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# Excalibur 2.2

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## 1 Introduction

**Excalibur** is a Macintosh spelling checker for plain text documents. It will spell check documents created by any text editor such as **BEdit**, **Alpha**, **Emacs** or **MPW**. It will also spell check the clipboard, making it a useful spelling checker for mail programs such as **Eudora** and news readers such as **NewsWatcher**.

**Excalibur** is also a very good **L<sup>A</sup>T<sub>E</sub>X** spelling checker. **L<sup>A</sup>T<sub>E</sub>X** is a collection of typesetting macros. If you're not a **L<sup>A</sup>T<sub>E</sub>X** user, you should turn off the option that makes **Excalibur** aware of **L<sup>A</sup>T<sub>E</sub>X**. See the explanation of the **Do L<sup>A</sup>T<sub>E</sub>X Command Parsing** option in section 5.6 on page 7 for more information.

**Excalibur** is a stand-alone spelling checker that you can use with many other applications. If you want to use it for spell checking the clipboard, it's probably best to turn on the **Open the clipboard** option. See section 5.9 on page 9 for more information.

## 2 Excalibur's L<sup>A</sup>T<sub>E</sub>X Philosophy

One approach to **L<sup>A</sup>T<sub>E</sub>X** spell checking is to put all the commands into the dictionary. This yields limited success because it does not specify what should be done with the arguments of the commands. For example, the `\label` command has an argument that should always be ignored. On the other hand, the `\section` command has an argument that should always be spell checked. To complicate things more, there are commands such as `\addtocontents` that have one argument that should be ignored, and another that should be spell checked.

**Excalibur** does *not* put **L<sup>A</sup>T<sub>E</sub>X** commands into its dictionary. Instead, it knows how to process each command intelligently. It knows which arguments to ignore and which it should spell check. As a result, **Excalibur** is a **L<sup>A</sup>T<sub>E</sub>X** spelling checker that does a very good job.

## 3 Excalibur Features

- **Excalibur** recognizes **L<sup>A</sup>T<sub>E</sub>X**, **A<sub>M</sub>S-L<sup>A</sup>T<sub>E</sub>X**, **S<sub>L</sub>T<sub>E</sub>X**, **psfig**, and **epic** commands. It also recognizes a fair number of plain **T<sub>E</sub>X** commands.
- You can teach **Excalibur** about new commands and environments that you define.
- **Excalibur** knows about accented characters and ligatures. This should help non English speaking users. They can add words with accents and ligatures to their dictionaries.
- **Excalibur** knows about discretionary hyphens. You can add words with discretionary hyphens to the dictionary too.
- **Excalibur** will optionally ignore text in the `\tt` font. This is very useful for people (like us) who are in computer science and often sprinkle their documents with file names in the typewriter font.

- **Excalibur** ignores everything that appears in the following environments:

– `math`, `displaymath`, `eqnarray`, `eqnarray*`, `subeqnarray`, `equation`, `verbatim`, `verbatim*`, `cprog`, and `alltt`.

**Excalibur** ignores the following  $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$  environments:

– `align`, `align*`, `alignat`, `alignat*`, `comment`, `equation*`, `gather`, `gather*`, `multline`, `multline*`, `xalignat`, `xalignat*`, `xxalignat`, and `xxalignat*`.

It also ignores everything that appears within

– `\[...\]`, `\(...\)`, `$....$`, `$$...$$` and `\begintt...\endtt`.

- **Excalibur** ignores the arguments of `\verb` and `\verb*` commands.
- **Excalibur** is 32-bit clean and System 7 friendly.
- **Excalibur** will warn you if it thinks it found a  $\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$  syntax error in a file. This usually means that you have unmatched braces, unmatched `\begin...``\end` pairs, or an unmatched math mode delimiter.
- **Excalibur** will spell check the contents of the clipboard. You can copy text to the clipboard, have **Excalibur** check it, and then write the results back onto the clipboard. With this feature you can use **Excalibur** as a spelling checker for programs such as Eudora.

## 4 Program Components

### 4.1 The File Menu

Most of the items in the **File** menu are standard for a Macintosh application. This menu contains items to open a file, close a file, save the changes to a file, reverting a file, and quitting the program. If you have started to spell check a file and you suddenly remember that you forgot to activate a dictionary, you can use **Revert** to put the spell checking operation in its initial state. Then, activate your dictionary and hit **Start**.

The **Open Clipboard** and **Save To Clipboard** items will let you spell check the clipboard and then save the results back to the clipboard again. This is useful if you want to spell check just a small portion of a document. You can copy the text to the clipboard, check its spelling, save the result back to the clipboard, and then paste the result back into your document.

### 4.2 The Dictionary Menu

The **Dictionary** menu lets you create new dictionaries and add words to existing dictionaries. It also lets you select the dictionaries that you would like to use for spell checking.

### 4.2.1 Create Dictionary

**Excalibur** comes with a Standard Dictionary of about 47,000 English words. If you would like to create your own dictionary so you can add words that aren't in the Standard Dictionary, use the **Create Dictionary** item in the **Dictionary** menu. You can save the dictionary any place you like, but **Excalibur** looks first in its own folder for dictionaries. If it doesn't find any dictionaries there, you will have to tell it where to find them. It's probably easiest to save your dictionaries in the **Excalibur** folder.

