TKE User's Guide

Version: 0.1

Written by: Trevor Williams

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Chapter 1: Introduction

TKE is a source code editing environment built using Tcl/Tk which provides a clean user interface yet rich set of editing features and tools.

Feature Set

The following is a high-level list of features built-in to the tool.

Editor features

Feature	Special Notes
Syntax highlighting	• Over 15 languages currently supported • Syntax description files can be easily added • Preference control can select syntax types to highlight/not highlight • Built-in and customizable color themes
Multi-cursor support	• Cursor alignment
Internationalization support	• 10 languages currently supported
Customizable menu bindings	
Clipboard history	
Unlimited undo/redo	
Language-specific snippet support	• Support for tab stops, variable substitution, and special value substitutions.
Auto and smart indentation features	• Selected code can have indentation policies applied • Pasted code can have indentation policies applied
Code line marking support	
Line number display	
Customizable tab stops	
Many text transformation tools	
Built-in Vim support	
Expanded Vim functionality	• Vim commands for setting/clearing multiple cursors • Auto-numbering functionality

Feature	Special Notes
Regular expression in-file search (and optional replace)	
Regular expression multi-directory file search	
Symbol search function	• Jump to a named procedure or function call
Auto refresh	• Files modified outside of editor will be automatically updated (unless file is in a modified state)
File locking support	• File can be set to be read-only within the editor (regardless of actual file permissions)
Command launcher	
File/directory sidebar	• Contains functionality for creating, renaming, deleting files/directories
Multiple files can be opened at once	• Sidebar and tabs used to switch between opened files
Dual editor panel support	• Useful for viewing two files side-by-side
Split view support	• Create two views into the same file.
Maximum column width display	• Any characters that exceed a given column width will be colorized to indicate their length
Automatic session save	
Support for NFS mounted file systems	
Plugin support	• Full plugin development documentation available.

Chapter 2: Installation

Dependencies

The installation of TKE has a few dependencies that will need to be preinstalled before the application can begin to work. The dependencies are listed in the table below along with the URL path to find the source packages. The installation of these packages is outside the scope of this document. Please refer to each packages installation notes for this information.

Package	Download URL
Tcl (version 8.5.x — not tested with 8.6.x versions)	http://sourceforge.net/projects/tcl/files/Tcl/
Tk (version 8.5.x — not tested with 8.6.x versions)	http://sourceforge.net/projects/tcl/files/Tcl/
Extended Tcl (Library should be installed in one of the standard Tcl paths)	http://sourceforge.net/projects/tclx/files/TclX/

All other Tcl/Tk packages required by TKE have been bundled in the Tcl/Tk package.

Downloading

The TKE installation package is downloaded in a gzipped tarball. You can get the latest version of this tarball from the following URL:

<p align="center">http://sourceforge.net/projects/tke/files/</p>

Select a package to download within this page and save the resulting tarball into a temporary directory. After the download has completed, unzip and untar the file using the given command:

<p align="center">gzip -dc tarball_filename | tar xvf -</p>

After the tke directory has been untarballed, you can delete the original tarball using the following command:

<p align="center">rm -rf tarball_filename</p>

Installing for Linux

After all of the files have been uncompressed, move the resulting "tke" directory into any system-accessible directory on your local machine, making sure that the base directory is readable by all users on the system. For example purposes, we will use the /usr/local/lib directory as the directory that we want to place the "tke" directory into. The command to perform this copy is as follows:

mv tke /usr/local/lib

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Installing for Mac OSX

If you only plan on running tke from a terminal and are satisfied with running the application through the X11 server that runs on Mac, you can follow the same installation steps that is used for Linux-based systems. However, if you would like to install TKE like a native Mac OSX application (i.e., application available in the Applications folder, TKE icon displayed in the dock, etc.), follow these installation steps.

