Emacs support for Unix Shell Scripting

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Description	<u>Keystroke</u>	Function	Note		
Shell Script Editing O Help & Customize Select sh-mode & type Execute region of code Navigate: function/cmd/block Using shellcheck with flycheck with flymake Insert comment Quote-surround words Insert/customize skeletons: file header insert statements Align continuation \ Show/Control Indentation Learn indentation in buffer	Emacs built-in sh-mode supports UNIX-style shell script programming. It supports several shell variants including: • bash - see Bash Reference Manual • csh - see An Introduction to C shell , csh OpenBSD man page, csh NetBSD Man page, • ksh, sh (the Bourne shell), zsh - see zsh Manual and The Z Shell page PEL activates Unix shell-script extra support with the pel-use-sh user-options. • The <f11> SPC II prefix supports Unix shell scripts. Use the <f12> key to select a sh-mode, then the <f12> key is a prefix to shell commands. • Activate sh-mode: The auto-mode-alist user-option identifies path patterns files that must use the sh-mode / shell-script-mode (an alias for sh-mode). • pel-auto-mode-alist: identifies extra entries that PEL automatically adds to the auto-mode-alist. • Add / bin/[^.]+\' to sh-mode to automatically activate sh-mode for your shell scripts stored inside your ~/bin directory. PEL also activate extra minor modes in shell-script-mode through the PEL pel-sh-activates-minor-modes user-option. • pel-make-script-executable: when turned on (set to t), Emacs makes the saved shell scripts that must be sourced and are therefore not executables: • pel-shell-sourced-script-file-name-prefix: use a regexp to identify the base name of files that are meant to be sourced. • pel-shell-script-executables that are sourced have a file name that begins with an underscore, use the following regexp: \`_ • pel-shell-script-extensions: identifies file extensions of files that PEL must not identify as sourced files. • Indentation: Use of hard tab for indentation is set by pel-sh-use-tabs. The number of columns used for indentation is controlled by pel-sh-tab-width. • Use shellcheck: Set pel-use-shellcheck to activate shellcheck-based syntax checking. Support activating flycheck or flymake manually or automatically. • Recommendation: select 'use flycheck automatically': it will activate it and will provide key bindings automatically. • Specialized templates: PEL also provide specialized code templates th</f12></f12></f11>				
Last updated on:	2025-04-25	Also see: comparison of co	mmand shells, ShellCheck Wiki, ShellCheck on-line		
Open this PDF file.	<f11> SPC Z <f1></f1></f11>	(pel-help-pdf &optional	Open the \$\frac{\pi_I - UNIX Shell}{\pi_I}\$ local PDF. If the prefix argument (like \$\mathbf{C} - \mu\$ or \$\mathbf{M}\) is used, then it opens		
See also: <u>E Help/Info</u>	<f12> <f1></f1></f12>	OPEN-WEB-PAGE)	the remote GitHub hosted raw PDF instead. If the pel-flip-help-pdf-arg user-option is set it's the other way around.		
<u>Signal Customize</u> PEL UNIX Shell support	<f11> SPC Z <f2></f2></f11>	(pel-customize-pel &optional OTHER-WINDOW)	Customize PEL UNIX Shell support. • If OTHER-WINDOW is non-nil (use C-u), display in another window.		
	<f12> <f2></f2></f12>	,	, , , , , , , , , , , , , , , , , , ,		
∑ Customize Emacs UNIX Shell support	<f11> SPC Z <f3> <f12> <f3></f3></f12></f3></f11>	(pel-customize-library &optional OTHER-WINDOW)	Customize Emacs UNIX Shell support: sh, sh-script, sh-indentation, electricity. • If OTHER-WINDOW is non-nil (use C-u), display in another window.		
Specialized Execution	The following commands	can be used to change the scrip	oting dialect and to execute a portion of the code in the buffer.		
Select sh-mode The <f12> key is available only until a PEL controlled</f12>	<f12></f12>	(pel-as &optional FORCE)	Inside a fundamental-mode buffer, interactively select major mode for the buffer. Re-do it with arg. see Create extension-less executable scripts with PEL.		
major mode is activated. Then it becomes a buffer prefix key.	After being used once in a	buffer the major mode is selec	buffer in fundamental-mode', when the <f12> key binding is available for it. ted and the PEL key binding will not be available when PEL supports the major mode. pel-has-alias-as user-ion is set to nil. You can use M-x as to invoke it.</f12>		
Set the buffer shell type.	C-c :	(sh-set-shell SHELL &optional NO-QUERY-FLAG INSERT-FLAG)	Set this buffer's shell to SHELL (a string). Prompts, support tab-completion. • When used interactively, insert the proper starting #!-line, and make the visited file executable via 'executable-set-magic', perhaps querying depending on the value of 'executable-query'. • If given a prefix (i.e., 'C-u') don't insert any starting #! line. • Calls the value of 'sh-set-shell-hook' if set.		
