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Introduction

FullRecall is a software that is able to help you to learn new things faster and KEEP them in your memory as long as you want to with a minimum waste of time. It is known that we keep forgetting things. The longer the time you used some information for the last time – the higher the probability that you will have trouble recalling it now.

If you want to keep some information in your mind – you have to repeat it from time to time. It is true that you could read certain books or articles or notes, every two weeks or months. But that certainly would not be optimal, as the amount of information keeps growing, and your time – isn't.

It would be best to extract only most important things in brief form of entries or questions with answers and repeat them only as often as absolutely necessary to keep them alive in your memory.

And that's exactly what FullRecall does: it schedules repetitions of your extracted information on exactly right time. Not too early, so you don't waste your time on repeating things you can still remember, and not too late, so you can still recall the information and by that – refresh it in your memory. Use FullRecall daily – your time will not be wasted, since you will be presented with only those information, that you're close to forget.

FullRecall uses Artificial Neural Network (ANN) to learn your memory profile. With every repetition you evaluate how well you remembered an information using clear scale of grades. With this information ANN is able to extend or shorten the time to the next repetition of a certain item.

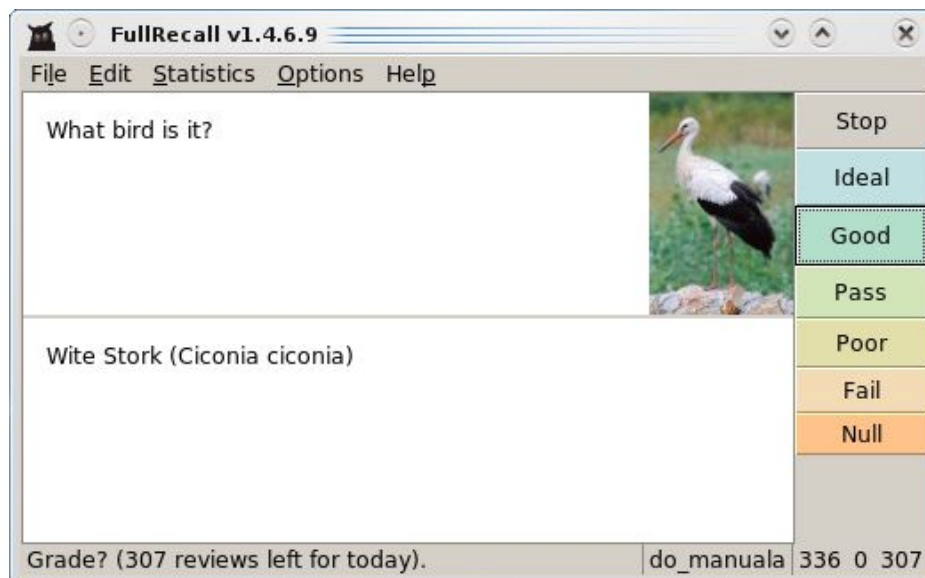
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Examples of use of FullRecall

Where's FullRecall best to use? The most important example is **learning languages**. To speak fluently some foreign language you have to remember certain amount of words. “Fluently” means also having a lot of words in memory and recalling them right away while speaking the language. FullRecall allows you to keep a lot of words fresh in your memory with minimum time used for repetitions.

Another example could be remembering phone numbers, addresses, names and anything you want to keep in your memory instead of constant searching your notes, calendars and contact lists.

For **students** FullRecall can be a best tool to **learn new subjects**. With minimum effort of extracting information after every lecture (this can take as little as few minutes thanks to tools provided by FullRecall) – you can be perfectly prepared for an exam with minimum time used for learning. Let's take biology as an example: you can store extracted information on birds, proteins or cell structure using words, pictures or sounds. Using FullRecall daily – you will be refreshing informations you can't remember well. FullRecall will not bother you with things you can recall perfectly.

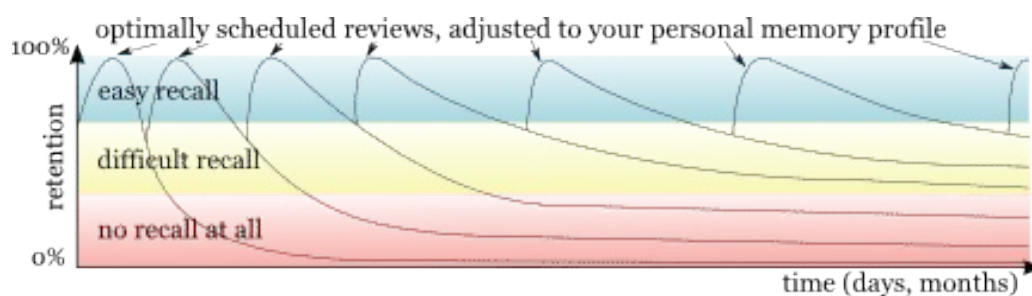


So after a while you will find yourself well prepared for an exam, without last few days before an exam filled with rush and frantic devouring of names and diagrams and inability to remember everything at once.

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Important note about the beginning of learning

When you're beginning to use FullRecall and you're repeating daily your prepared information – you may start to think, that you're not learning much, because you are being asked things you just can't remember and things you have trouble recalling. Please, do not be discouraged! This is because you are being kept away from things you DO remember – and that's the whole idea: not to repeat things you remember but work on things you do not. So the initial difficulties are normal and expected. Soon you will remember those questions better and better and you will notice certain improvement.



Like on a picture above, showing learning by repetitions and remembering a certain fact, you will find yourself remembering more and better. The key to this is working every day with FullRecall. Unfortunately, nothing will be done, unless you do it. FullRecall will help you to remember, and will make sure you do not spend more time learning than it's absolutely needed, but it will not do the work instead of you. Nor will any other software:)

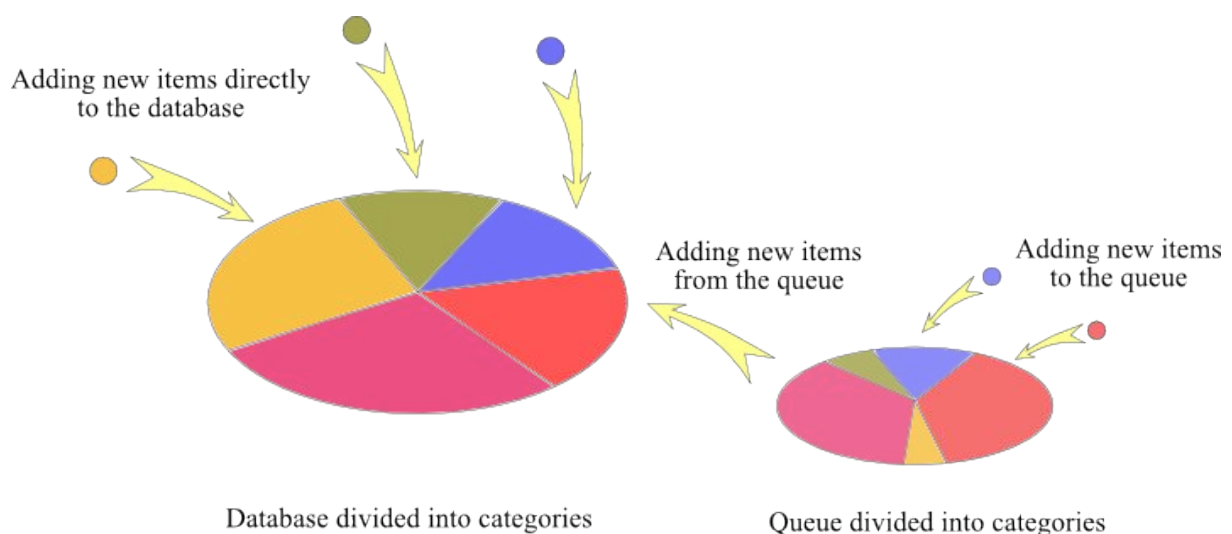
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Database structure

