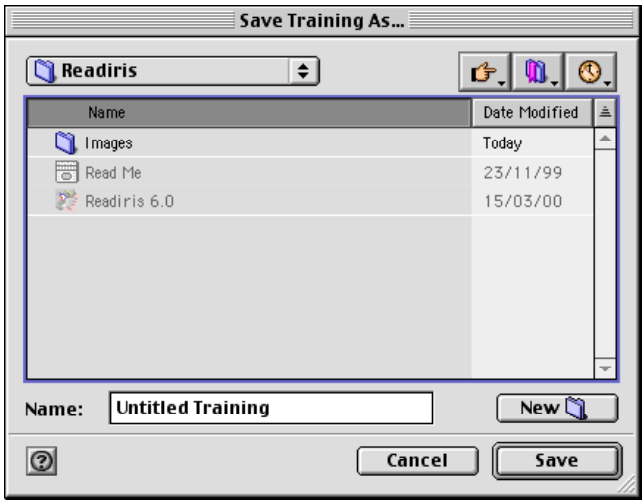
Abort

Don't confuse "Finish" with the "Abort" button: with "Abort", no output is generated and you start all over, with "Finish", the text is created, it just isn't proofread in detail!

The Role of Font Dictionaries

The results of such training sessions are erased after each page unless the option "Clear on New Image" is disabled. This option is enabled by default, so, if you want to train the system on several pages, you need to disable it.

But even when learning *does* extend the current page, all input from the user is simply held in the computer's memory! No font shapes are actually saved until he uses the command "Save As" under the "Learning" menu. When he does so, all learnt shapes contained in the RAM memory are stored in files called "font dictionaries" for future use.



The command "Open" of the "Learning" menu allows to *load* font dictionaries back into memory.

The active dictionary is mentioned at all times in the title bar of the interactive learning window! When no dictionary has been saved yet, the name "Untitled" is used. Click the "Abort" button of the interactive learning in case you have loaded the wrong font dictionary!

To *erase* the contents of the dictionary held in the computer's memory, use the command "Clear".

Font dictionaries should be loaded into memory when you want to recognize similar documents in order to make use of the extra intelligence they contain; in

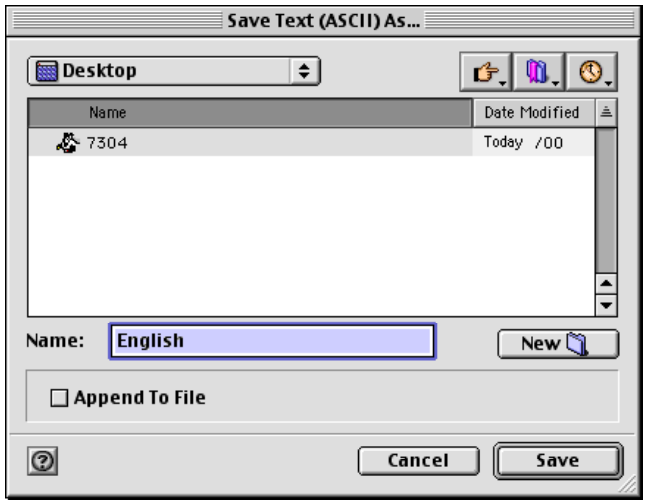
this way, Readiris takes into account the intelligence stored in these font libraries. You could say that Readiris gets more intelligence each time you use it!

You can also append, complete existing dictionaries by loading them, performing extra learning and saving them again. (There's a specific command to allow you to quickly save the current dictionary!)

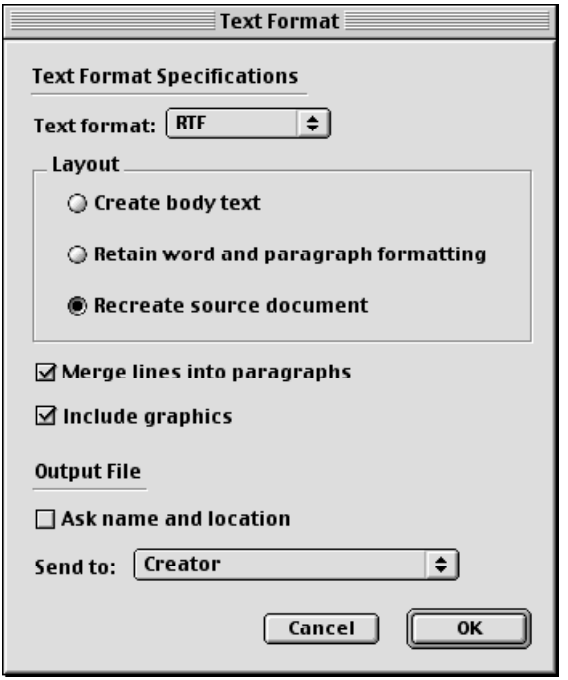
Font dictionaries are limited to 500 shapes, and you are recommended to create separate dictionaries for specific applications, for instance per type of document. For clarity, you are recommended to give meaningful names to the font dictionaries, for instance Report, Palatino etc. Training no longer has effect when the dictionary is full: the results of the learning are no longer held in memory or written to a dictionary.

Saving the Results in a Text File

The interactive training concludes the character recognition; you will be prompted to save the OCR result to a text file. Just click "Save" for the time being.



Click the "Format" button (or select the command "Text Format" under the "Settings" menu) to discover the versatile output capabilities of Readiris.



Readiris supports the file formats ASCII, RTF (“Rich Text Format”) and HTML. The ASCII format is used by default. Note that the selected format is mentioned in the title of the save window!

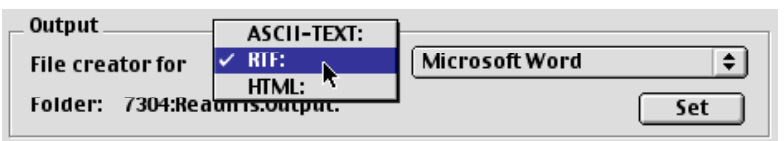
The option "Ask Name and Location" determines whether you are prompted to save the recognized text at the end of the recognition phase.