After downloading the TKE package in a temporary directory, perform the following command:

mv tke /Applications

You will most likely need to run this command as system admin. After this command has been executed, the Tke application will be available in the /Applications/tke/MacOSX directory. If a sufficient amount of time is given, the application should be viewable from within Spotlight.
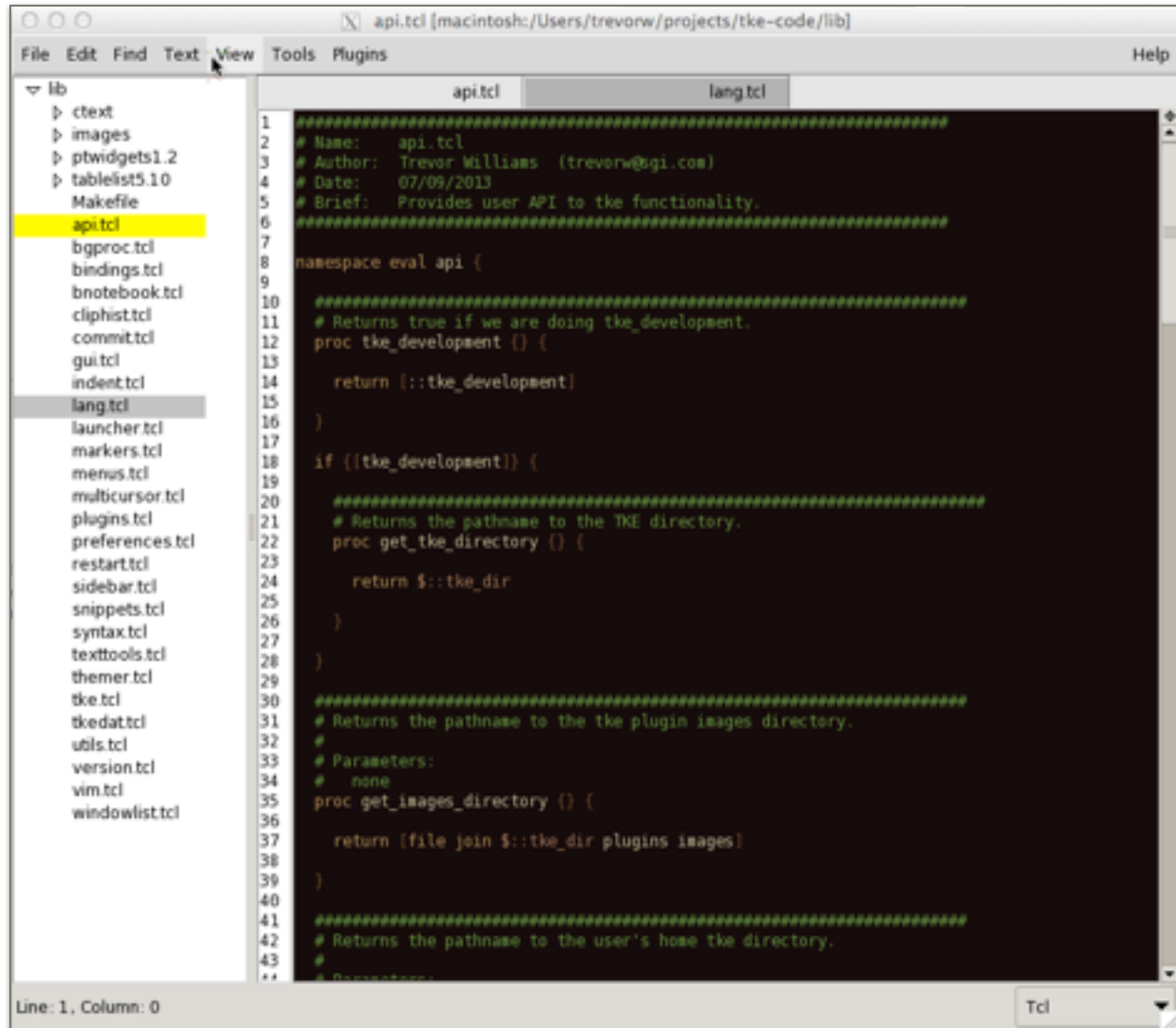
Installing for Windows

The installation process for Windows operating systems is unknown. After downloading the tarball, copy the resulting tke directory to your program folder.