Database:

You can store all your items directly in a FullRecall database, without any difference what a certain item is. But it's more neat to store your items divided into categories or even subcategories, so if need be, you can always choose what would you like to learn now: perhaps geography only, right before an exam, or some Spanish verbs because you keep forgetting them.

FullRecall database is divided into categories, like on a picture below. When you add new items you would like to learn, you can add them to an existing category/subcategory or you can create new ones, just as you add an item.



The Queue:

There is also something called the queue. It allows you to create new items, but without adding them to your review schedule. It's useful when you've got a lot to learn, and you're just not ready to review more new things, but you'd like to prepare some for a later time.

The queue is divided into the very same categories that the database. If you want to add a new category – it will appear in a database as well, and new items will be available for learning when you decide to add them. Adding items from the queue to the review schedule is done with *New* button in the menu to the right.

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Main Menu

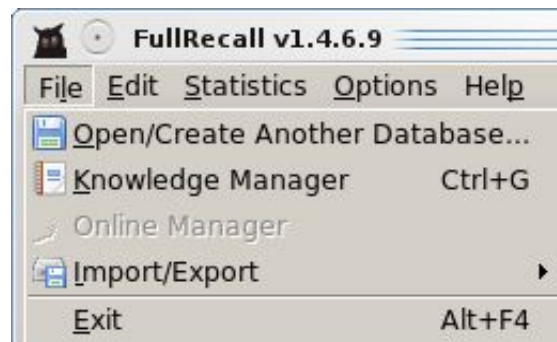
Main menu consists of five elements:

- [File](#)
- [Edit](#)
- [Statistics](#)
- [Options](#)
- [Help](#)

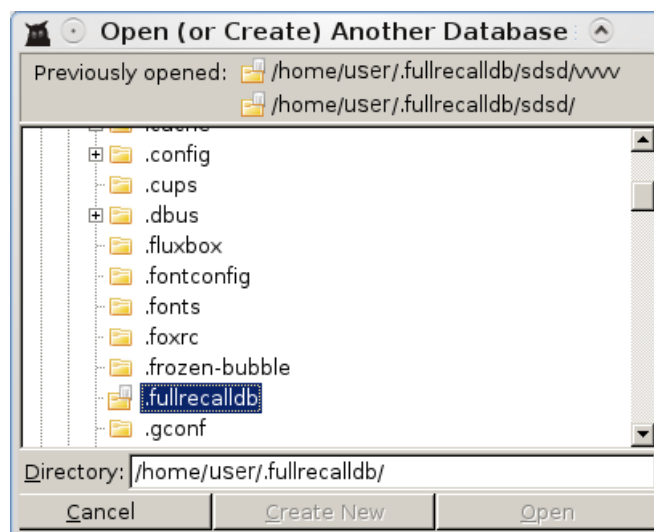
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→ **File**

Menu File consists of five elements:

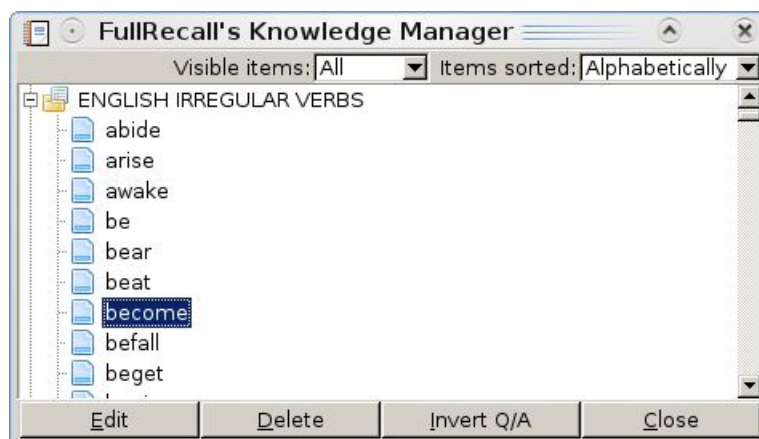


- *Open/Create Another Database* (alt+l, alt+o) allows you to open a file containing another database or create a new one.



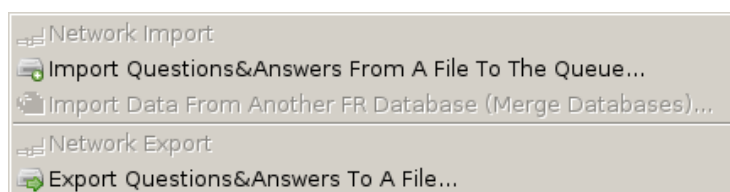
To open another database choose a right file in a dialog window and then click *Open* button. To create new database select a right directory and click *Create New* button. If you type a nonexistent name in a *Directory* line and press *Enter* and *Yes*, new directory will be created with a given name.

- *Knowledge Manager* (ctrl+g) allows you to make certain changes in your database.



Edit allows you to edit selected element, and then save it with *Save* button appearing in right menu. With *Delete* button you can delete selected element or more elements, if you select them with control key. *Invert Q/A* allows you to automatically swap question and answer in a selected item or items, if you select them with a control key. *Close* closes this window.

- *On-line Manager* allows you to manage your on-line database. This function is available for registered users only.
- *Import/Export* (alt+l, alt+i) consist of submenu:



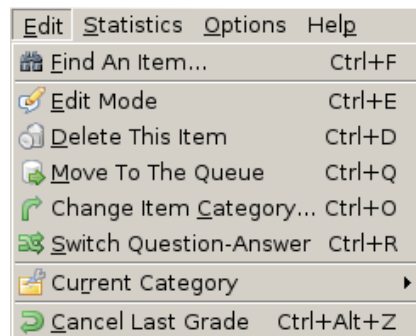
- *Network Import* allows you to import (previously exported) database from a FullRecall server (for registered users only). This function is very handy if you want to keep one version of your database accessible from everywhere. The database is stored on a FullRecall server. This function is available for registered users only.
- *Import Questions&Answers From A File To The Queue* allows you to import items stored in a file to the queue, without adding them to your review schedule. It's possible to import from a file with one of

following formats:

- FullRecall format
- SuperMemo format
- TXT format with questions and answers delimited with TAB.
- *Import Data From Another FR Database (Merge Databases)* allows you to make one database of two separate databases. All items from both will appear in currently opened database.
- *Network Export* allows you to export your database to the FullRecall server and keep it there – available from everywhere and always up to date. This option is available for registered users only.
- *Export Questions&Answers To A File* allows you to store parts or whole of your database in a file. You can choose from three formats: FullRecall format, SuperMemo format or text delimited with tabs.
- *Exit* (alt+F4) closes FullRecall window.