SENDING THE RESULT DIRECTLY TO YOUR APPLICATION

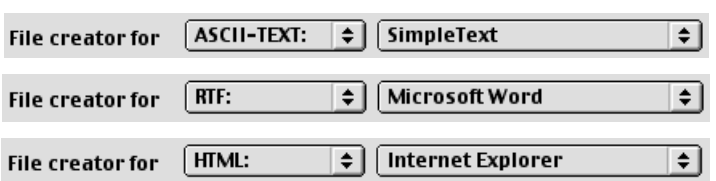
But we can also send the recognized text directly to our text application - as an alternative to saving a text file *and* simultaneously with it. For instance, if Microsoft Word functions as your target application, your wordprocessor will be started up automatically at the end of the recognition (if necessary) and the recognized text will be inserted inside a new document.

The "Send to" feature offers a direct OCR link between your scanner and your Mac OS applications. Readiris exports recognized documents directly to any text-based Mac OS application - wordprocessors such as Microsoft Word, spreadsheets such as Microsoft Excel, web browsers such as Microsoft Internet Explorer, application suites such as AppleWorks and ClarisWorks and standard Mac OS text applications such as SimpleText.

First of all, you can send the ASCII, RTF or HTML files to their “creator”. Ensure that the creators are assigned appropriately under Readiris with the "Preferences" command under the "Edit" menu. Actually, the Readiris installer detects the creator of each filetype based on the applications installed on your computer, but you are free to modify the assignments.

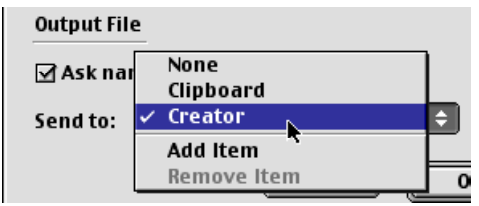


You are recommended to assign different applications to the various formats, so that several applications become available as output targets.

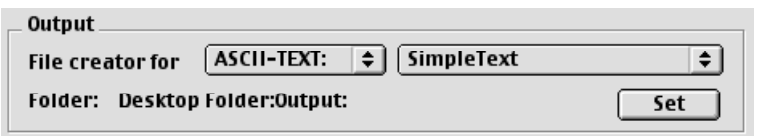


Note that the "Send to" option also allows you to copy the recognized text to the **clipboard**, so there is no strict need to export the result to an application... or save it to a text file!

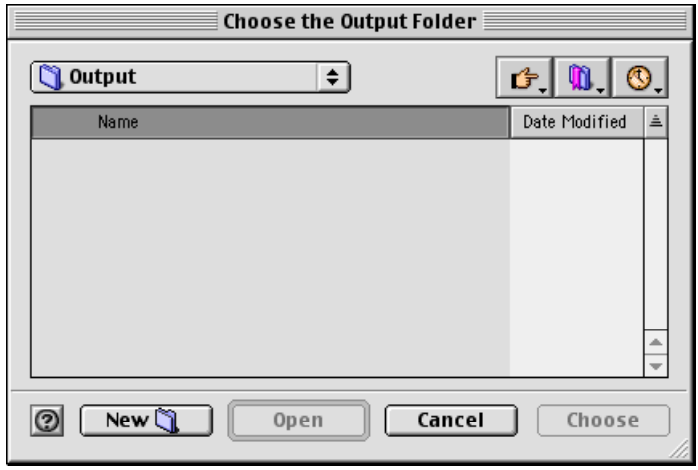
Use the option "Add Item" to “declare” a application as a possible output target; all “declared” applications remain so until they are removed again with the option "Remove Item". Select "None" to disable the use of a target application again.



When you send the recognized document to a target application, the text is actually saved in a file before it is opened by the target application. Readiris uses the Readiris folder for this purpose - unless you've specified an output folder with the "Preferences" command under the "Edit" menu. (This occurs only when you send the output to a target application - without saving it to a file with the option "Ask Name and Location".)



Click the "Set" button to choose another folder as “temporary” folder.

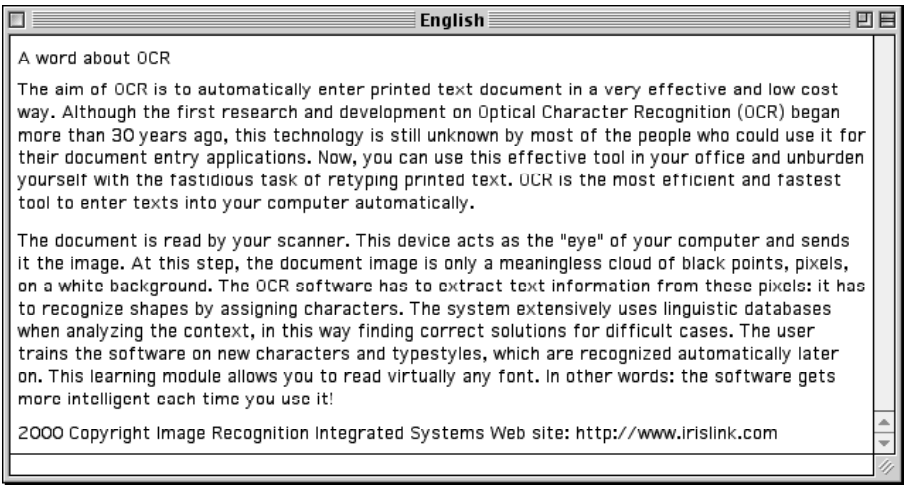


Concluding, Readiris offers several methods when it comes to saving the OCR result: copying the result to the clipboard, saving the result in a text file, exporting the recognized document promptly to a target application and even saving the result in a text file *and* sending the recognized document directly to an application.

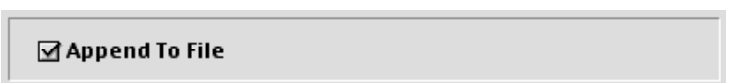
RECOGNIZING MULTIPLE PAGES

After the OCR, the scanned image is redisplayed with the zoning as created to be available for further processing, it stays there until you scan another page.