### 4.2.2 Save Dictionaries

The **Save Dictionaries** menu item will save any dictionaries that have changed since you started **Excalibur**. If you forget to invoke the **Save Dictionaries** command, **Excalibur** will warn you when you try to quit.

### 4.2.3 Add Word...

You can use this to add a word to a dictionary when you are not spell checking a document. You must have a user defined *active dictionary* for this item to be enabled. See section 4.4 (page 5) for more information on active dictionaries.

This dialog will let you add a word if it is not already present in another dictionary. If the word is already present, **Excalibur** quietly does nothing when you hit the **Add** button. If you would like to add a word to a selected dictionary even if it is already present in another dictionary, hold down the option key when you click on the **Add** button.

### 4.2.4 Conversions

Using the **Conversions** menu you can convert a dictionary to a text file so you can edit it. This is useful if you want to remove or add words. You can also convert a text file to a dictionary. The words do not have to be sorted.

When you convert a dictionary to a text file, **Excalibur** gives you the option of setting the file creator for the resulting text file. You can choose MS Word, Alpha, or a generic text file.

**Excalibur** is capable of keeping track of up to 7 dictionaries at a time. If you have 7 dictionaries in the **Dictionary** menu and you try to convert a dictionary that is not already there, **Excalibur** will display an error saying that the dictionary list is full. You can correct the problem by quitting **Excalibur** and removing at least one dictionary from the **Excalibur** folder.

When you convert a text file to a dictionary, **Excalibur** gives you the option of saving the file as *read only*. If you choose this option, you will not be able to add words to the dictionary from within **Excalibur**. It's a good idea to keep the Standard Dictionary read only.

**Excalibur** will recognize accents and ligatures if the **Do L<sup>A</sup>T<sub>E</sub>X Command Parsing** option is checked. If you don't have any accents or ligatures, you can uncheck this option and the conversion will be a little faster.

**Excalibur** also looks at the **Word Boundaries** options when doing a text to dictionary conversion. So, if you have **Regard 's as end of word** selected, **Excalibur** will not add any words ending in 's to your dictionary.

If you want to add a few words to a larger dictionary, first convert the larger dictionary to a text file. Then, copy the words you want to add onto the end of the file. Finally, convert the file back into a dictionary. We expect that this will be the most common use of conversions, so we have tuned the text to dictionary conversion so that it performs best under these circumstances. If you have a completely unsorted list of words that you would like to convert to a dictionary, the conversion may be lengthy. Sorting the words first will speed things up greatly. Convert your word list to lower case before doing the sort.

If you are using System 7 or higher **Excalibur** will use temporary memory (if necessary) when doing conversions. If your machine has a lot of free memory, it will grab as much as it needs to complete the conversion. It releases this memory when it is finished.

If you are using System 6, you may have to increase **Excalibur**'s memory partition to convert a large file. Section 7 (page 10) explains how to do this.

You can use **Excalibur**'s conversions to produce a sorted list of words that appear in a document. First, perform a text to dictionary conversion using a text document as input. Then, convert your new dictionary to a text document. The result will be a sorted list of all the words that appear in your document. Since the words in the original file are unsorted, this operation can be slow if the original document is large.

**Technical Note:** Text to dictionary conversions can be very slow if the text file is not sorted. **Excalibur** is in the sort phase when the progress indicator is between 50% and 75%. If you sorted your text file before initiating a text to dictionary conversion, and **Excalibur** is still very slow when the progress indicator is in this area, you may need to change the way you do the sort.

First, be sure that all the words are in lower case letters before doing the sort. This will have an effect on the sort.

Second, not all machines treat the characters in Apple's extended character set in the same way. If you sort your file on a Unix workstation, check to see where the words that begin with an accented character appear. If these words appear at the end of the file after a sort, then everything is fine. If they all appear at the top of the file, then there's a problem. Your machine is treating these characters as signed characters. Since they have their high order bit set, they have the smallest keys. This is not the same ordering that the Macintosh uses. See if your sort routine has a switch that lets you treat all characters as unsigned. If you're desperate, send some mail to [zaccone@bucknell.edu](mailto:zaccone@bucknell.edu). I've put together a quick and dirty sort routine that works properly on a Unix workstation. You will need an ANSI C compiler to compile it. (I use `gcc`.) A sorted file should take at most several minutes to convert to a dictionary. An unsorted file may take several hours.

#### 4.2.5 The Dictionary List

The bottom portion of the Dictionary menu contains a list of your dictionaries. **Excalibur** uses the checked dictionaries in its spell checking operation. You can check and uncheck dictionaries before you begin the spell check operation. Once you have begun, you can't change them. You *can* change dictionaries *between* spell checking operations. Any dictionary that is checked is an *active dictionary*. See section 4.4 on page 5 for more information on active dictionaries.

If a dictionary name appears in plain text, it is modifiable. That is, you can add words to it. If the name appears in italics, the dictionary is read only.