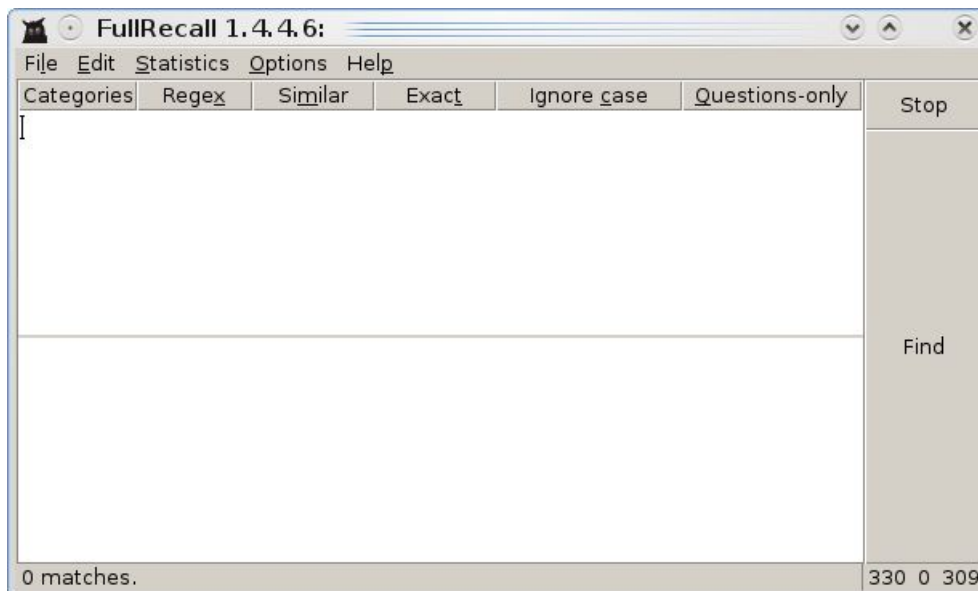
→ **Edit**

In this menu you have the following functions available:



They all allows you to edit certain properties of items in your learning process:

- *Find An Item* (ctrl+f) finds a certain item in your database. When you select this feature new menu appears:



- *Categories* allows you to select categories to be searched. You don't have to look for an english verb in your biology section.
- *Regex* allows you to use regular expressions in your search. Dot followed by star (.*) can be used to substitute any number of any characters.

Examples:

do.* typed in a search window will make FullRecall find any items that contain words starting with “do”, like do, dot, down, dove.

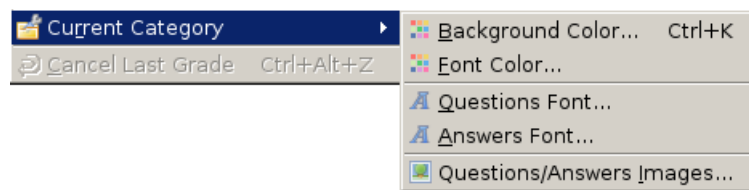
.*ght.* will similarly display all items that contain words that start and end with any characters, but contain “ght” somewhere, like thought, wrought.

- *Similar* allows you to do less strict search, using fuzzy logic. This feature is available for *registered users* only.
- *Exact* allows you to look for an exact string of characters. Whatever you type in – FullRecall will look exactly for what you typed.
- *Ignore Case* allows you to look for words without distinguishing between upper and lower case.
- *Questions-only* allows you to perform search amongst questions, excluding answers.
- *Edit Mode* (ctrl+e) will allow you to edit currently visible item: retype and reformat text or add pictures or sounds. When you select edit mode new icons will appear in main menu bar:



- *Delete This Item* (ctrl+d) removes current item from your database.

- *Move To The Queue* (ctrl+q) removes current item from your learning process and places it in the queue. It also resets interval for a current item: it is important to do so if an item is completely rewritten and has a different difficulty after the changes.
- *Change Item Category* (ctrl+o) changes the category that current item belongs to. You can then relocate misplaced items that you stumble upon during your learning process.
- *Switch Question-Answer* (ctrl+r) swaps question and answer of current item: what was the answer now is a question, what was the question becomes an answer.
- *Current Category* is a submenu. It allows you to change properties of current category:



- *Background Color* (ctrl+k) allows you to set a certain background color for a current category. This can be one more tool helping you to recall answers, separating categories more precisely. For example: you can set green for biology, blue for geography, yellow for physics etc., this way a color will associate with a certain knowledge field.
- *Font Color* will change font color for a current category. Works similar to *Background Color*.
- *Questions Font* will allow you to set a font for all questions in a current category (typeface, size, etc.). For example you can set all questions to *Italic*.
- *Answers Font* works the same as *Questions Font*, only for answers. For example you can set all answers to **Bold**.
- *Questions/Answers Images* works similarly to the *Background Color*, only allows you to use images instead of colors. For example you can use a picture of a distant galaxy as a background for your Astronomy category.
- *Cancel Last Grade* (ctrl+alt+z) allows you to cancel the grade you just gave yourself while learning. Easy to fix some wrong click.

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→ *Statistics*

In this menu you can review your learning process:

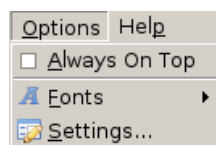
- *General Statistics* (ctrl+s) will show you three things (accessible by buttons to the right):
 - *General* will show you some numbers describing your learning process: for how long you're using FullRecall, how many items and categories you have in your database, how long intervals between reviews are, what average grades you gave yourself, and so on.
 - *Items/Reviews* shows you how many items has a specific number of scheduled and executed reviews. It only counts reviews prepared by Ann, doesn't count forced reviews. In time you can see how numbers increase, as you work with FullRecall day by day.
 - *Items/Intervals* shows you how many items has a specific interval, calculated by ANN. In time you can observe how intervals get longer, as you remember things better.
- *Item's Statistics* (ctrl+m) will show you all the data about current item. You can keep track of an item and it's learning process.