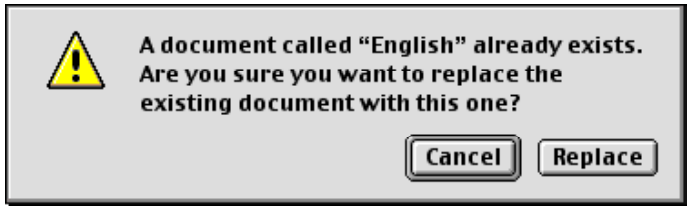
You can now open the recognized text with your wordprocessor, text editor, import it into your desktop publishing software or any other text-based application. You have indeed converted a paper document into an editable computer file, be it up to 30 times faster than manual retyping! Go ahead and compare it with the image you have inside your Readiris window.



But how do you save the text of additional pages? Or in other words: how do you process documents consisting of multiple pages? It's actually very simple: go on recognizing pages, but enable the option "Append to File" when you are saving to the same file!



When this option is disabled, you are warned that you are about to overwrite the existing file: you can always click "Cancel" and enable the “append” mode before you try to save again.

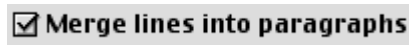


ORGANIZING THE TEXT OUTPUT

Saving or exporting the text means more than selecting an output method - saving a file, sending the output to a target application or the clipboard, or doing both - or defining a filename for the output file. You also select a file format and determine the appearance of the recognized text. In short, you have to decide where you want to take the text before you launch the execution.

Some options of the "Format" button allow you to influence the look of the text output.

The **text flow** of the output document is directly influenced by the option "Merge Lines into Paragraphs".



Keep this option enabled to have Readiris detect the paragraphs: Readiris will then apply the normal **wordwrap** typical of wordprocessors, otherwise, a carriage return is added after each line and hyphenated words remain so! Paragraph detection is enabled by default.

Let’s give an example to clear things up. When the first three lines of a column are "The new presi-", "dent waved from the balcony." and "His wife had joined him.", the paragraph detection gives you the following result: "The new **president** waved from the balcony**. His** wife had joined him." The hyphenated parts of the word "president" were “reglued” and a space was added at the end of the first sentence, thus creating naturally flowing text.

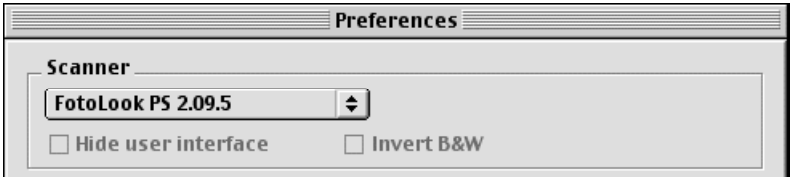
Had paragraph detection *not* been enabled, the original layout would have been retained, with a carriage return added at the end of each line.

SETTING UP YOUR SCANNER

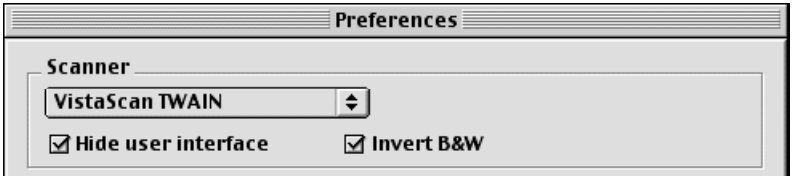
Let's set your scanner up now. It is assumed that the scanner hardware and necessary software are installed correctly on your computer system.

Actually, it's all very easy: Readiris exploits the Photoshop "plug-in" or Twain driver of each scanner to support it. In other words, as soon as there's a Photoshop "plug-in" or Twain module available for your **scanner model**, Readiris supports it effortlessly!

In short, locate your scanner's **Photoshop "plug-in"** on your hard disk and copy it to the Readiris folder, or create an alias for the "plug-in" in the Readiris folder. Next, select your "plug-in" under Readiris with the option "Scanner" of the "Preferences" command under the "Edit" menu.



To use a **Twain driver**, simply select it with the option "Scanner" of the "Preferences" command.



The option "Hide User Interface" determines whether you will use the Twain preview or not. The "interactive" mode of Twain is enabled by default. The option "Invert" allows you to generate **"inverted" images** - this option is useful

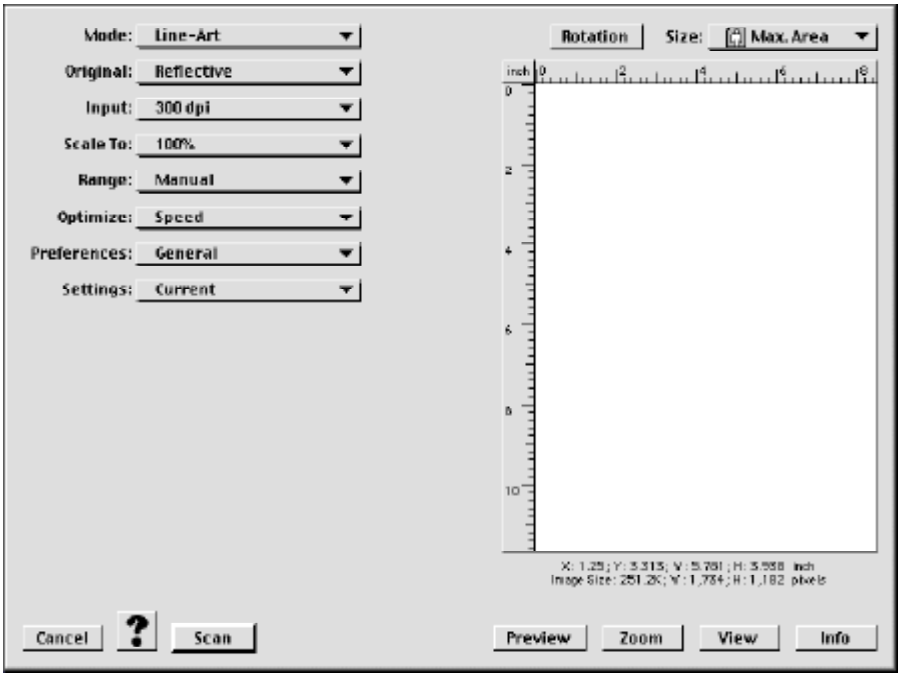
to process full pages with white text on a dark background. (These options do not apply to scanners using the Photoshop “plug-in”.)