### 4.3 Definitions Menu

You can teach **Excalibur** about new L<sup>A</sup>T<sub>E</sub>X commands and environments that you have defined with the **Definitions** menu.

If you define a new command with either `\newcommand` or `\renewcommand`, you can tell **Excalibur** about it by selecting the **Edit Commands...** item. Enter the name of your command in the text box, select the number of arguments with the pop-up menu, and hit the **Add** button. You can add any number of commands to the list. Each command in the list is followed by the number of arguments that **Excalibur** should ignore. Thus, if you define a command that has three arguments and you would like **Excalibur** to spell check the third argument, tell **Excalibur** to ignore two arguments.

You can tell **Excalibur** about new environments in a similar fashion. Use the **Edit Environments...** menu item. It performs exactly the same as the **Edit Commands...** item.

You cannot specify the number of arguments for an environment since **Excalibur** doesn't need to know this number. If you add an environment called `foo`, **Excalibur** will ignore everything between `\begin{foo}` and `\end{foo}`. Thus, the number of arguments is irrelevant.

Use the **Save Definitions...** command to save the commands and environments that you have defined to a file. You can read a file that contains command and environment definitions with the **Read Definitions...** command.

The **Clear Definitions** command will cause **Excalibur** to forget about the currently defined definitions.

**Excalibur** checks the list of user defined commands and environments before checking to see if a command or environment is part of standard L<sup>A</sup>T<sub>E</sub>X. Thus, if you change the definition of a standard L<sup>A</sup>T<sub>E</sub>X command with `\renewcommand`, **Excalibur** will not get confused.

### 4.4 Active Dictionaries

Throughout this manual, we will refer to any dictionary that is checked in the **Dictionary** menu as an *active dictionary*. You can add or remove a check mark by selecting that menu item. **Excalibur** uses the active dictionaries when spell checking.



**Note:** In order for the **Add...** button to be operational, you must have at least one modifiable dictionary that is active. A dictionary is not modifiable if its name appears in italics in the **Dictionary** menu. A dictionary is active if it is checked.

## 4.5 The Document Window

The top portion of **Excalibur**'s display is the document window. **Excalibur** will show you the context for your misspelled words here.

## 4.6 The Control Dialog

Most of your interaction with **Excalibur** will be through the control dialog. It contains buttons for starting the spell check operation and for making corrections to words. You must open a document using **Open...** in the **File** menu for the control dialog to appear.

# 5 Program Operation

## 5.1 Getting Started

To begin spell checking, hit the **Start** button.

**Excalibur** will display incorrect words in the **Unknown Word** field. This means that it wasn't able to find the word in any active dictionary. See **Active Dictionaries** (section 4.4 on page 5) for more information on active dictionaries.

## 5.2 How To Make a Spelling Correction

You enter spelling corrections through the **Change To:** box. You can get text into this box in several ways.

1. Simply enter the correct word.
2. Hit the **Change** button. This will copy the incorrect word to the **Change To:** box. You can then edit the word.
3. Ask **Excalibur** to suggest a correction by hitting the **Suggest** button. If you see the correct spelling in the list of words that **Excalibur** presents, double click on it. This will copy the correct word into the **Change To:** box.

To complete the change operation, hit the **Change** button.

**Helpful hint:** If the **Change To:** box is empty, then **Excalibur** uses the flagged word to create its suggestion list. If the **Change To:** box has text in it, **Excalibur** uses that text as a basis for its suggestion list. So, if **Excalibur** doesn't give you a suggestion that you like, hit the **Change** button to copy the flagged word into the **Change To:** box. Then change its spelling slightly and hit **Suggest** again.

### 5.3 Ignoring a Word

If you would like to ignore what **Excalibur** thinks is a misspelled word, hit the **Ignore** button. **Excalibur** will ignore any subsequent occurrence of this word also. You can change this behavior in the **Options** menu.

### 5.4 Adding Words to a Dictionary

**Excalibur** flags any word that is not in an active dictionary. To add the flagged word to an active dictionary, hit the **Add...** button. You can add the word to any active dictionary that is modifiable. The Standard Dictionary is read only.

Use the checkbox to always select the same dictionary for the word you are spell checking. When you do this, **Excalibur** will stop presenting the **Add** dialog every time you add a word. If you have checked this box, you can force **Excalibur** to bring up the dialog by holding the shift key down while you click on **Add**. This allows you to deselect the checkbox or select a new set of dictionaries to automatically select from then on.

After adding a word to a dictionary, you will still have to take an action on the current word. It will often be the case that you would like to simply ignore the word now that you have entered it into a dictionary. You can use the **Options** menu to make this the default action.

**Note:** In order for the **Add...** button to be operational, you must have at least one modifiable dictionary that is active. A dictionary is not modifiable if its name appears in italics in the **Dictionary** menu. A dictionary is active if it is checked.

### 5.5 Quitting Excalibur

To quit **Excalibur**, select **Quit** from the **File** menu. If you forgot to save your corrections, **Excalibur** will warn you. **Excalibur** will also warn you if you forgot to save any changes to your dictionaries or if you have not saved any changes to your definitions.