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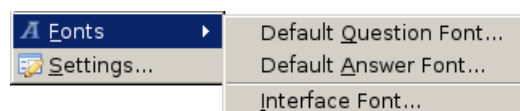
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→ *Options*

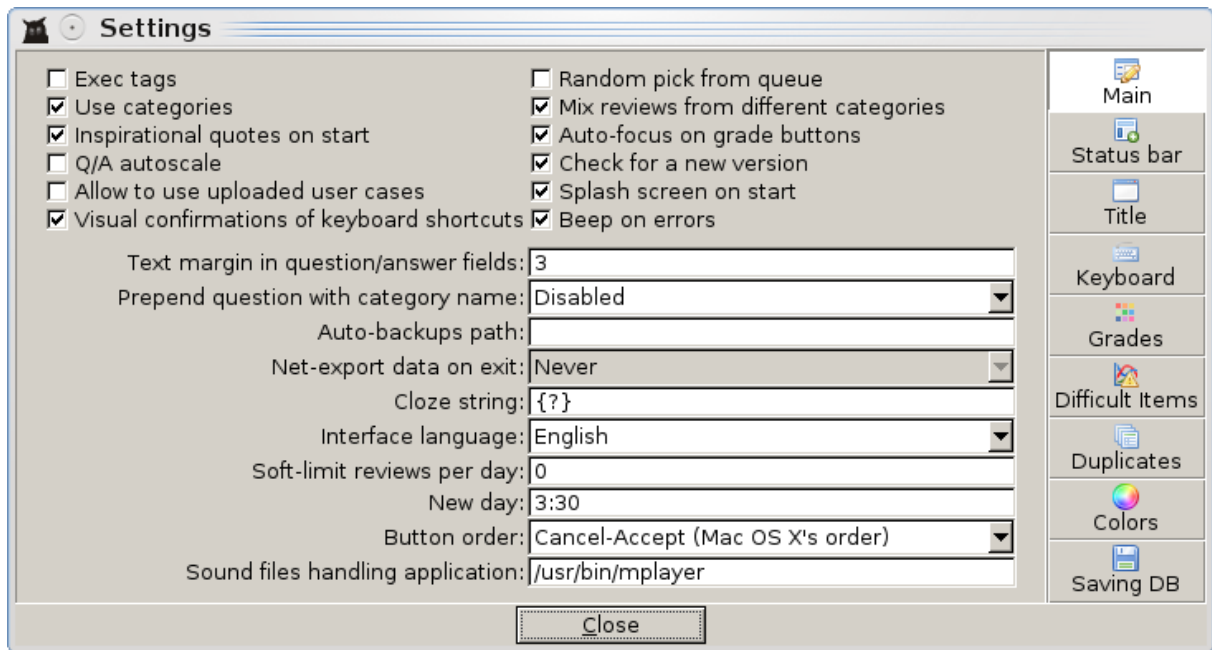
In this menu you can switch and toggle properties of your FullRecall. What you see in *Options* is:



- *Always On Top* speaks for itself. Check to box to keep FullRecall on top of other windows.
- *Fonts* allows you to set default fonts for questions, answers and FullRecall interface:



- *Settings* is a main dialog box to change settings of your program. It has few tabs, each concerning different things:

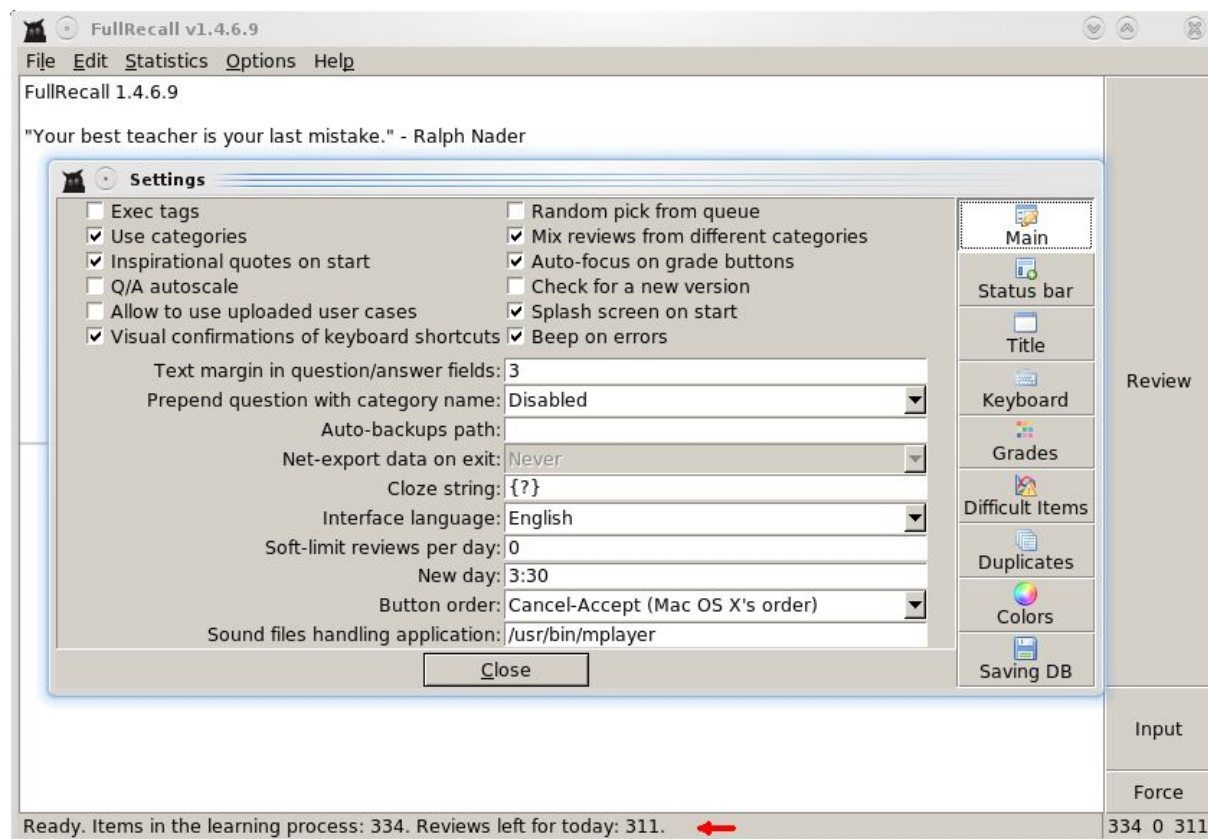


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→ *Main*

In *Main* menu you can set most important variables to make FullRecall as handy as possible. Most options are explained at the bottom of the MAIN window and in yellow tips boxes – both appearing when you point a certain setting with a cursor. Red arrow indicates where does the help appear (apart from tips boxes appearing right next to cursor).



- *Exec tags* ticked allow you to use external programs to open any files you'd like to use during learning: pictures, movies, sounds etc. if FullRecall isn't able to open certain file by itself (you can use pictures directly in FullRecall) .

Example:

```
<exec>mplayer ~/my_database/movie.avi</exec> will open mplayer and play movie.avi.
```

Information on *exec tags* you can also find in *Help*→*Tips*.

- *Use categories* ticked turns using categories on. E.g.: FR will ask you about category when you'll be adding new items to your database.
- *Inspirational quotes on start* is really self explanatory. Though they appear only when your interface language is English.
- *Q/A autoscale* ticked makes questions and answers boxes scaled

according to space occupied by question and answer.