You are warned when Readiris is started up and no Photoshop “plug-in” is detected by Readiris. You can choose to ignore this warning should you use a Twain driver or should you exclusively recognize prescanned images - faxes you receive electronically etc. (The option "Scanner" of the "Preferences" command remains unavailable until your Photoshop “plug-in” or Twain driver is installed correctly under Readiris.)

Go to the Readiris “Read Me” file or to chapter 1 of this manual should you need further information.

SCAN ON!

Once the scanner is selected, you can acquire images. The scanner’s “plug-in” or Twain driver is used to set the scanning resolution, the page format and orientation, brightness and contrast. (The contrast setting is only available on some scanners.)

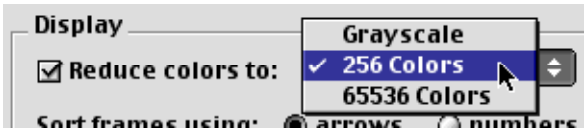


Which scanning options you dispose of depends on your scanner model. Refer to the software documentation that accompanies your scanner.

Readiris supports black-and-white, greyscale and color images on an equal basis, so you are free to choose the **color mode** that best suits your needs. To include lineart graphics in the recognized documents, scan in black-and-white, to include black-and-white photos, scan in greyscales, to include color pictures, scan in color.

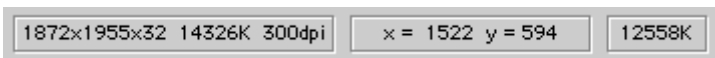
To limit the system requirements, Readiris processes 16 bit palette images (65,536 colors) by default. It takes the "Preferences" command under the "Edit"

menu to process “true color” images (16 million colors) or 8 bit images (256 colors or greyscales).



It goes without saying that greyscale and color images are slower to acquire and require more RAM memory than “bilevel” images! When you increase the color mode to true color, the required free RAM memory increases from 22 MB to 32 MB!

Note that the image size and bit depth is mentioned on the Readiris status bar; the status bar exclusively gives info about the actual image, never about its “reduced” version.



Scanning in greyscale and color isn't just useful to save the graphics with sufficient quality, in some instances, it's also useful or necessary to obtain good OCR results! When text is printed on a color background, scanning in color may create the tone differences that are lacking in black-and-white images. When there is only limited contrast between the text and the background, the background can create “noise” that renders the recognition difficult or impossible!

Think for instance of black text printed on a dark background: when you scan such a document in black-and-white, you may not be able to “drop” the background color without losing the text information as well, as much as you may try to adjust the scanner brightness...

MASAYOSHI SON, 42, president and CEO, is the master Net empire builder. His conglomerate holds stakes in 300 Internet companies in the U.S., Japan, Europe, and other Asian countries. Today, Softbank manages about $4 billion in venture capital funds for global investments.

YASUMITSU SHIGETA, 35, has invested in more than 70 Web or mobile Net-based ventures in Japan and the U.S., including Tumbleweed Communications and Phone.com. Shigeta is also developing new businesses that take advantage of the growth of the Internet and mobile communications.

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Readiris creates a black-and-white version for every greyscale and color image. Thanks to its intelligent routines, even tough cases get solved - here's how our “difficult” image gets binarized by Readiris!

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To view a scanned image in black-and-white, disable the option "Display Image in Color" under the "View" menu.

Original images - be they color, greyscale or black-and-white - use color borders to indicate the window type; the black-and-white versions use “fill” colors. With greyscale and color images, it would be a shame to mask the actual color tones with a “fill” color! (The default colors are yellow for text zones, blue for graphics and purple for table windows.)

Whatever your scanning mode may be, maintain a scanning **resolution** of 300 dpi. In all probability, this is *not* the default setting of your “plug-in”! Select a resolution of 300 dpi for normal applications, use a higher resolution of 400 dpi for small print (below 10 point) and when the document is very degraded.

Readiris reads **point sizes** of 6 to 72 point (0.08 to 1" or 0.21 to 2.54 cm).

6 point

72 point

Readiris also recognizes “**drop letters**”, large caps that cover several lines. (These can of course be no bigger than 72 point!)

Readiris reads drop letters (also called “drop” caps) that cover several lines and assigns them to their starting line.

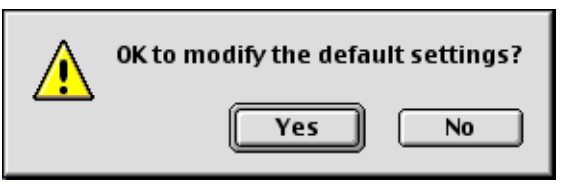
Whenever you need to adjust the page orientation, you can use the **rotation** tools on the toolbar. (Corresponding commands are found under the "View" menu.)

Three rotation directions are available: clockwise, anti-clockwise and upside down. Rotation takes a few seconds as the image itself is updated, not just the display on-screen.

SAVING DEFAULT SETTINGS

Set the program parameters correctly and click the command "Save As Default" under the "Settings" menu to save the current settings, including your scanner model, as default **settings** for future use.

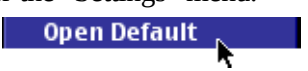
When you quit the Readiris software and the settings were modified, you are invited to save the current settings as default settings.



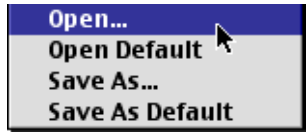
Settings files contain more than the scanner model: they also determine whether you are going to use interactive learning, which language and font type - for instance a normal, proportional font - the documents have, which output mode is used - for instance send HTML texts to Internet Explorer - etc. In short, *all* operational settings of Readiris are stored in the settings files.

SAVING SPECIFIC SETTINGS

The default settings will obviously be used at each program startup. To restore the default settings without having to quit the Readiris software, use the command "Open Default" under the "Settings" menu.



You can also save specific settings to avoid having to redefine the operational parameters. The commands "Save As" and "Open" under the "Settings" menu take care of this.



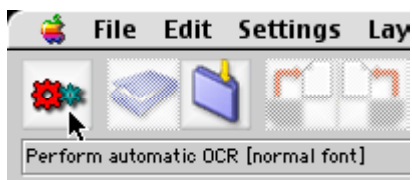
Let’s give an example: if you regularly have to OCR German documents, you are recommended to create a settings file for this type of document. You would then select "German" as the document language, disable learning because the same typefaces are used systematically etc.