Note: TKE is not developed on a Windows platform, so there may be issues in the installation and/or usage of this tool. If you would like to work through these issues, please contact me at phase1geo@gmail.com.

Chapter 3: User Interface

By default, the editing environment consists of two panels: a file/directory sidebar and the tab-controlled editing buffer itself. As much as it possible, busy and redundant UI elements are removed from the screen when they are not in use. Most of the UI is only displayed as needed when the user calls up its functionality.

Title Bar

Within the title bar at the top of the window is the basename of the file currently being edited and the name of the current working directory. All commands that deal with the file system will be relative to this working directory.

Menu Bar

Below the title bar is the menu bar. This contains a list of many of the available features within the tool. Any functionality that is contained within the listed menus can be assigned a keyboard shortcut, configurable via the menu binding file (see the "Menu Binding" Chapter for more details on the structure of this file). From left to right, the main menus are as follows:

- File
- Edit
- Find
- Text
- View
- Tools
- Plugins
- Help

File Menu

The File Menu contains commands that are related to either the currently selected file (i.e., the file in view within the editor which has the keyboard focus) or all files. The following table describes the listed menu items and their associated functionality

Menu Item	Description
New	Creates a new, unnamed file in a new tab.
Open File…	Displays an open file dialog, allowing the user to select one or more files to open. Each file will be opened in a separate tab in the editor. Any directories containing these files that are not in the sidebar will be added to the sidebar.
Open Directory…	Displays an open directory dialog, allowing the user to select one or more directories to add to the sidebar.

Menu Item	Description
Open Recent	Displays a list of files that have been recently opened. Click on a file to open it in a separate tab in the editor.
Save	Saves the contents of the current file to its original name. If an original name does not exist for the content, a "Save As" dialog will be displayed allowing the user to specify a file name.
Save As…	Displays a save file dialog window, allowing the user to save the current file contents to the given filename. The original filename of the content will be changed to this new name.
Save All	Saves all files opened in the editor to their original file names. Any files which do not have original names, will have a save file dialog window shown, allowing the user to specify the name.
Lock/Unlock	The "Lock" option will change the state of the editor to not allow text modifications to the window (content is effectively "Read Only"). A small lock icon will be displayed in the associated tab to indicate that the file content is currently "locked". The "Unlock" option will change the state of the editor back to the modifiable state.
Close	Closes the current tab. If the text content is in the modified state (as indicated by the "*" character in the tab), a prompt will be displayed asking the user if the content should be saved prior to closing.
Close All	Closes all tabs in the editor. If text content in a tab has been modified, a prompt will be displayed asking the user if the content should be saved prior to closing.
Quit	Exits the application. Any modified files in the editor will prompt the user if the content should be saved prior to exiting the application.

Edit Menu

The Edit menu contains menu items that affect the contents within the current file. The following table describes the items available within this menu.

Menu Item	Description
Undo	Undoes the last change made to the file content. Each file can have an unlimited number of items that can be undone. Saving a file clears the undo stack for that file.
Redo	Re-applies the last undone change made to the file content. Saving a file clears the redo stack for that file.
Cut	Deletes the selected text, copying the deleted content to the clipboard.
Copy	Copies the selected text to the clipboard.
Paste	Pastes the content in the clipboard, inserting the text before the insertion cursor. The content is copied "as is".
Paste and Format	Pastes the content in the clipboard, inserting the text before the insertion cursor. The content is indented to fit into the current insertion point.
Format Text	Modifies either the selected text or the entire file content (depending on whether the "Selected" or "All" menu item is selected) to match the indentation in the current context.

Find Menu

The Find menu contains items for searching and, optionally, replacing text in the current file. It also contains items that can add search text to the current selection and items for finding text in a group of files (regardless if they are currently opened in the editor or not). The following table contains the items found in this menu along with the description of its functionality.