- *Allow to use uploaded user cases* allows FullRecall to use data on your memory from your database – if you've uploaded it to FullRecall's server. It's only to improve future ANN versions.
- *Visual confirmation of keyboard shortcuts* will make buttons look like really pushed when you use keyboard shortcuts. Just in case you'd like to see that the shortcut you used was the right one.
- *Random pick from queue* ticked makes FullRecall choose random item (instead of the first one) when introducing it to your learning process.
- *Mix reviews from different categories* makes FullRecall mix items from different categories when you're learning, so you don't get bored with geography when you've got also biology and history waiting for you.
- *Auto-focus on grade buttons* will make „Good” button selected when you need to grade your answer. You can use up and down arrows to move from grade to grade and „enter” to use a certain grade.
- *Check for a new version* makes FullRecall check for a new version at start up and once in a while when it's started, at most once in every 3 hours. Since upgrades are quite often – it's useful to make FullRecall check for them.
- *Splash screen on start* ticked makes FullRecall to display it's logo on start.
- *Beep on errors* will make FullRecall beep when an error occurs, e.g when you're trying to open some menu before closing previous one.
- *Text margin in question/answer fields* inserts a certain margin (in pixels) around questions and answers. Just type in a number that makes the text look best for you.
- *Prepend question with category name* will display an appropriate category before each question. If that will help you to recall answers – choose „Enabled” in this box.
- *Auto-backups path*: if you specify a path in this box FullRecall will start to make backups of your database using this path. If you leave the box empty – backups won't be made.
- *Net-export data on exit*: if you're a registered user you can make FullRecall to send your database to the FR server automatically, just choose how often you'd like to export your database.
- *Cloze string* defines string that replaces question if it's contained in the question.

Example:

You need to remember that „Neelakurinji (*Strobilanthes kunthiana*) blossoms once in 12 years”. You can make FullRecall to ask you about the

number of years by replacing it in the question by the cloze string „{?}”. Then what you see in the question will be:

„Neelakurinji (*Strobilanthes kunthiana*) blossoms once in {?} years”

and the answer will be:

„12”.

To use the cloze string: input the fact you'd like to remember, select the part you'd like to be asked for, right click, choose „Make it answer” (ctrl+N). Done.

Of course you can choose your own string you'd like to use.

- *Interface language* is self-explanatory. You can choose between English and Polish. Auto will make FullRecall decide based on your operating system language.
- *Soft-limit reviews per day* will limit how many reviews you will be presented per day. If you're feeling good enough – leave 0 for no limit.
- *New day* marks the date change for FullRecall. It's best to use the time you're not using FullRecall (like while you're asleep) so you don't encounter new repetitions during learning but when you wake up on the next day.
- *Button order* is there just for your convenience. You can choose which button you'd like to see first to the left: accepting or canceling one.
- *Sound files handling application* gives FullRecall a path to the application that will play sounds for you. This could be `/usr/bin/mplayer` for linux.

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→ **Status Bar**

In the *Status bar* menu you can rearrange your status bar. You can place it in the bottom or on the top of FullRecall window and you can alter what numbers will be shown there. All in nice self-explanatory drop down menus.

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→ **Title**

Here you can change the title displayed in the title bar of FullRecall's window. You can customize the title including such information as path to your current database, FullRecall version or various numbers concerning your learning process. All options with descriptions are listed in this menu and

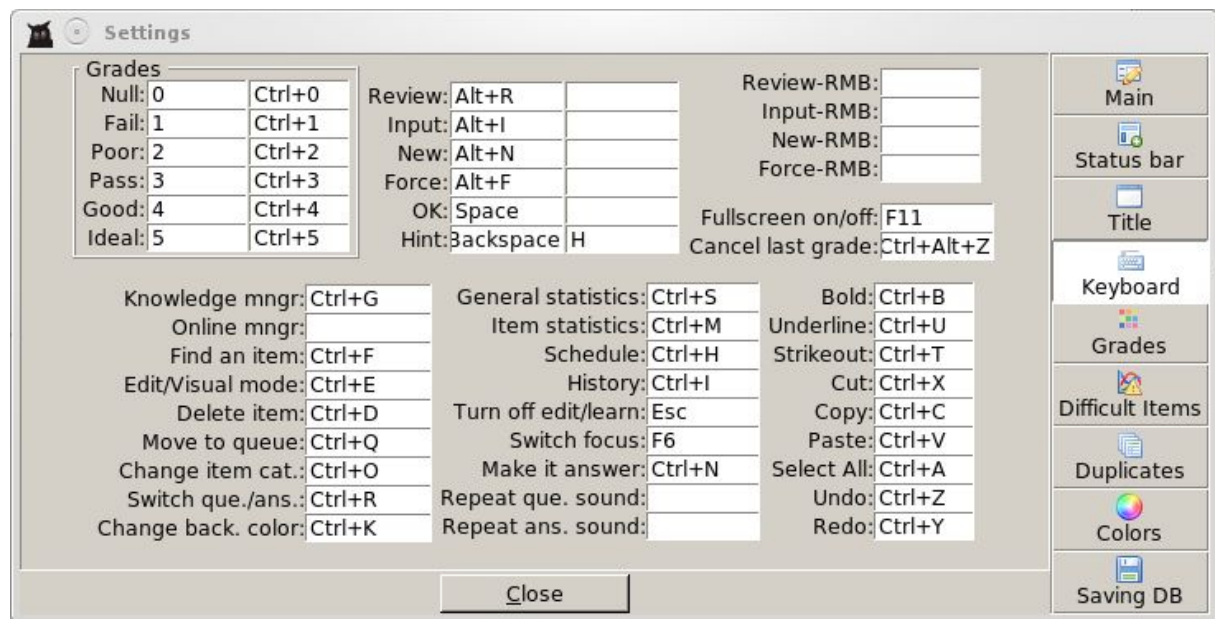
you're also supplied with a training ground in the form of title simulation: you can see ahead what will be displayed in your title bar.

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→ **Keyboard**

In this menu you can set various keyboard shortcuts to operate your FullRecall. The default settings are presented below.



To change a shortcut simply place a cursor in the cell you want to change and press shortcut you want to use. It will replace the old one.

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→ **Grades**

In this menu you can refine your grade scale. First of all you can choose from three types of scales: words from „Null” to „Ideal”, numbers from 0 to 5 or letters from „F” to „A”.

You can also change the feedback you give to ANN: you can make next intervals longer or shorter, depending on weights you give to your grades.

You can also change vertical padding of your grades' buttons (like making low grades smaller and high grades' buttons bigger).

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→ ***Difficult Items***

In this menu you can decide when a certain item should be recognized as a difficult one. That means that if you still cannot remember it well after certain amount of repetitions – FullRecall will warn you about this item and suggest rephrasing it.

Perhaps such item is too long to remember it well and should be rephrased. Sometimes adding a picture or a sound could help. Sometimes one item can be broke into few items, thus better to remember.

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→ ***Duplicates***

In this menu you can instruct FullRecall what to do with items that are duplicated in various parts of your database.

In the Queue: you can choose to leave all items as they are or search for the duplicates and remove them when FullRecall starts. There's another option for removing: you can remove items belonging the same category or remove all duplicates no matter what category they are in.

In the database itself: you can leave all items intact or search for duplicates by one of four self-explanatory filters.