RECOGNIZING PAGES AUTOMATICALLY

Now that our scanner is set up, we want to get started capturing documents. Instead of going through all the parameters, we'll execute **automatic OCR**, a very comfortable way of recognizing pages.

Click the "Auto" button (or select the command "Automatic OCR" under the "Process" menu).

As is the case with the "Recognize" button, the tooltip of the "Auto" button indicates which read mode is enabled - normal or dot matrix.



We will now perform fully automatic OCR, that is we will recognize a page immediately, without any interruption. Automatic OCR means that a page is suc-

cessively scanned, windowed by page analysis or a zoning template and recognized without interactive learning. All you have to do is initiate the scanning and save the recognized text, the intermediate steps are handled by Readiris.

READIRIS RECREATES YOUR DOCUMENT LAYOUT

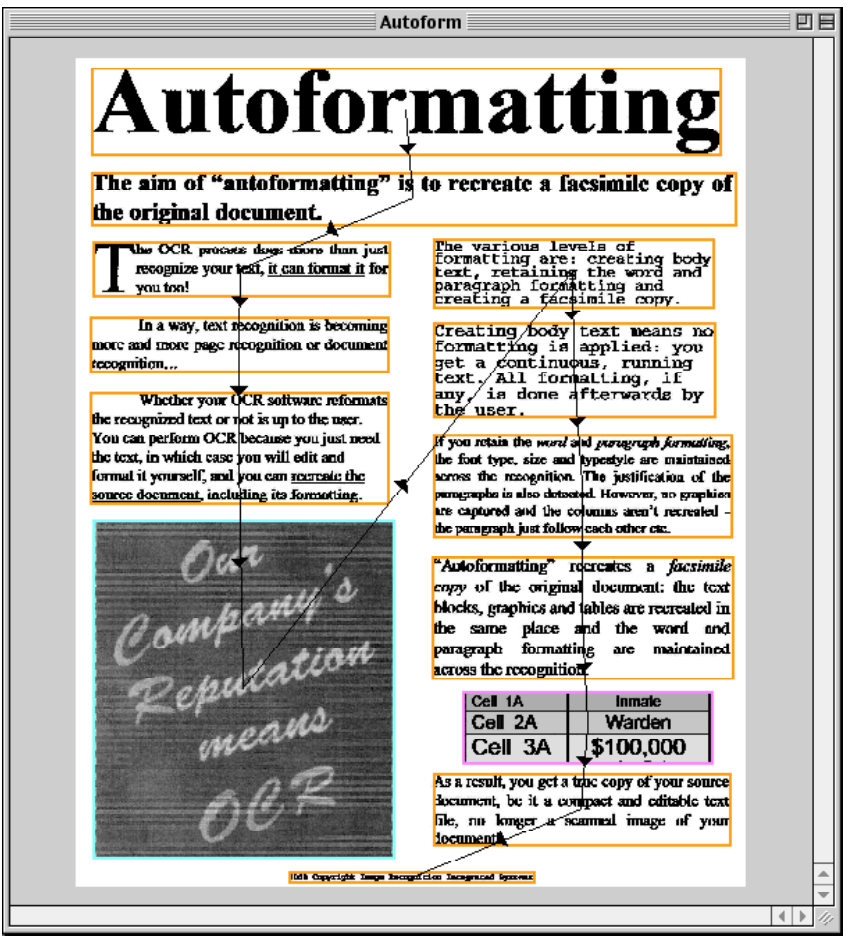
Automatic recognition, which renders the recognition process automatic, should *not* be confused with autoformatting! "Autoformatting" means that Readiris recreates a **facsimile copy** of the scanned document: the word, paragraph and page formatting of your original document are applied.

Similar typefaces (serif and sans serif, proportional and fixed, normal and condensed) are used as in the source document, the point sizes and typestyles (bold, italic and underlined) are maintained across the recognition. The tabs and the alignment (left, centered, right and justified) of each text block are recreated. The placement of columns, text blocks and graphics follows your original document.

In other words, Readiris allows you to archive a true copy of your documents, be it a editable and compact text file instead of a scanned image!

All this implies that the sorting of windows only *partially* applies when "autoformatting" is used: you can include and exclude zones, but any re-ordering of zones is simply ignored!

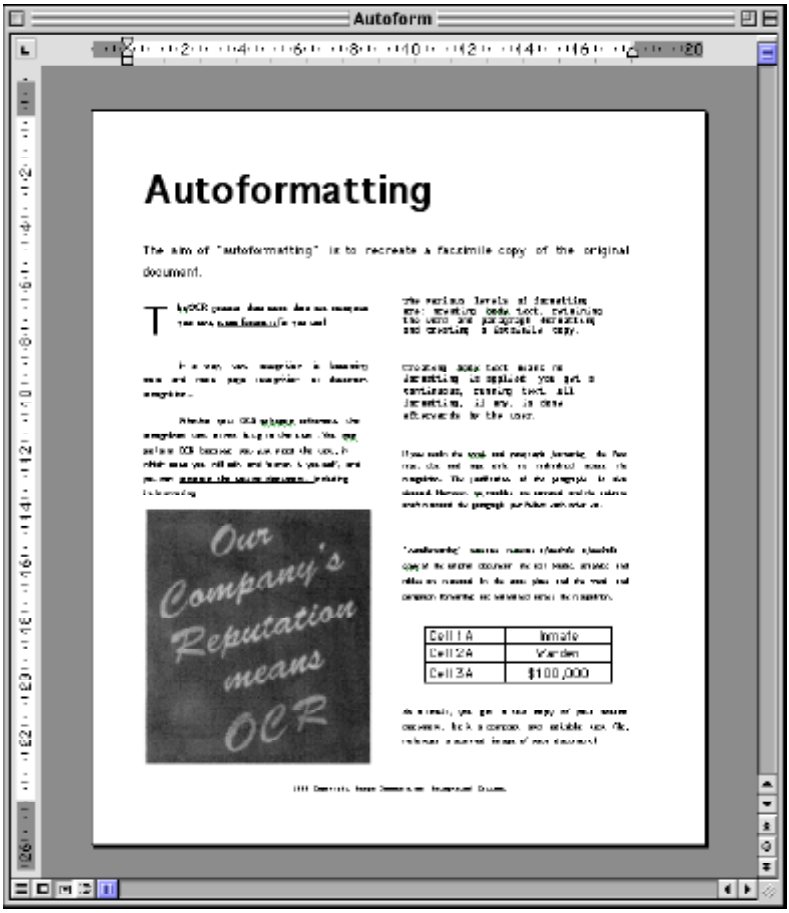
Here's an example of how it works. To get acquainted with this feature, open the image Autoform.jpg which is found in the image folder.