Menu Item	Description
Find	Searches the current file for a given regular expression. The displayed search bar also contains a button for specifying whether a case sensitive search should be performed or not. All matches in the current file will be highlighted and the first match after the current cursor will be viewable and the cursor will be moved to the beginning of the match.

Menu Item	Description
Find and Replace	Searches the current file for a given regular expression and replaces it with an associated string. The displayed search and replace bar also contains two buttons: one for specifying case sensitivity of the match and one for replacing the first match or all matches.
Select next occurrence	Selects the next matched occurrence..
Select previous occurrence	Selects the previous matched occurrence.
Append next occurrence	Adds the next matched occurrence to the selection.
Append previous occurrence	Adds the previous matched occurrence to the selection.
Find marker	Jumps the cursor and file view to show the selected marker. The cursor will be placed at the beginning of the marked line.
Find matching pair	Jumps the cursor and file view to show the parenthesis or bracket that matches the parenthesis or bracket under the current cursor. The cursor will be placed on the matched pair.
Find in files	Displays a user input interface that allows the user to specify a regular expression to find within files in one or more files/directories. The directory input field can contain one or more directories (each directory is handled as a "token" in the input field). A few directories are readily available by typing a portion of their name. They are as follows: • Basename of any directory in the sidebar • Basename of any file in the sidebar • "Opened Files" - searches any files opened in the editor • "Opened Directories" - searches all opened directories in the sidebar • "Current Directory" - searches the current working directory The find interface also contains a button specifying the case sensitivity to use in the search.

Text Menu

The Text menu contains various text manipulation tools that can be used in the current file. The following table describes these menu items.

Menu Item	Description
Comment	Places a line comment in front of any selected text in the current file.
Uncomment	Removes any line comments found in the selected text in the current file.
Indent	Indents the selected text by one level of indentation.
Unindent	Unindents the selected text by one level of indentation.
Align cursors	When multicursors are set in the current file, this command will adjust each line such that all cursors will be aligned to the same column. The cursors will be aligned to the highest column in the multicursor set.
Insert enumeration	When one or more multicursors are set, allows the user to insert an ascending numerical values as specified in the subsequent "Starting number:" entry field. The content of the starting number determines what the base of the number will be. The following are valid starting number representations: *prefix*[0-9]+ • Inserts prefix followed by a decimal value. *prefix*d[0-9]+ • Inserts prefix followed by a decimal value preceded by "d" *prefix*b[0-1]+ • Inserts prefix followed by a binary value preceded by "b" *prefix*o[0-7]+ • Inserts prefix followed by an octal value preceded by "o" *prefix*[xh][0-9a-fA-F]+ • Inserts prefix followed by a hexadecimal value preceded by either "x" or "h". Note: If a value is not specified, a value of zero is assumed.

View Menu

The View menu allows the user to change the interface as desired. The following table lists the available menu items.

Menu Item	Description
Show/Hide Sidebar	Shows or hides the sidebar panel.
Show/Hide Console	For operating systems that allow a Tcl/Tk console to be viewed, shows/hides this console window from view. This menu item is only displayed if a console is available. The console is mostly useful for debugging purposes only.
Show/Hide Tab Bar	Shows or hides the tab bar.
Show/Hide Status Bar	Shows or hides the status bar at the bottom of the window.
Split view	When selected, creates a second view into the current file. Each view can be independently manipulated; however, any text modifications made in either window will be available in the other view. Deselecting this menu option will return the file to only showing a single view of the file in the editor.
Move to other pane	Moves the current file to the other text pane. If only one text pane is currently viewable, a second pane will be displayed to the right of the current pane and the file will be moved to that pane. If a pane only contains the file that is being moved, that pane will be removed from view. This allows two files to be viewed "side by side".
Tabs / Goto Next Tab	Changes the current file to be the file in the next tab in the current pane to the right of the current tab.
Tabs / Goto Previous Tab	Changes the current file to be the file in the next tab in the current pane to the left of the current tab.
Tabs / Goto Last Tab	Changes the current file to be the file in the last viewed tab in the current pane.
Tabs / Goto Other Pane	Changes the current keyboard focus to the current tab in the other pane. This menu item is only available if both panes in viewable.