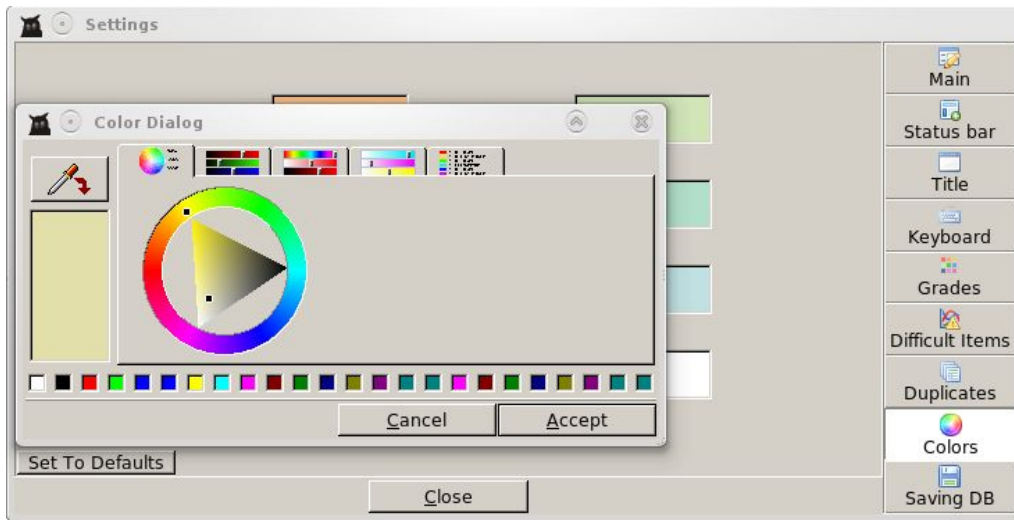
All options are in two drop-down menus.

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→ ***Colors***

In this menu you can set your own colors for grades' buttons, e.g. red for null or green for ideal. Of course, if in your culture the meaning of colors is quite the opposite – you can have it all your way. Just double-click on the colour you wish to change, and from the scale shown below pick the colour you'd like to use.



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→ *Saving DB*

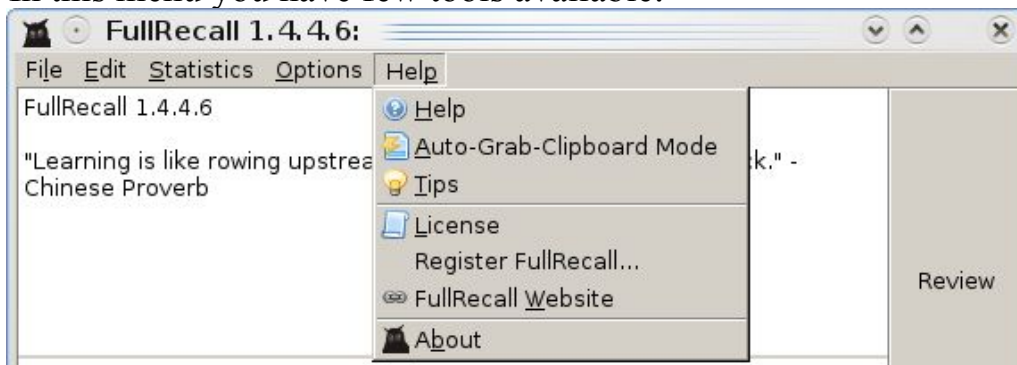
In this menu you can set frequency of saving your database and reviews done. This may be important when working on batteries and your hard drive has to spin each time you save or when saving large DB causes your device to lag. Here you simply choose how many last entered items or reviews done you're prepared to loose in case of power loss or computer crash. Of course you may choose to loose none.

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→ *Help*

In this menu you have few tools available:



- *Help* displays brief help window. You can find there, among others,

descriptions of grades.

- *Auto-Grab-Clipboard Mode* turned on allows you to add items directly from other files or internet sites. You just need to copy (ctrl+c) two pieces of text, one by one. The first one will automatically go into the question area in FullRecall window, the second one will automatically go into the answer area. This works for both, linux and windows, plus in linux you can also just select two pieces of text with mouse. This feature works constantly – you can add many items by simply copying more than two pieces of text: each odd selected text will go to the question area, each even selected text will go to the answer area. Two selected pieces of text make one FR item added to the database.
- *Tips* display few useful tips for FullRecall and for learning in general.
- *License* displays FullRecall's license.
- *Register* FullRecall allows you to register your FullRecall version. It disappears if you're registered User.
- *FullRecall Website* opens FullRecall site in your default web browser.
- *About* shows brief technical information about FullRecall.

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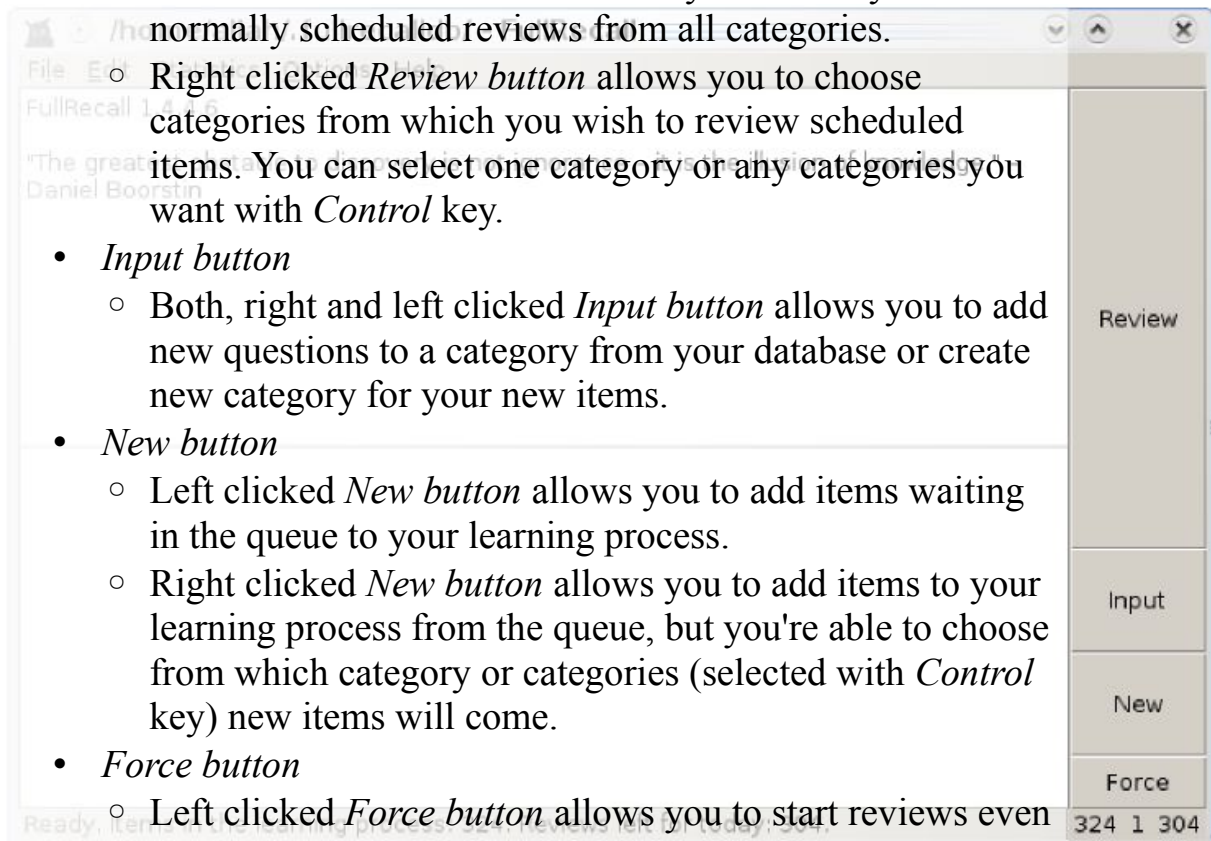
This is it, the end of Main Menu. The next stop is description of Right Menu Buttons.