Autoform
Autoformatting
The aim of "autoformatting" is to recreate a facsimile copy of the original document.
The OCR process does more than just recognize your text, it can format it for you too!
In a way, text recognition is becoming more and more page recognition or document recognition...
Whether your OCR software reformats the recognized text or not is up to the user. You can perform OCR because you just need the text, in which case you will edit and format it yourself, and you can recreate the source document, including its formatting.
Our Company's Reputation means OCR
The various levels of formatting are: creating body text, retaining the word and paragraph formatting and creating a facsimile copy.
Creating body text means no formatting is applied: you get a continuous, running text. All formatting, if any, is done afterwards by the user.
If you retain the word and paragraph formatting, the font type, size and typestyle are maintained across the recognition. The justification of the paragraphs is also detected. However, no graphics are captured and the columns aren't recreated - the paragraph just follow each other etc.
"Autoformatting" recreates a facsimile copy of the original document: the text blocks, graphics and tables are recreated in the same place and the word and paragraph formatting are maintained across the recognition.
Cell 1A
Inmate
Cell 2A
Warden
Cell 3A
$100,000
As a result, you get a true copy of your source document, be it a compact and editable text file, no longer a scanned image of your document.

Click the "Format" button, select the text format RTF (Rich Text Format) and the layout option "Recreate Source Document". (The option "Merge Lines into Paragraphs" is disabled by default.) Enable the option "Ask Name and Location" to send the reading result to an RTF file or, if Microsoft Word is installed on your computer, send the OCR result to Microsoft Word.

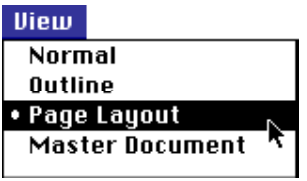
Note that layout reconstruction is limited to the RTF format - and indirectly to target applications that support the RTF format adequately. A “poor” format generating “plain” text such as ASCII does *not* support advanced formatting codes and therefore cannot offer autoformatting. On the plus side, the RTF format is a widely used text format that can be opened by any popular wordprocessor.

When the recognized text is opened using a wordprocessor, the text looks like this without *any* intervention by the user.



To see the effect correctly, you need to enable the “WYSIWIG” mode of your wordprocessor, mostly called “page layout” mode. However, if you send the

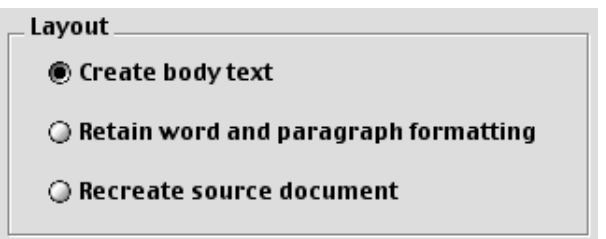
recognized document directly to Microsoft Word, the page or print layout view is activated automatically!



In short, Readiris not only recognizes your texts, but can format them for you as well. OCR isn't just text recognition anymore, it is becoming more and more **page** or document **recognition** as well!

TEXT FORMATTING, PART 2

The other layout options are "Create Body Text" and "Retain Word and Paragraph Formatting".



Creating **body text** means you create a non-formatted, “running” text. The text will be captured, but its formatting is entirely ignored. Use this option when you just need to recapture a text but not its layout.

The option "Retain Word and Paragraph Formatting" represents the middle road: the **word formatting** - font type (serif - sans serif, proportional - fixed, normal - condensed), point size and typestyle (bold, italic and underlined) - is retained across the recognition, and so is the **paragraph formatting** - the tabs and the alignment (left, centered, right and justified).

Don't confuse this formatting option with “full” autoformatting: this option just puts one paragraph after the other, it does not recreate columns or copy the relative position of the various zones.

SAVING GRAPHICS SEPARATELY

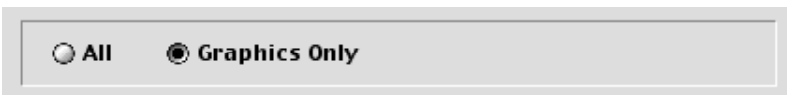
In our example, the graphic was included in the recognized text; whether this is the case depends on the formatting option "Include Graphics". Saving graphics inside the text is only possible with “full” autoformatting, not with a “poor” text format such as ASCII.

Still, with Readiris, you can save graphics without performing text recognition. As Readiris supports black-and-white, greyscale and color images, you can capture lineart graphics and photographs.

How? Draw a graphic zone around the illustrations, cartoons etc. you need. Creating graphic windows manually is done in the same way as drawing text and table windows, simply select the graphic window tool now.

Similar to the other window types, the tooltip of the graphic window tool tells you how many graphic windows there are.

Next, choose the command "Save As" under the "File" menu and enable the option "Graphics Only". You are prompted to specify a filename.



Determine which graphic file format you will use. Select a format that's supported by your paint or photo retouching software. A multitude of popular graphic formats is available: the internal Readiris format (PICT), JPEG, Photoshop, PNG, TIFF and Windows bitmaps (BMP).

The graphics are saved in a single file. You don't have to limit yourself to a single graphic, but if you draw several graphic windows, they will be collected, “stacked” in a single file. (You can use the crop command of your paint or photo retouching program to separate them.)

Sides smaller than 1 mm are not allowed - bitmaps of that size hardly contain any information. “Irregular”, non-rectangular windows are allowed, and so are several graphics. The surface *not* covered by your “complex” graphic zones remains white. In the example below, two graphics zones - one in the left lower corner and the other in the upper right corner - lead to lots of white space around the actual graphics.