Menu Item	Description
Tabs / Sort Tabs	Alphabetically sorts the tabs in the current pane.
Set Syntax	Changes the syntax highlighting and language-specific functionality to the specified language. Be default, the language is determined by file extension. This menu allows the user to override the default behavior. To permanently add an extension to a language syntax handler, you will need to modify the associated syntax file. See the "Syntax Handling" chapter for more information about the structure of this file.

Tools Menu

The Tools menu contains various miscellaneous functions that are available within the editor. The following table describes the items found in this menu.

Menu Item	Description
Launcher	Displays the command launcher interface, allowing the user to quickly access commands and other useful functionality as described in the "Command Launcher" chapter.
Theme Creator / Create new…	Creates a new syntax color theme using the theme editor/creation utility. More information about this window is available in the "Theme Creator" chapter.
Theme Creator / Edit…	Allows the user to modify one or more colors in the an existing theme using the theme editor/creation utility. More information about this window is available in the "Theme Creator" chapter.
Theme Creator / Import TextMate theme…	Allows the user to create a new syntax color theme by importing a TextMate theme file and displaying this new theme in the theme editor/creation utility. More information about this window is available in the "Theme Creator" chapter.
Vim Mode	When selected, changes the editing environment to use Vim-style interaction. When deselected, changes the editing environment back to "normal" editing mode.
Development Tools	

Menu Item	Description
Start Profiling	Starts the UI profiling facility. This allows procedural performance evaluation.
Stop Profiling	Stops the current profiling run. After profiling information has been gathered, a profile report can be viewed within the editor.
Show Last Profiling Report	Displays the results of the last profiling run within the editor.
Restart tke	Allows the editor to be quit, restarted and returned to the current editing state. This is useful when TKE source code is modified and needs to be reloaded.

Plugins Menu

The Plugins menu contains items that allow third-party plugins to be installed, uninstalled and reloaded. Additionally, if TKE is run in developer mode, provides a facility for creating a new plugin quickly. The following table describes the items in this menu.

Menu Item	Description
Install…	Allows new third-party plugins to be installed. See the "Plugins" chapter for more information.
Uninstall…	Allows third-party plugins to be uninstalled. See the "Plugins" chapter for more information.
Reload	Reloads all installed plugins. This is primarily useful when developing plugins. This menu option allows plugins to be quickly reloaded without requiring the application to be quit and relaunched.
Development Tools	
Create…	Creates the template for a new plugin and displays the file in the editor. See the "Plugin Development" chapter for more details about how to create third-party plugins.

Help Menu

The Help menu provides instructional facilities to help you learn how to use this application and to describe the application version information. The following table describes the available items in this menu.

Menu Item	Description
About TKE	Displays a window detailing the current application version and developer information.

Chapter 4: Command Launcher

The command launcher provides access to all of the available functionality from anywhere within the application. To call up the launcher, simply hit the key combination (by default, the key combination is Control-Space but this can be changed within the menu bindings file). The resulting widget is a simple entry field displayed in the upper center portion of the window. The cursor will be placed within the entry field for immediate command entry.

To perform a command, simply begin typing the name of the command that you wish to perform. As you enter characters, the command list will be immediately updated with the best matches. The command launcher uses a fuzzy search algorithm for matching that remembers the most used commands based on the input string, allowing you to quickly perform most commands with only a few typed characters.

If one or more matches are found, the top-most entry will be the best match. The best match will also be selected. To execute the best match, simply enter the RETURN key. To change the selection to another displayed match in the list, simply use the up/down arrow keys until the desired command is selected and hit the RETURN key.

The following table describes the types of commands that can be executed within the command launcher along with any special characters that call up specific functionality.