Use <f12> t to insert the file-local variable at the end of the file.</f12>	(don't quote it). Example of		tically when the file is visited by having a 'sh-shell' file-local variable whose value is the shell name be edited in sh-mode and as a sh (Bourne shell) script:		
Example of Emacs file-local major mode setting and local variable setting for a shell script file.	<pre># # Local Variables: # sh-shell: sh # End:</pre>				
Toggle acceptance of hyphen and period characters in shell function names.	 (pel-toggle-accept-hyphen) Toggle acceptance of hyphen and period in shell function names. Prints a message in the mini-buffer stating if hyphen and period characters are accepted or not in function names. This affects the behaviour of the iMenu commands (see <u>Nenus</u>) and <u>Speedbar</u>. By default, hyphens and periods are not accepted in shell function names to comply with the POSIX rule. However, the Bash and zsh shells do accept them so it is useful to have the ability to include them and support them. Use this command to explicitly activate them. Having to activate this explicitly will be a reminder that it's not POSIX behaviour. 				
Execute region in a sub-shell	С-М-х	(sh-execute-region START END &optional FLAG)	Pass optional header and region to a subshell for noninteractive execution. • Print result on the echo area if it fits, otherwise into the *Shell Command Output* buffer.		
		s that of the buffer, and only env	vironment variables are already set which is why you can mark a header within the script. define header from beginning of buffer to point. With a negative prefix ARG, instead of sending region,		
Specialized Navigation	The following commands	override normal key bindings ar	nd provide specialized navigation key bindings in shell scripts buffers.		
Move point to the next function definition	<f12> <down></down></f12>	(pel-sh-next-function)	Move point to the beginning of next function definition. Prints user-error if no function found. • By default does not accept hyphen and period in function names. Execute 'pel-toggle-accept-hyphen' (bound to <f12> -) to change that.</f12>		
Move point to the previous function definition	<f12> <up></up></f12>	(pel-sh-prev-function)	Move point to the beginning of previous function definition. Prints user-error if no function found. • By default does not accept hyphen and period in function names. Execute 'pel-toggle-accept-hyphen' (bound to <f12> -) to change that.</f12>		
Go to beginning of command	M-a	(sh-beginning-of-command)	Move point to successive beginnings of commands.		
Go to end of command	м-е	(sh-end-of-command)	Move point to successive ends of commands.		
Backward to beginning of block: • if* ∈ • for while until ∈ • case ∈	• C-M-b • C-M- <left> • C-[C-b • Esc C-b • Esc C-<left></left></left>	(backward-sexp &optional ARG)	Move backward across one balanced expression (sexp). • With ARG, do it that many times. Negative arg -N means move forward across N balanced expressions. This command assumes point is not in a string or comment. • C-M-b : F Shift marking is available in graphics mode, not in terminal mode. • C-M- <left>: F Shift marking works with this command.</left>		
(block backward) See also: Navigation	• ⚠ With PEL: if you want to use Esc C- <left> binding you must ensure that pel-windmove-on-esc-cursor user option is set to nil. ♦ C-M-<left> does not work on Windows, but H-<left> works. ⑤ Several Linux distros map C-M-<left> to desktop workspace operation. In that case you can either use another key binding or change Linux key binding in Systems->settings->keyboard->shortcuts to prevent it from using that key sequence.</left></left></left></left>				
Forward to end of block: • ⇒ fi • ⇒ done • ⇒ esac	• C-M-f • C-M- <right> • C-[C-f • Esc C-f • Esc C-<right></right></right>	(forward-sexp &optional ARG)	Move forward across one balanced expression (sexp). • With ARG, do it that many times. Negative arg -N means move backward across N balanced expressions. This command assumes point is not in a string or comment. • C-M-f : ► Shift marking is available in graphics mode, not in terminal mode. • C-M- <right> : ► Shift marking works with this command.</right>		
(block forward) See also: ∑ Navigation	• ⚠ With PEL: if you want to use Esc C- <right> binding you must ensure that pel-windmove-on-esc-cursor user option is set to nil. ❖ C-M-<right> does not work on Windows, but H-<right> does. ④ Several Linux distros map C-M-<right> to desktop workspace operation. In that case you can either use another key binding or change Linux key</right></right></right></right>				

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Syntax checking with shellcheck	Emacs shell script buffer syntax checking is done by shellcheck . It can be provided by the built-in flymake or the		

Description	<u>Keystroke</u>	Function	<u>Note</u>
Comments	Insert a comment, comment or un-comment a region with M-;		
Toggle display of comments in buffer or active region See also: ∑ Comments	<f11> ; ;</f11>	(hide/show-comments- toggle &optional START END)	Toggle hiding/showing of comments in the active region or whole buffer. • If the region is active then toggle in the region. Otherwise, in the whole buffer. ■ This requires the hide-comnt.el package (see EComments). EZ PEL activates it when the pel-use-hide-comnt user option is t.