READING FAXES AND DEFERRED RECOGNITION

Saving images as image files opens another possibility: you can save the *full* page and perform **deferred OCR** on it later on. That's what we did with the prescanned images of our tutorials.

Simply scan a document and select the command "Save As" under the "File" menu. You'll be prompted to save the entire page as a graphic file when you enable the option "All". (Any windows you might have detected or drawn on the page are ignored.)

When you save a document as a JPEG file for deferred OCR, ensure that you maintain sufficient image quality. JPEG files with high compression rates degrade the image quality - and the performance of your OCR software can suffer as a consequence.

You can now open the image file with the "Open" button (or with the corresponding command under the "File" menu). Or double-click the icon of a Readiris image to load it into Readiris. Or still drop the image on the Readiris icon.

Readiris image

Color, greyscale and black-and-white images are supported on an equal basis: Readiris allows you to open FlashPix images, GIF images, JPEG images, MacPaint images, Photoshop images, PICT images (called “native” Readiris documents), PNG images, QuickDraw GX images, QuickTime images, Silicon Graphics images, Targa images, (uncompressed, packbits and Group 3 compressed) TIFF images and Windows bitmaps (BMP).

This capability is particularly useful to convert your **faxes** into editable text files! If you have any influence over your correspondents, ask them to send faxes with the “fine” quality - those faxes have the higher resolution of 200 dpi and will yield better OCR results.

RECOGNIZING TABLES

So far, we've recognized texts and faxes and we've saved graphics. Let's process a table now. Take a table of figures and scan it, or open the sample image Table.jpg in the image folder.

Actually, the image Table.jpg contains two tables, and that's no coincidence! The page analysis zones them as table windows, and Readiris will reconstruct them for you by recreating the tables cell by cell in your spreadsheet or by inserting a table object inside your wordprocessor files.

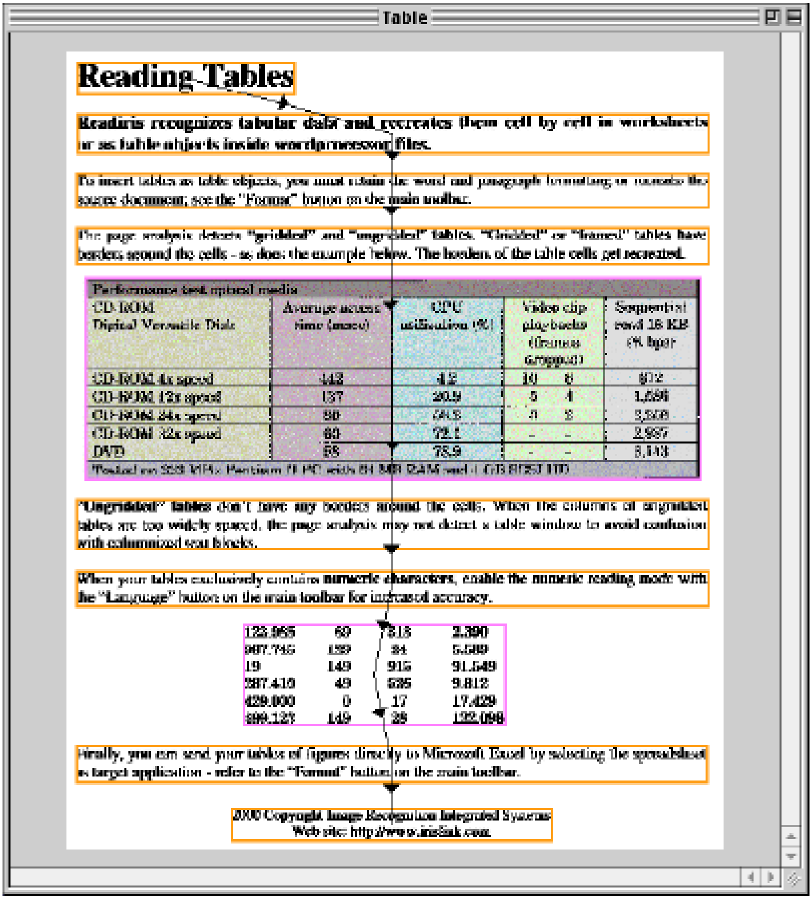
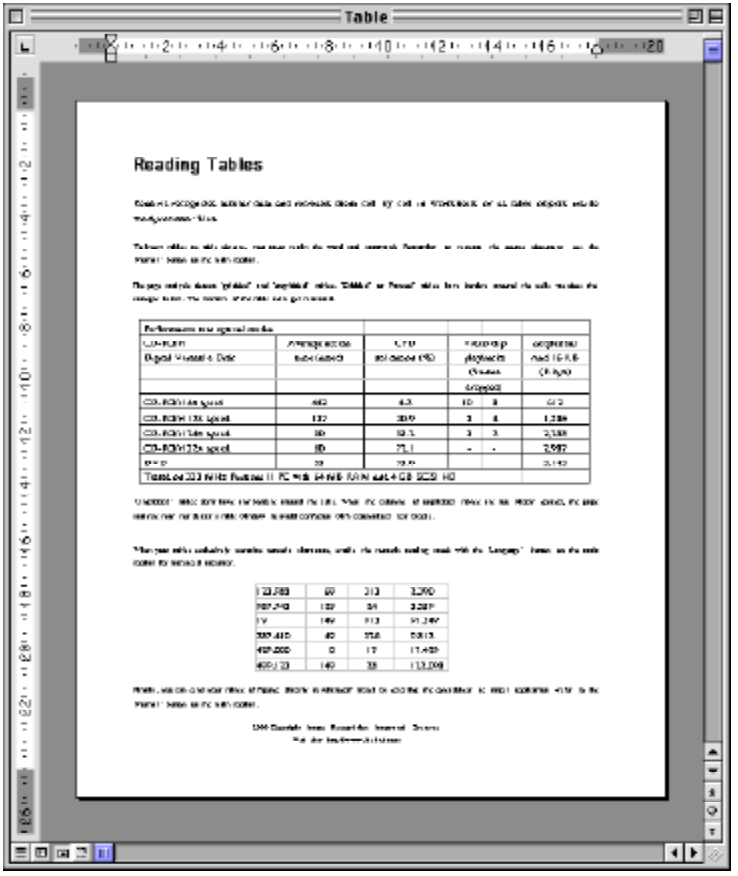