Command Type	Description	Character Sequence
Menu commands	Any menu item commands can be executed from within the launcher	(Enter any portion of the menu command string)
Clipboard History	Inserts any of the items stored in the clipboard history into the current editor and/or copies the text into the clipboard.	!…
Symbol Jumping	Jump to any supported language symbol (i.e., procedure, function, etc.) in the current editor	@…
Marker Jumping	Jump to any marker in the current editor	-…
Calculator	Perform numerical calculator expressions (any valid numerical Tcl expression is allowed). Selected result is copied to the clipboard.	(Enter any valid Tcl calculation)
Plugin installation	Displays all available plugins that can be installed. Selecting a plugin in the resulting list installs the plugin.	install

Command Type	Description	Character Sequence
Plugin uninstallation	Displays all available plugins that can be uninstalled. Selecting a plugin in the resulting list uninstalls a plugin.	uninstall
Syntax modification	Changes the syntax highlighting rules for the current editor	• Enter a name of any supported language OR • Enter "Syntax:" for a full list of all available languages
Theme modification	Changes the syntax highlighting color scheme for all editors	• Enter a name of any installed theme OR • Enter "Theme:" for a full list of all available themes

Chapter 5: Vim Commands

The editor supports a subset of the classic Vim functionality as well as some useful extensions while operating in Vim mode. To edit documentation in Vim mode, go to the "Tools" menu and click on the "Vim mode" option. When the mode is selected in the menu, the editor will respond to Vim input. To place the editor back into standard editing mode, click on the "Vim mode" menu option again. To set the default editing mode, go to the preferences file and set the "Editing/VimMode" value to a value of 1 (for Vim mode) or 0 (for standard mode).

Standard Vim Commands

The following table describes the available standard Vim functionality.

Command or KEY	Description
Undoing/Cancelling commands	
ESC	Cancels unexecuted command or if in editing mode, ends editing mode to return to command mode.
u	Counteracts last command that changed the buffer.
Repeating a command	
.	Repeats the last command that changed the buffer.
Reading in a file	
:n	Edits the next file in the editor tab order.
:e *filename*	Edits the specified file (if the file is not already opened, opens the file in a new tab).
:e#	Edits the previously edited file.
:r *filename*	Places a copy of the specified file below the current line.
CONTROL-g	Displays number of lines and characters in the current file in the status bar.
Saving/Closing a file	
:w	Writes file under the original name. If an original name has not been specified, a "Save As" window will be displayed.

Command or KEY	Description
ZZ or :wq	Writes the file under the original name and closes the current tab. If an original name has not been specified, a "Save As" window will be displayed.
:q	Closes the current tab. If the text has been modified since the last save, a prompt will be displayed asking if you would like to save before closing.
:q!	Closes the current tab regardless of the modification status. Changes will not be saved and a prompt will not be displayed.
:w *filename*	Writes the current file under the specified filename.
Searching/Replacing	
/*string*	Finds all occurrences of the given string, jumping the cursor to the first occurrence below the current line.
?*string*	Finds all occurrences of the given string, jumping the cursor to the first occurrence above the current line.
n	Jumps to the next occurrence of the previous search.
?	Jumps to the previous occurrence of the previous search.
:*x,ys*/*oldstring*/*newstring*/*flags*	Finds and replaces one or more occurrences of "oldstring" with "newstring" where "oldstring" can be any Tcl regular expression. The "flags" value if empty, causes only the first match to be replaced in the given range. If "flags" is set to g, all matches are replaced in the given range.
Inserting/Replacing text	
i	Inserts before the current character.
a	Inserts after the current character.
A	Inserts at the end of the current line.
I	Inserts at the beginning of the current line.
o	Inserts below the current line (opens new line).
O	Inserts above the current line (opens new line).
r	Replaces the current character (no ESC necessary).