### 5.6 Spell Checking Options

**Ignore All CAPS** instructs **Excalibur** to ignore words that do not contain any lower case letters.

If you hit the **Ignore** button and the **Ignore Throughout** option is checked, **Excalibur** will ignore any subsequent occurrences of the word.

If you change a word and the **Replace Throughout** option is checked, **Excalibur** will replace all subsequent occurrences of the word also. Note that you have to finish spell checking the document for this to happen. If you stop spell checking a document before reaching the end, **Excalibur** may not replace all occurrences of the word even though you have checked this option.

If you select the **Auto Suggest** option, **Excalibur** will automatically make suggestions when it shows you a misspelled word.

If **Do L<sup>A</sup>T<sub>E</sub>X Command Parsing** is checked, **Excalibur** assumes that the file you are processing contains T<sub>E</sub>X/L<sup>A</sup>T<sub>E</sub>X commands.

**Ignore \tt Text** instructs **Excalibur** to not spell check words that are in the typewriter font.

**Warn on parsing errors** causes **Excalibur** to warn you if it thinks it found a L<sup>A</sup>T<sub>E</sub>X syntax error.

## 5.7 Dialog Behavior Options

If you attempt to replace a misspelled word with a word that is not in any active dictionary, you may have **Excalibur** take one of three actions.

1. Quietly let you replace the word.
2. Beep, then let you replace the word.
3. Put up a dialog that warns you that the word is not in any active dictionary, then let you replace the word. This is the default.

These last two actions are useful because they give you the opportunity to enter the replacement word into a dictionary before continuing.

### 5.7.1 Press Ignore button automatically if user adds flagged word to a dictionary

If you have just added a word to the dictionary, you will often want to press **Ignore** to indicate that you are finished with the word. This option causes this to happen automatically. You will immediately advance to the next misspelled word when this option is checked. If you find that you often want to enter several words at once to the dictionary (for example, the same word with several different endings), then you may wish to uncheck this option.

### 5.7.2 Press Change button automatically if user adds replacement word to a dictionary

If you have just added a replacement word to the dictionary, you will often want to press **Change** to make the change and advance you to the next word. This option causes this to happen automatically. If you find that you often want to enter several words at once to the dictionary (for example, the same word with several different endings), then you may wish to uncheck this option.

### 5.7.3 Save Dictionaries without prompting

If you have made changes to user defined dictionaries and you quit **Excalibur**, it will automatically save your dictionaries for you if this option is set. If this option is not set, **Excalibur** will warn you before quitting.

## 5.8 Word Boundary Options

The **Use german.sty conventions** option tells **Excalibur** that you are using " when typing an umlaut. For example, this tells **Excalibur** that "u is the same as \u. When you turn on this option **Excalibur** will also know about the German double quotes " and " , the French double quotes "< and ">, the hyphens "-", "", and "=", and the ß (es-zet) \3. This option is not available if you do not have L<sup>A</sup>T<sub>E</sub>X command parsing turned on.

The **Single quote marks end of word** option tells **Excalibur** that a single quote will never be part of a word. This is probably not useful for English speaking users since this causes **Excalibur** to no longer recognize contractions. It may be useful in French though. If the word “application” is in the dictionary, then **Excalibur** won’t flag “l’application.” Even if this option is checked, **Excalibur** will still recognize the \’ accent.

The **Regard ’s as end of word** option tells **Excalibur** to stop parsing a word when it reaches ’s. Thus, if the word “Knuth” is in your dictionary, **Excalibur** won’t flag “Knuth’s”. This option is probably most useful to English speaking users. This option is not available if **Single quote marks end of word** is checked.

## 5.9 Start-Up Actions

The **Present an open file dialog** option tells **Excalibur** to present a standard open file dialog when the program starts.

The **Open the clipboard** option tells **Excalibur** to open the clipboard when the program starts. This will only happen if the clipboard contains text. This option also causes **Excalibur** to automatically open the clipboard whenever you bring **Excalibur** into the foreground. If you keep **Excalibur** running so that you can periodically spell check the contents of the clipboard, this will make this operation faster.

The **Do nothing** option causes **Excalibur** to do neither of the above actions when you start the program.

## 5.10 Saving Preferences

You can save your current preferences by selecting **Preferences...** in the **Options** menu. You can ask **Excalibur** to remember the dictionaries and definitions that you are currently using. You can also ask it to remember your spell-checking, dialog behavior, and word boundary options.

## 6 Known Problems

When you correct a word, **Excalibur** does not update the screen to reflect the correction. However, the change *does* take place.

## 7 Large Documents

The size of a document is limited only by the amount of memory on your machine. If you are using System 7 or higher, **Excalibur** will use any free memory on your machine to load large documents or to perform dictionary conversions. Quitting other applications will make more memory available to **Excalibur**. Under System 6 you may need to increase **Excalibur**'s memory partition.

Under System 6, here is what to do if **Excalibur** complains about not having enough memory to open a document or to perform a dictionary conversion. Quit **Excalibur** and highlight its icon on the desktop. Select **Get Info** from the **File** menu. Make the **current size** of **Excalibur** larger.