Table
Reading Tables
Readiris recognizes tabular data and recreates them cell by cell in worksheets or as table objects inside wordprocessor files.
To insert tables as table objects, you must retain the word and paragraph formatting or recreate the source document; see the "Format" button on the main toolbar.
The page analysis detects "gridded" and "ungridded" tables. "Gridded" or "framed" tables have borders around the cells - as does the example below. The borders of the table cells get recreated.
Performance test optical media
CD-ROM Digital Versatile Disk
Average access time (msec)
CPU utilization (%)
Video clip playbacks (frames dropped)
Sequential read 16 KB (K bps)
CD-ROM 4x speed 443 4.2 10 6 602
CD-ROM 12x speed 137 20.9 5 4 1,686
CD-ROM 24x speed 80 58.8 3 2 3,208
CD-ROM 32x speed 80 72.1 - - 2,987
DVD 58 78.9 - - 3,143
Tested on 333 MHz Pentium II PC with 64 MB RAM and 4 GB SCSI HD
"Ungridded" tables don't have any borders around the cells. When the columns of ungridded tables are too widely spaced, the page analysis may not detect a table window to avoid confusion with columnized text blocks.
When your tables exclusively contain numeric characters, enable the numeric reading mode with the "Language" button on the main toolbar for increased accuracy.
123.965 69 518 2.390
987.745 139 84 5.509
19 149 915 91.549
387.410 49 535 9.812
429.000 0 17 17.429
399.127 149 38 122.098
Finally, you can send your tables of figures directly to Microsoft Excel by selecting the spreadsheet as target application - refer to the "Format" button on the main toolbar.
2000 Copyright Image Recognition Integrated Systems
Web site: http://www.irislink.com

Run the recognition with the layout option "Retain Word and Paragraph Formatting" or "Recreate Source Document" enabled and the tables get recreated. Open your wordprocessor to have a look at the result.



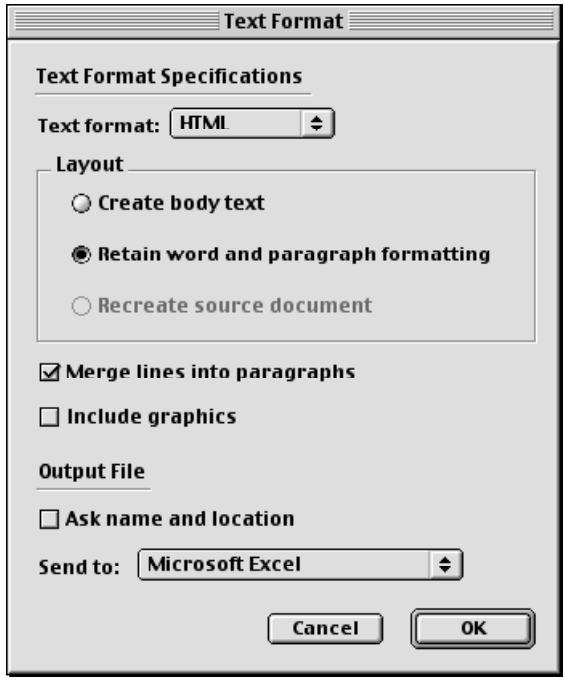
Have a closer look at the “gridded” or “framed” table - the scanned table that had borders around the cells. The cells and the borders were recreated by Readiris one by one!

Let's concentrate on the “ungridded” table for a moment - it has no borders around the cells. Note that the page analysis has nevertheless detected it. There's another interesting aspect to this table: its content is purely numeric!

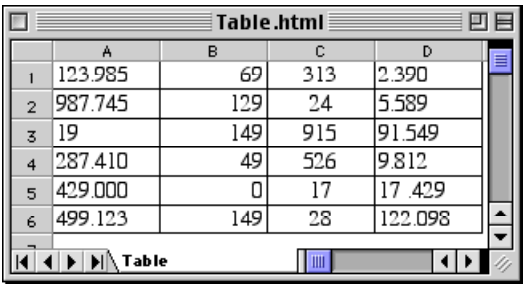
For optimal OCR accuracy of such tables, we can limit the recognition to the **numeric symbols** with the "Language" button. (The numeric mode is not strictly numeric, it includes the symbols 0 to 9, +, *, /, %, , (comma), . (dot), (,), -, =, $ and £.)

As you can only do this when the table doesn't contain any alphabetic symbols - otherwise the text portions won't be recognized correctly - we can activate the numeric mode only when we recognize this table but not the rest of the document.

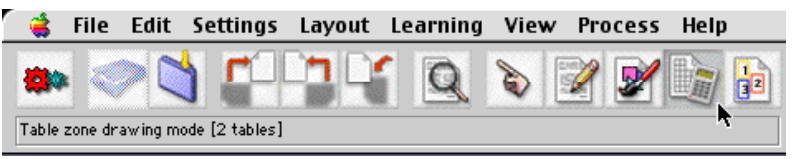
When we do so by selecting this table with the "Sort" button, we can send the OCR result directly to the spreadsheet Microsoft Excel. Select HTML as text format and Excel as target application with the "Format" button.



The spreadsheet is started up and the typical table structure with rows and columns gets recreated; you are immediately ready to process the data.



You may come across “ungridded” tables the page analysis does not detect as table zones because the columns are too widely spaced - Readiris tries to avoid confusion with columnized text blocks. To create a table window manually, click on the table window tool in the toolbar and proceed as usual; as expected, the button's tooltip indicates the number of table windows.



GETTING PRODUCT SUPPORT

This concludes our overview of Readiris. To get product support, you can contact I.R.I.S. by e-mail at the address *support@irislink.com*. Please describe the phenomenon you experience clearly and include all relevant data concerning Readiris and your computer system.

You can also find more information on Readiris on the I.R.I.S. web site (www.irislink.com); the command "I.R.I.S. on the Internet" under the "Help" menu takes you directly to the I.R.I.S. home page.