Command or KEY	Description
R	Replaces from current cursor position to end of line; does not change characters not typed over.
cw	Replaces the current word
Joining text	
J	Joins the current line and the line below it.
Moving around in a file	
h	Moves left one character
j	Moves down one line
k	Moves up one line
l	Moves right one character
0 or ^	Moves to the beginning of current line
$	Moves to the end of the current line
:*linenum*	Moves to the specified line number (note: linenum value of 0 or 1 takes you to the first line)
G	Moves to the end of the file
CONTROL-f	Scrolls forward one screen
CONTROL-b	Scrolls backward one screen
Deleting text	
x	Deletes the current character
#x	Deletes # characters, starting with current character
dw	Deletes current word
dd	Deletes current line (deleted contents are placed in clipboard)
#dd	Deletes # lines, starting with the current line (deleted contents are placed in clipboard).
:*x,y*d	Deletes lines x through y (deleted contents are placed in clipboard).
Copying text	
y	Yanks the current character (yanked contents are placed in clipboard).

Command or KEY	Description
#y	Yanks # characters, starting with the current character (yanked contents are placed in clipboard).
yy	Yanks the current line (yanked contents are placed in clipboard).
#yy	Yanks # lines, starting with the current line (yanked contents are placed in clipboard).
:x,yy	Yanks lines x through y (yanked contents are placed in clipboard).
Pasting text	
p	Places contents in the clipboard below the current line.
P	Places contents in the clipboard above the current line.
:x,ys/oldstring/newstring/flags	Finds and replaces one or more occurrences of "oldstring" with "newstring" where "oldstring" can be any Tcl regular expression. The "flags" value if empty, causes only the first match to be replaced in the given range. If "flags" is set to g, all matches are replaced in the given range.
Miscellaneous	
%	Moves to matching (,), [,], { or }

Extended Vim Commands

To provide additional functionality to the user, Vim command extensions have been added to the standard list. The following table specifies these Vim command extensions.

Command or KEY	Description
Tab or text pane traversal	
:N	Changes to the previous tab.
:p	Changes focus to the tab in the other opened text pane (only available when the other pane exists).
Marker (bookmark) creation	

Command or KEY	Description
:m	Creates a marker (bookmark) for the current line. This marker can be named in the subsequent entry field that is displayed. Hitting return in the marker entry field will create a named marker (or if no text was typed, an unnamed marker). Hitting the ESC key in the entry field will cancel the marker creation process.
:m *marker*	Creates a marker (bookmark) for the current line using the provided name.
:cd *directory*	Changes the current working directory (as displayed in the title bar) to the specified directory.
Multicursor Functionality	
s	Sets a multicursor cursor on the current character. Also makes this character the anchor for any multiline cursor sets.
S	Sets multicursors for every line between the current line and the last multicursor anchor, inclusive. Each multicursor will match the column of the anchor multicursor.
J	When one or more multicursors are set, moves all of the cursors down one line
K	When one or more multicursors are set, moves all of the cursors up one line.
H	When one or more multicursors are set, moves all of the cursors to the left by one character.
L	When one or more multicursors are set, moves all of the cursors to the right by one character.

Command or KEY	Description
#	When one or more multicursors are set, allows the user to insert an ascending numerical values as specified in the subsequent "Starting number:" entry field. The content of the starting number determines what the base of the number will be. The following are valid starting number representations: *prefix*[0-9]+ • Inserts prefix followed by a decimal value. *prefix*d[0-9]+ • Inserts prefix followed by a decimal value preceded by "d" *prefix*b[0-1]+ • Inserts prefix followed by a binary value preceded by "b" *prefix*o[0-7]+ • Inserts prefix followed by an octal value preceded by "o" *prefix*[xh][0-9a-fA-F]+ • Inserts prefix followed by a hexadecimal value preceded by either "x" or "h". Note: If a value is not specified, a value of zero is assumed.

Chapter 6: Snippets

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Chapter 7: Preferences

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Chapter 8: Menu Binding

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Chapter 9: Syntax Handling

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Chapter 10: Theme Creator

TBD

Chapter 11: Plugins

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Chapter 12: Plugin Development

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