## 8 Common Problems with Excalibur

We have tested **Excalibur** on a large number of files, and it works quite well. However, here are some things to consider if **Excalibur** does not seem to be doing its job.

If there is a  $\text{T}_{\text{E}}\text{X}$  and  $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$  way of doing things, **Excalibur** usually handles the  $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$  method better. For example, use `\input{file}` instead of `\input file`.

- Use the `\symbol{}` command instead of `\char`. For example, you should use `\symbol{'134}` instead of `\char'134` to produce a backslash.
- Use the `\setlength{ }{ }` command change the length of something. For example, you should use `\setlength{\textwidth}{6.5in}` instead of `\textwidth=6.5in`.
- Use `\newcommand` or `\renewcommand` instead of `\def` to define a command.
- Be careful when using `\renewcommand`. **Excalibur** doesn't look at the new definition of a command. If you define it to have a different number of arguments than the original command, **Excalibur** will get confused. Tell **Excalibur** about the new form of the command by using the **Definitions** menu. See section 4.3 on page 5.
- **Excalibur** knows a fair amount about  $\text{T}_{\text{E}}\text{X}$ / $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$  syntax. If it looks like it's skipping large portions of a file, it's probably because of an unmatched brace or some other syntax error. It's best to run it on a syntactically correct file. It will warn you if it thinks it found a syntax error.
- The commands `\=`, `\'`, and `\`` usually produce accents. However, they are redefined in a tabbing environment. To make sure that **Excalibur** interprets them properly in a tabbing environment, precede (unless at the beginning of a line) and follow them by a space. **Excalibur** knows about the special `\a` accent in the tabbing environment.

- For any environment that **Excalibur** ignores, there should be no spaces between the `\end` and the left curly brace. For example, `\end {verbatim}` will confuse **Excalibur**.
- If you use `\equation ... \endequation` to delimit the bounds of an equation, **Excalibur** won't ignore it. You should use `\begin{equation} ... \end{equation}` instead.
- $\text{\LaTeX}$  will accept the command `\newcommand\gn{\Gamma_i}` despite the fact that the manual says to use `\newcommand{\gn}{\Gamma_i}`. That is,  $\text{\LaTeX}$  doesn't insist on the first set of braces. **Excalibur** expects to see both sets of braces. It will get confused if they are not present. We tried to follow the manual as much as possible.
- A word may not begin with a left curly brace, but it may contain embedded curly braces. For example, **Excalibur** will recognize the word "naïve" when it is written as `na\{"i}ve`, `na\{i}ve`, or `na\{i ve` but not `{na\{i}ve`, even though this last form is syntactically correct. Of course you will need to put these in your dictionary if you would like **Excalibur** not to flag them as spelling errors. Note that a space may be part of a word.
- We tried to make **Excalibur** intelligent when it suggests words with accents. If you are using Apple's extended character set, it doesn't have any problems. If you are using control sequences to produce accents, this presents a challenge to **Excalibur**. As we have indicated, there are often many different ways to type a word such as "naïve". **Excalibur** can't check all the possibilities when looking for a word in the dictionary. Consequently, it makes some assumptions about how you type accents. It expects that you will type á as `\'a`, í as `\'i`, and ç as `\c{c}`. In general, it assumes that you will use curly braces only if the accented character would introduce a space when used in the middle of a word.
- A declaration such as `\def|\verb|}` will allow you to write `|\rule|` as a shorthand for `\verb|\rule|`. However, this will completely confuse **Excalibur**. It will start looking for the arguments to `\rule` and report a syntax error.
- $\text{\LaTeX} 2_{\epsilon}$  defines the command `\texttt` for specifying text in the typewriter font. The option to ignore `\tt` text does not have any effect on this command. If you want **Excalibur** to ignore the argument of `\texttt`, use the **Edit Commands** dialog.
- **Excalibur** has a new color icon. If you have been using version 1.0 of **Excalibur**, rebuild the desktop after copying this new version onto your machine. (Restart the computer and hold down the command and option keys.)

## 9 Excalibur Genealogy

**Excalibur** has its roots in a software engineering course at Bucknell University in the spring semester of 1990. Rob Gottshall and Rick Zaccone produced the current version using the original application as a base.

### 9.1 Version 2.2, January 25, 1996

- Got rid of some of **Excalibur**'s alerts. The program operation is much smoother. **Excalibur** displays the current state of the program rather than announce it with alerts.
- **Excalibur** no longer beeps when it can't find a suggestion. Instead, it puts a message into the suggestion box. It's much less annoying now, and it's fast enough on the power Mac that you may want to leave the **Auto Suggest** option checked.
- **Excalibur** will now open aliases to dictionaries. For example, suppose there's a dictionary on a server that you would like to use every time you launch **Excalibur**. Put an alias to that dictionary in the **Excalibur** folder and it will open it when you launch the program.
- If a document is already open, you can replace it with another as long as a spell check operation is not in progress.
- **Excalibur** now has a Spanish dictionary. See section 12 on page 20 for information on where to find it and other dictionaries.
- **Excalibur** remembers the folder of the last file you opened.
- **Excalibur** continues to look for dictionaries after finding an old style dictionary.
- Fixed a dictionary conversion bug that caused **Excalibur** to think it was out of memory when it really wasn't.
- Revised **Excalibur**'s balloon help.
- Dialogs draw faster on a PowerPC.
- Numbers now have a thousands separator.
- Fixed a problem with hitting the **Restart** button when the document is a clipboard snapshot.
- Updated the **BEdit** icon so that it is in step with the **BEdit** 3.5 icon.
- Fixed a bug that caused **Excalibur** to not properly remember your preferences for commands.
- Fixed a menu update problem.