Specialized Insertion			
Double quote word at point	<f12> "</f12>	(pel-sh-double-quote- word)	Surround word at point or selected area with double quotes.
Singe quote word at point	<f12> '</f12>	(pel-sh-single-quote-word)	Surround word at point or selected area with single quotes.
Backtickquote word at point	<f12> `</f12>	(pel-sh-backtick-quote- word)	Surround word at point or selected area with back-tick characters.
Insert sh-shell file-local variable form at end of file to set Emacs major mode.	<f12> t</f12>	(pel-sh-add-sh-local SHELL-NAME)	Insert a sh-shell file-local variable to end of buffer. • Prompts for a shell name, with tab-completion of supported shell names. Defaults to the current major mode shell name.
Generic code skeletons tempo skeletons See also: Inserting Text Templates	 Several mechanisms have been developed to allow easy insertion of predefined text in Emacs. Emacs provides the built-in skeleton mechanism and the tempo skeletons. PEL supports both. They are used a little bit differently. PEL provides generic tempo skeletons the handle UNIX shell script files. PEL provides key bindings to the tempo skeletons: the generic code templates, accessible via the <f6> prefix key, and the language-specific code templates, accessible via the <f12> key prefix.</f12></f6> 		
∑ Customize PEL Text Insertions control for sh-	<f6> <f2></f2></f6>	(pel-customize-pel &optional OTHER-WINDOW)	Open the customization group that control the format of the various skeletons including the generic skeleton used by the $\langle f 6 \rangle$ h key and the $\langle f 12 \rangle \langle f 12 \rangle$ h key (see below).
mode skeletons.	<f12> <f12> <f2></f2></f12></f12>	(pel-customize-generic- skels &optional OTHER- WINDOW)	If OTHER-WINDOW is non-nil (use C-u), display in other window.
Insert generic file module header block — Language agnostic	<f6> h</f6>	(pel-generic-file-header)	Insert a file header block at the top of the file. Works only for buffer visiting a file. 1. The command key binding <f6> h is available only 1 second after Emacs has started.</f6>
After inserting the template,	<f12> <f12> h</f12></f12>		
navigate though areas that must be filled with: tempo-forward-mark: C-c. tempo-backward-mark: C-c,	per prig ter en la tale contrat en me template format and per en contrat en contrat de me de contrat de la contrat		
Toggle pel-tempo-mode	<f6> SPC</f6>	(pel-tempo-mode &optional	Toggle PEL tempo mode on/off.
	<f12> <f12> SPC</f12></f12>	ARG)	
	PEL tempo mode activates C-c and C-c, as well as to C-c C- and C-c C-, key bindings to navigate across tempo mark hot-spots. When pel-tempo-mode is active the pel-tempo-mode lighter (‡) is shown on the status bar. The second set of keys are only available in graphics mode. The pel-generic-file-header command inserts the text using a tempo skeleton: the PEL tempo mode is automatically activated by typing <f6> h.</f6>		
Expand any tag in template	<f6> <f12></f12></f6>	(tempo-complete-tag	Look for a tag and expand it. All the tags in the tag lists in 'tempo-local-tags' (this includes 'tempo-
Note: PEL default skeleton does not use tags.	<f12> <f12> <f12></f12></f12></f12>	&optional SILENT)	 tags') are searched for a match for the text before the point. The way the string to match for is determined can be altered with the variable 'tempo-match-finder'. If 'tempo-match-finder' returns nil, then the results are the same as no match at all. If a single match is found, the corresponding template is expanded in place of the matching string. If a partial completion or no match at all is found, and SILENT is non-nil, the function will give a signal. If a partial completion is found and 'tempo-show-completion-buffer' is non-nil, a buffer containing possible completions is displayed.
Jump to next tempo mark	• C-c M-f • C-c . • C-c C	(tempo-forward-mark)	Jump to the next mark in 'tempo-back-mark-list': the location where code must be updated inside the inserted skeleton. • These key key bindings are only available when pel-tempo-mode is active.
Jump to previous tempo mark	• C-c M-b • C-c , • C-c C-,	(tempo-backward-mark)	Jump to the previous mark in 'tempo-back-mark-list': the location where code must be updated inside the inserted skeleton. • These key binding are only available when pel-tempo-mode is active.