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Right Menu Buttons

- *Review button*
 - Left clicked *Review button* allows you to start your normally scheduled reviews from all categories.
 - Right clicked *Review button* allows you to choose categories from which you wish to review scheduled items. You can select one category or any categories you want with *Control* key.
- *Input button*
 - Both, right and left clicked *Input button* allows you to add new questions to a category from your database or create new category for your new items.
- *New button*
 - Left clicked *New button* allows you to add items waiting in the queue to your learning process.
 - Right clicked *New button* allows you to add items to your learning process from the queue, but you're able to choose from which category or categories (selected with *Control* key) new items will come.
- *Force button*
 - Left clicked *Force button* allows you to start reviews even if they are not scheduled, here and now.
 - Right clicked *Force button* allows you to start reviews here and now, but from certain category or categories (selected with *Control* key).



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Tips & Tricks

→ **Work with FullRecall regularly**

Using FullRecall *every day* is best. It's better to spend every day 1 minute learning with FullRecall, than spending 7 minutes every 7 days. Also note that FullRecall schedules reviews with 1 day resolution, but learning regularly even without the software pays off!

→ **Don't be negligent during repetitions**

Even if you remember a fact well, spend at least a few seconds thinking about it (the best would be to use an association using imagination here — some [mnemonics](#)) before going to the next item.

→ **Don't give up**

After some time (like a month), you may have a *feeling* that you don't learn much and that it's extremely hard to learn anything with FullRecall — you have so many repetitions and serious problems with recollecting answers. Remember that FullRecall doesn't repeat you items you remember well, but only these hard to remember that you're close to forgetting! Keep in mind that in your learning process are, most likely, many elements that you do remember well — they are just not shown to you in order to not waste your time.

→ **Keep questions and answers as short and simple as possible**

Every time you repeat an item (and you'll have *many* repetitions) you'll have to read a question and an answer. The shorter the question and answer are, the less time you waste on the item. (Note that you should spend some time on every item, but ideally, spend most of the time *thinking* about the answer, that reinforces your remembering of this item).

→ **Don't add every information to FullRecall**

Not every information is worth keeping in your memory, even though you can retain it in your memory (with help of FullRecall) relatively cheaply. Some facts are better off on paper, on your notebook, palmtop, or remain accessible through google, than in your memory and FullRecall database. This is because there is a price to pay for keeping something in memory (time spent on reviews, even though they are scheduled on optimal days, and interference with other information) and for some facts (i.e., facts you won't use much in the future, if at all) it won't pay off. It's up to you to judge what is worth retaining in your memory. Your judgment and priorities may change in

the future—don't hesitate to delete from your database elements you think are no longer worth keeping in your memory.

On the other hand, bear in mind that keeping in memory facts you remembered a long time ago is now very cheap (in terms of time spent on necessary reviews); it's the first days, weeks and months of keeping an information in memory that you pay the highest price for. The longer you keep something in memory, the less price you pay for keeping it even longer (i.e., intervals between scheduled reviews start to be separated by order of years).

→ **Other tips**

- Click with the middle mouse button on question (or answer) field to turn on edit-mode.
- Clicking two times with left mouse button on a word selects the word; three times: selects a line.
- There is a context menu under right mouse button with some useful functions.
- You can use an [Unicode character picker \(like this one\)](#) to copy&paste Unicode characters into FullRecall (if you get a "square" in place of pasted character: make sure a question/answer font that is set in FullRecall Options cover the characters pasted, if not: set proper font (see 1st technical FAQ)
- If you want to go though scheduled reviews only in **some** categories, click "Review" with the *right* mouse button.

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Frequently Asked Questions

→ Is it really effective? How effective?

It is effective! Although it's difficult to make a reliable research to compare it with "common learning", once you know how it works (and know basics about human memory), it will be obvious for you that this is not a black magic — but **an optimization**, that just works.

However, don't expect FullRecall to be a panacea for learning troubles. Firstly, it helps only with **remembering** knowledge, not understanding it. Secondly, when you have a frequent contact with the material you learn (i.e., you have many natural repetitions beside these in FullRecall) then FullRecall won't help you **so** much with this material.

Last, but not least: FullRecall **optimizes your time spend on memorizing**, allows you to focus your effort in the right way, in the optimal time. But it's your effort that is the crucial factor influencing the learning rate — if you won't make the serious effort trying to really remember every item then FullRecall will slow down the learning rate for you trying to match your "lazy forgetting curve". On the other hand, if you'll commit yourself to learning and won't skim though reviews: you'll remember much more then you would remember in the same time, making the same effort, but learning without the software.

Technical questions and problems

→ I don't see properly some characters.

Please choose a font (menu *Options*→*Fonts*→*Questions/Answers fonts*) that covers the encoding you use. If another application correctly displays affected text: please try to find out what font the other application is using and set the same font in FullRecall. On MS Windows you'll find [Lucida Sans Unicode](#): it supports most commonly used characters and looks good; other universal fonts (not available by default on MS Windows) are: [Code2000](#) (shareware), [Cyberbit](#), Arial Unicode MS (supplied with MS Office 2002 (XP) and MS Office 2003). **See also:** [List of Unicode Fonts](#). In Windows you can drag&drop *.ttf fonts files into "Control Panel"→Fonts. In Unix/Linux since XFree86-4.3 you can just copy the *.ttf fonts to ~/.fonts/, and they should be visible in FullRecall (after FullRecall restart), in