- Made e-mail address in About Box easier to read.
- There are many other minor changes.

## 9.2 Version 2.1, March 28, 1995

- **Excalibur** now has a new look!
- There are better error message when **Excalibur** detects a syntax error.
- There are better error messages when doing conversions.
- When doing a dictionary to text conversion you can select the text file type from a pop-up menu.
- Double clicking on a misspelled word copies it into the **Change To: box**.
- If you have just one modifiable dictionary, **Excalibur** doesn't ask you which dictionary to add a word.
- **Excalibur** requires System 6.0.5 or greater.
- **Excalibur** now observes the **Ignore all CAPS** option when converting from text to dictionary.
- Fixed a bug that caused **Excalibur** to sometimes suggest the same word more than once.
- Added support for the **german.sty** sequences "l" (separate ligatures) and "~" (unbreakable hyphen).
- The About box animation works at the same rate regardless of the CPU speed.
- There are various other adjustments and bug fixes.

## 9.3 Version 2.0.1, January 12, 1995

- A word is considered to be all caps if it doesn't contain any lower case letters. Thus, "FRED'S" is now all caps as is "68K". Previously, all characters had to be upper case letters.
- **Excalibur** sometimes thought that definitions were dirty when they were not. This no longer happens.
- Fixed some minor problems with dictionary names in the **Dictionary** menu.
- Better handling of dictionaries and memory. Unchecking a dictionary purges it from memory.
- The Edit Commands and Edit Environments dialogs are now in color.



- It's now legal to create a command with zero arguments. This is useful if you want to override a built-in command to have zero arguments.
- Fixed a problem that caused **Excalibur** to sometimes not find dictionaries at start-up.
- Various other minor fixes.

## 9.4 Version 2.0, July 6, 1994

- **Excalibur** now runs in native mode on a PowerPC.
- **Excalibur** uses a new dictionary format that greatly speeds up operations in languages other than English.

You will need to convert any dictionaries you created with a previous version of **Excalibur** to this new format. Here's the procedure for doing that. (The dictionary we are distributing with **Excalibur** 2.0 is a new version of the Standard Dictionary.)

Use your current version of **Excalibur** (1.x) convert your dictionary to a text file. Then use **Excalibur** 2.0 to convert that text file back into a dictionary. Don't forget to pay attention to your option settings when creating a new dictionary. For example, if you set the option to treat 's as the end of a word, no words with 's will appear in your dictionary.

**Excalibur** 2.0 is smart enough to display an error message if you try to open an old style dictionary. Old versions of **Excalibur** may crash if you try to open a new style dictionary.

- **Excalibur** uses temporary memory to open large files and when doing text to dictionary and dictionary to text conversions. This means that if there is enough memory on your machine, you won't have to increase **Excalibur**'s partition size to open a large file or to do a conversion.
- **Excalibur** has a vastly improved memory management scheme. It should always recover gracefully from a low memory situation.
- Text to dictionary conversions use much less memory. Fixed a few bugs associated with conversions.
- Hitting the Enter key selects the default item in the control dialog.
- **Excalibur** knows about the  $\text{SLI}\text{T}_{\text{E}}\text{X}$  and `seminar.sty` versions of the slide environment.
- **Excalibur**'s interaction with Alpha is smoother. If you select Spellcheck Window in Alpha and **Excalibur** already has a window open, it will close it and spellcheck the new document. It does this more smoothly now.

- **Excalibur** uses intelligent suggestions for the new file names when doing conversions. You can customize the strings that **Excalibur** uses for extensions by changing resource **STR# 306**.
- The behavior of the **Add Word...** menu item has changed slightly. Now it adds a word only if it doesn't appear in any other active dictionary. If you would like to add a word to a dictionary even if it appears in another dictionary, hold down the option key when you click on the Add button.
- Various smaller changes.

### 9.5 Version 1.5.1, April 10, 1994

- Fixed some clipboard problems that surfaced when running System 6.
- Saving now works properly on EasyServer and CAP (Columbia AppleTalk Package) volumes. It now works under A/UX 3.0 too. (Thanks to Stuart Castergine for helping me fix this.)
- **Excalibur** knows about new  $\text{\LaTeX 2}_{\epsilon}$  commands.
- Put up an alert if the preferences file is out of date.
- The updating of statistics while spell checking is now flicker free.
- The buttons in the control dialog are handled a bit more intelligently. If the text in the **Change To:** box and the flagged word are the same, then the **Change** button is inactive. If there is no text in the **Change To:** box, then the **Ignore** button is the default.
- A '@' can now be part of a user defined command or environment name.
- Fine tuned memory management somewhat.
- Fixed a rare bug that would cause **Excalibur** to be unable to find dictionaries.