Shell statement Insertion	The sh-mode provides the following commands to insert shell scripts code elements with templates defined with the Emacs skeleton language . All of these statement insertion command share the same extra description: This is a skeleton command (see 'skeleton-insert'). Normally the skeleton text is inserted at point, with nothing "inside". If there is a highlighted region, the skeleton text is wrapped around the region text. A prefix argument ARG says to wrap the skeleton around the next ARG words. A prefix argument of -1 says to wrap around region, even if not highlighted. A prefix argument of zero says to wrap around zero wordsthat is, nothing. This is a way of overriding the use of a highlighted region.		
Insert a case/switch	C-c C-c	(sh-case &optional STR ARG)	Insert a case/switch statement.
Insert a for loop	C-c C-f	(sh-for &optional STR ARG)	Insert a for loop.
Insert function definition	C-c ((sh-function & optional STR ARG)	Insert a function definition.
Insert a if statement	• C-c <tab> • C-c C-i</tab>	(sh-if &optional STR ARG)	Insert a if statement.
Insert an indexed loop from 1 to n.	C-c C-1	(sh-indexed-loop & optional STR ARG)	Insert an indexed loop from 1 to n.
Insert a getopt loop	C-c C-o	(sh-while-getopts &optional STR ARG)	Insert a while getopts loop. Prompts for an options string which consists of letters for each recognized option followed by a colon ':' if the option accepts an argument.
Insert a repeat loop definition	C-c C-r	(sh-repeat &optional STR ARG)	Insert a repeat loop definition.
Insert a select statement	C-c C-s	(sh-select &optional STR ARG)	Insert a select statement.
Insert an until loop	C-c C-u	(sh-until &optional STR ARG)	Insert an until loop.
Insert a while loop	C-c C-w	(sh-while &optional STR ARG)	Insert a while loop.
Insert/align or delete end-of- line backslash	C-c C-\	(c-backslash-region FROM TO DELETE-FLAG &optional LINE-MODE)	Insert, align, or delete end-of-line backslashes on the lines in the region. • With no argument, inserts backslashes and aligns existing backslashes. • With an argument, deletes the backslashes.
	 This function does not modify blank lines at the start of the region. If the region ends at the start of a line and the macro doesn't continue below it, the backslash (if any) at the end of the previous line is deleted. You can put the region around an entire macro definition and use this command to conveniently insert and align the necessary backslashes. Customizations: The backslash alignment is done according to: 'c-backslash-column', 'c-backslash-max-column' and 'c-auto-align-backslashes'. 		

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Indentation	Indentation of sh-mode source code is controlled by the user-options in the sh-script and sh-indentation customization groups. Open these customization groups with <f12> <f3> followed by the number that corresponds to the group shown.</f3></f12>				
Show indentation	C-c ?	(sh-show-indent ARG)	Show how the current line would be indented.		
	This tells you which variable, if any, controls the indentation of this line. If optional arg ARG is non-null (called interactively with a prefix), a pop up window describes this variable. If variable 'sh-blink' is non-nil then momentarily go to the line we are indenting relative to, if applicable.				
Set indentation for current line	C-c =	(sh-set-indent)	Set the indentation for the current line. If the current line is controlled by an indentation variable, prompt for a new value for it.		
Learn indentation from current line	C-c <	(sh-learn-line-indent ARG)	Learn how to indent a line as it currently is indented.		
	 If there is an indentation variable which controls this line's indentation, then set it to a value which would indent the line the way it presently is. If the value can be represented by one of the symbols then do so unless optional argument ARG (the prefix when interactive) is non-nil. 				
Learn indentation from buffer This command can often take a long time to run.	C-c >	(sh-learn-buffer-indent &optional ARG)	Learn how to indent the buffer the way it currently is.		
	 If 'sh-use-smie' is non-nil, call 'smie-config-guess'. Otherwise, run the sh-script specific indent learning command, as described below. Output in buffer "*indent*" shows any lines which have conflicting values of a variable, and the final value of all variables learned. When called interactively, pop to this buffer automatically if there are any discrepancies. If no prefix ARG is given, then variables are set to numbers. If a prefix arg is given, then variables are set to symbols when applicable e.g. to symbol '+' if the value is that of the basic indent. If a positive numerical prefix is given, then 'sh-basic-offset' is set to the prefix's numerical value. Otherwise, sh-basic-offset may or may not be changed, according to the value of variable 'sh-learn-basic-offset'. Abnormal hook 'sh-learned-buffer-hook' if non-nil is called when the function completes. The function is abnormal because it is called with an alist of variables learned. 				