Options→Preferences→Fonts.
→ Is it safe to copy FullRecall database from/to Windows version to/from Linux version or other operating systems?
Yes! Format of all files is fully compatible between Windows/Linux/FreeBSD/Pocket-PC versions.
→ When does the ANN get trained exactly?
During repetitions, in the background, using about 200 ms of CPU time just after an answer or question is presented. The faster your CPU is, the faster ANN can grip your memory model. But don't worry even if you use a very slow CPU — it still should work okay, as it's well optimized.
→ What are these files: <i>weights.bin</i>, <i>user_cases.bin</i>?
<i>weights.bin</i> contains internal ANN weights, so they don't have to be recomputed again from ANN learning data every time FullRecall starts <i>weights.bin</i> file is saved from scratch everytime FullRecall is closed <i>user_cases.bin</i> contains data collected from the user to train ANN
→ Is it possible to start FullRecall with a specific (other than recently used) database?
Yes, using -d parameter (and path after -d, with space between) from command line (example: fullrecall.exe -d c:\path-to-the-database\)
→ Exec tags don't work for me with a program placed in "<i>Program Files</i>".
The space between <i>Program</i> and <i>Files</i> is the problem. A way around it: add "C:\Program Files\The-Program" to the system path (right click on My computer→Properties→Advanced→Environment Variables→System variables, edit "Path" variable - add to it: ;C:\Program Files\The-Program. Now, provided 'exec tags' are turned on in FullRecall settings, this should work: <exec>the_program.exe c:\a_folder\image.jpg</exec>
→ I sometimes get a message "<i>This item is difficult and probably should be rewritten (Ctrl-E)</i>", what's wrong?
The warning says that the item have been repeated many times and interval is still low. In other words: the item is very difficult and you spend much time on it. Some items are just difficult and we can do nothing about it, so in

such cases it's safe to ignore the warning. But in most cases: we can reformulate question and answer to make answer easier to remember. Question should be specific; answer should be short, ideally just one word; question should never force to you to enumerate many items (such questions can be often split into more items, every item that demands short, specific answer); sometimes you can also add an image or sound, or even a more explicit hint for the difficult item. After any substantial changes to the item, please use "*Move to queue*" feature from "*Edit*" menu, so the item will be reintroduced to the learning process from the scratch (as it may have a different difficulty after the changes).

→ ***user_data.bin* file got a bit smaller, is this OK?**

Yes. An internal *user_cases.bin* file optimizer (which is called when FullRecall decides that the file needs optimization) optimizes the file structure (so FullRecall can start faster): merges data and throws away redundant data, which may result in a smaller file.

→ **How to do global search&replace?**

Close FullRecall, make a backup of database directory, open *elements.xml*, do a global search&replace in you editor of choice, save changed *elements.xml* and start FullRecall.

→ **What are the program limits (size of the database)?**

8 kB per one question, 8 kB per one answer, 128 B per category name. No limits whatsoever as to number of items in the database nor size of the database (though free version is limited to 500 elements per database). Network import/export has additional limits (4 MB per file or 2 MB per compressed file).

→ **Can I upgrade FullRecall? Will the new version read an old database?**

Yes. Newer versions are designed to read fully databases of older versions. Please, make a backup of your database before upgrading though, just in case.

→ **Is it possible to use FullRecall from USB based flash drive?**

Yes. Copy the executable and folder with the database along with its contents to the USB drive (a sub-directory is fine).
If you don't know where the folder with the database is: it's path is always

visible in FullRecall title bar.

You can create on the flash drive a batch file (example: "start.bat") that will start FullRecall from specific (relative) directory (using -d parameter), example: *fullrecall.exe -d fullrecalldb*

If you use images and/or sounds, try to keep them in a sub-directory of the database-directory if possible (also see the next FAQ entry).

→ **Is it possible to make FullRecall store relative (not absolute) paths for images and sounds?**

Yes, images and sounds stored inside the database directory (or its sub-directory) have paths automatically converted to relative. Example: if your database directory is "C:\fullrecalldb\" and you keep images in "C:\fullrecalldb\images\" and sounds in "C:\fullrecalldb\sounds\", the paths (to images and sounds) in FullRecall database will be stored as relative. Relative paths takes less space in the database and are portable from one computer to another.

→ **How to start FullRecall 1.2.x (or newer) on Windows 98/Me?**

FullRecall-1.2.x (or newer) on Windows 98/ME needs **unicows.dll** file from MSLU (Microsoft Layer for Unicode); you can [download MSLU here](#). After downloading unpack and place the **unicows.dll** file in "C:\Windows\System\" and FullRecall should be able to start now. (NOTE: it won't help with Windows 95 as it is not supported at all by FullRecall-1.2.x and newer versions).

→ **Is it possible to use find-feature with a wildcard (*)?**

Yes. In general FullRecall allows you to use *regular expressions*; regular expressions offer more than just the wildcard, but have rather beginner-unfriendly syntax. For the simple problem of the wildcard, you can use ".*" instead of "*" (example: ctrl+f, make sure "Use regular expressions" is turned on, in place of your "*" use ".*"). For more details (and the full syntax) about regular expressions, see [external sources](#).

→ **Is it possible to use own server (for network import/export)?**

No, but you achieve the same with a "start script" that would be called instead of real FullRecall binary: the start script can download your current database from your own server, the start FullRecall, and (after FullRecall quit) upload the database to your own server (by ftp, scp, or whatever protocol you like). Example:

```
#!/bin/bash
#script called before FullRecall start:
/home/dca/scripts/download-my-current-frdatabase.sh
```

```
#start FullRecall
/usr/bin/fullrecall-linux.bin
```

```
#upload the database to my server:
/home/dca/scripts/upload-my-current-frdatabase.sh
```

A similar solution with a .bat file for MS Windows is possible. The files that the "start script" needs to transfer are all files in a current FullRecall database (path to the current database directory is always visible in a title bar of running FullRecall). If you need/want to extract the current database directory in the upload/download scripts: Linux/FreeBSD versions: “*grep pathtodatadir ~/.foxrc/FullRecall*”, MS Windows version:

```
HKEY_CURRENT_USER/Software/FullRecall/SETTINGS/pathtodatadir
```

→ **How does FullRecall decide if an item is "difficult and perhaps should be rewritten"?**

By default, when item has been repeated at least 16 times (not counting any forced reviews or multiple reviews done on the same day) and interval-scheduled-by-ann is still below 16 days. The threshold is configurable.

→ **Does “forced review” skew ANN?**

No, it doesn't skew ANN in any way. Forced reviews are usually suboptimal investing of ones time (unless one wants to increase retention disregarding optimal time/results ratio, like right before an exam), but they are not bad in any way from ANN point of view (at the worst, ANN just doesn't learn anything from such review).

→ **How can I import data from Excel?**

FullRecall can import data from MS Excel (and possibly from other, non-Microsoft, spreadsheet applications) provided data is exported from Excel in tab-delimited format. So all you need to do is to pick (in Excel) "Save as..." from "File" menu and set "Save as type" option (at the bottom of "Save as" dialog) to "**Text, Tab delimited**".

Then, in FullRecall pick "Import Questions&Answers From A File To The Queue..." available under File→Import/Export menu and choose the file exported from Excel.

→ **How to keep images and sound files cross-platform?**

Please keep your images and sounds inside of FullRecall's learning database directory. If your learning database directory is "C:\frdb\", then keeping images (and sounds) in "C:\frdb\", or any subdirectory (like "C:\frdb\images\") will result in images (and sounds) stored in FullRecall database as relative paths that will be portable (see also FAQ question “**Is it possible to make FullRecall store relative (not absolute) paths for images and sounds?**” above).

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