### 9.6 Version 1.5, January 14, 1994

- Added options that let the user choose how **Excalibur** should behave when you launch it. You may choose to present an "open file" dialog, open the clipboard if it has text, or do nothing. When the clipboard option is checked, **Excalibur** will also open the clipboard when it receives a resume event (if it contains text).
- Adjusted a few of the dialogs so that they all appear and behave consistently. Hitting Return or Enter is the same as clicking the default button. Command period is the same as cancel.
- Made some changes so that **Excalibur**'s interactions with Alpha are smoother.

- Fixed the **Edit Commands** dialog so that it is a bit more intuitive.
- Fixed the **Edit Environments** dialog so that you no longer enter the number of arguments. **Excalibur** never used these values anyway.
- You can now drag **Excalibur**'s windows to another monitor.
- Fixed a few minor bugs.

## 9.7 Version 1.4.2, August 11, 1993

Fixed a bug that caused all the buttons in the control dialog to be inactive during the correction phase. This happened on 68000 based machines.

## 9.8 Version 1.4.1, August 4, 1993

- Repaired several minor bugs including better error handling under low memory conditions.
- You can now convert larger text files into dictionaries. If you create a really large dictionary you may not be able to read it with an older version of **Excalibur**.
- **Excalibur** knows about the conventions in **german.sty**. If you turn on the option to treat " as if it were \", **Excalibur** will also know about the hyphens and quotes defined in **german.sty**.

## 9.9 Version 1.4, July 11, 1993

- You may now spell check the contents of the clipboard. You may save the results back to the clipboard too.
- You may now teach **Excalibur** about new commands and environments that you have defined.
- Fixed some update problems that occurred when balloon help was on.
- Fixed a problem with the **Save As...** command.
- Fixed a problem that caused a flagged word to not appear on the screen. This occurred very rarely.
- **Excalibur** now handles the `\cite` command properly.
- Fixed an obscure bug in the **Add Words...** dialog.
- Added an option that tells **Excalibur** to treat " as if it were \". If you type ü as "u instead of \"u, **Excalibur** will be happy. Many German speaking users requested this change.

- There is an option that will cause **Excalibur** to always have a single quote mark the end of a word. This is not good for English speaking users since **Excalibur** will not recognize contractions when this is on. However, many French speaking users requested this.
- When the **Use selection from now on** box is checked in the **Add...** dialog, the ellipses no longer appear in the **Add** button. This gives you a visual indication that this box is checked.
- If you have an older version of **Excalibur**, you will need to rebuild your desktop in order to see the new icon for definition files.

### 9.10 Version 1.3.3, May 1, 1993

- Version 1.3.3 has a better algorithm for suggesting words with accents. Section 8 explains some problems we had implementing this.
- Added processing for `\epsfbox` command.
- Most text that appears in dialog boxes is now in string resources. This should make it easier to localize **Excalibur**.
- Some **Excalibur** users have been kind enough to contribute additional dictionaries. There are British, Dutch, French, German, and Italian dictionaries in the directory

`/pub/mac/Excalibur-dictionaries`

on

`sol.eg.bucknell.edu`

We will gladly accept any other non-copyrighted dictionaries that users are willing to contribute.

- We also eliminated the help facility in this version. The balloon help makes it unnecessary.

### 9.11 Version 1.3.2, April 10, 1993

- **Excalibur** now has balloon help.
- You may now optionally ignore 's at the end of words.
- There is an option to automatically suggest a correction to a misspelled word.
- The error correction phase of **Excalibur** is now faster. Under certain rare circumstances, the error correction phase would slow down. This no longer happens.

- In preparation for some future additions to **Excalibur**, we have rewritten much of the display code. A few things look different, but there are a lot of changes under the hood.
- Fixed some problems with the Standard Dictionary.
- Numerous minor fixes and adjustments.

### 9.12 Version 1.3.1, February 7, 1993

This version corrects a bug in the  $\text{\LaTeX}$  parsing, and it correct several minor display problems.

### 9.13 Version 1.3, January 10, 1993

- **Excalibur** handles disk insert events. If you insert an uninitialized disk while **Excalibur** is running, it will ask you if you want to initialize it.
- **Excalibur** now recognizes the `\lefteqn` command.
- **Excalibur** positions alerts and dialogs according to the Human Interface Guidelines.
- **Excalibur** saves both the resource and data forks of a file. Previously, it didn't save the resource fork under System 7.
- **Excalibur** looks at the “Do LaTeX Parsing” option when doing text to dictionary conversions. If this option is checked, **Excalibur** will recognize  $\text{\TeX}$  accents and ligatures in words.
- Text to Dictionary conversions are faster. They also require somewhat more memory.
- **Excalibur** correctly updates the document window.
- Drag and Drop should work better.
- Numerous bug fixes.

### 9.14 Version 1.2

We produced version 1.2 in September 1992. Here are the features and bug fixes we added.

- Fixed problem with recognizing the `tabular*` environment.
- **Excalibur** is now System 7 friendly. It handles the required Apple events. (It handles the Print event, although it doesn't do anything.) As a result, it handles drag and drop operations properly. You may drag just one file at a time.

- **Excalibur** now uses a “safe save” technique for saving files if you are running System 7. That is, it saves the file into a temporary file. Once the save has successfully completed, **Excalibur** moves the file onto the original. This may make a difference if you are saving onto a floppy disk. Make sure there is enough room for two copies of the file.
- **Excalibur** now requires System 6.0.4 or higher.
- **Excalibur** recognizes the Apple extended character set.
- Fixed a display bug in the “About the Authors” dialog.
- **Excalibur** now recognizes  $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\text{\LaTeX}$  environments. In particular, it now knows about the environments `align`, `align*`, `alignat`, `alignat*`, `comment`, `equation*`, `gather`, `gather*`, `multline`, `multline*`, `xalignat`, `xalignat*`, `xxalignat`, and `xxalignat*`.
- It knows the  $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\text{\LaTeX}$  commands `accentedsymbol`, `addtoversion`, `email`, `eqref`, `family`, `newmathalphabet`, `numberwithin`, `operatorname`, `operatornamewithlimits`, `series`, `shape`, and `theoremstyle`.
- If **Excalibur** gets an error while trying to save a file, it tries to print a meaningful error message. If it gets an error for which it doesn’t have a message, it prints the error number.
- Added Preferences File that saves spell-checking and dialog options as well as the names of active dictionaries.
- Changed Help dialog button from OK to Done.
- Added Text to Dictionary and Dictionary to text file conversions. Text files can be saved as MS Word, Alpha, or generic text files. Alpha contains some nice support for  $\text{\LaTeX}$ . It’s well worth the shareware fee.

### 9.15 Version 1.1

Version 1.1 was produced in February 1992. We have rewritten substantial portions of version 1.0.

Some new features include:

- User defined dictionaries now work.
- Many improvements to the user interface.
- $\text{\LaTeX}$ / $\text{\TeX}$  command recognizer completely rewritten.  $\text{\LaTeX}$  command recognition is now excellent. Plain  $\text{\TeX}$  command recognition is good. The syntax of plain  $\text{\TeX}$  is difficult to parse. We are not sure how much the plain  $\text{\TeX}$  recognition will improve in the future, but please send us information about any problems you have.

- **Excalibur** knows about accented characters and ligatures.
- **Excalibur** will optionally ignore text in the `\tt` font.
- **Excalibur** will now warn you if it thinks it found a  $\text{\LaTeX}$  syntax error in a file.
- **Excalibur** is considerably faster than version 1.0.

## 9.16 Version 1.0

Version 1.0 was produced in May 1990.

## 10 Plans for the Future

We will fix any bugs that people find. Please use the information in section 11 to send us bug reports.

We welcome suggestions on how to improve **Excalibur**.

## 11 Suggestions and Bug Reports

We are very interested in maintaining and improving this program. If you have a bug report and your bug is not easy to reproduce, try to send us a small file that readily reproduces the problem. Be sure to mention which version of **Excalibur** you are using.

Send comments, suggestions, and bug reports to:

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## 12 Other Dictionaries

You may `ftp` the latest version of **Excalibur** from `sol.eg.bucknell.edu` (134.82.1.8) in the directory `pub/mac`. You will also find dictionaries for British, Dutch, French, Italian and Spanish in the subdirectory

`Excalibur-dictionaries`

## 13 Acknowledgments

We produced **Excalibur** using Metrowerks CodeWarrior.

We wish to acknowledge the efforts of Matt Biar for Version 1.0 L<sup>A</sup>T<sub>E</sub>X parsing and significant contributions to the design of **Excalibur**. We also thank Mohamad Daimon for great user interface ideas, knick-knacks, and hours of tedious testing.

We also acknowledge the rest of the original **Excalibur** team: Nancy Dodge (documentation), Dan Jamieson , John Meehan, James Mitchell, Frank Lijoi, and Joe Lijoi.

## 14 Excalibur Legend

Excalibur is King Arthur's great sword. It sometimes gives off light and occasionally is wielded by Gawain. Excalibur is given to Arthur, and finally taken from him, by a hand in the lake. Merlin, who brings Arthur to the Lady of the Lake to receive Excalibur, informs the King that the scabbard is worth far more than the sword itself, for the former will protect its bearer from injury. Despite this fact, it is the sword rather than its scabbard that has captured the imagination of later writers and readers.

## 15 Legal Fine Print

**Excalibur** is free. However it is not public domain and we retain the copyright. You may not charge to redistribute this program except for normal download fees. You may not distribute **Excalibur** with a commercial package without written permission from the authors.

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OzT<sub>E</sub>X is a shareware version of T<sub>E</sub>X for the Macintosh produced by Andrew Trevorrow.