## **Emacs Support for D**

Description	Keystroke	Function	Note	
Support for the D programming language	supports the <u>curly-bracket pr</u> table below.	Figure 2 Emacs supports the D programming language via a the defendence external package. This package extends the Emacs CC Mode built-in package which supports the curly-bracket programming languages like D. Other external packages provide other features for working with D, they are listed in the reference table below.  PEL activates D support via the customize user option variable pel-use-d. It must be set to t to activate support for D.		
	Important aspects of D source code syntax controlled by the CC Mode are customizable with PEL user option variables.  PEL customization for D: Simplifies configuration for editing D source code (To change, execute: M-x customize-group pel-pkg-for-d):  Emacs customization group: pel-pkg-for-d  • pel-d-indentation: Identifies the number of columns used for indentation. Defaults to 4.  • pel-d-tab-width: The width of a tab. Defaults to 4. This concept differs from indentation: you can have an indentation of 4 and tab width of 8: M-i will move point to columns that are multiple of 8 <tab> will indent to a column that is a multiple of 4.  • pel-d-use-tabs: Whether hard tabs are used in indentation or not: t: tabs are used, nil: only spaces are used. Default: nil.  • pel-d-backet-style: The bracket/indentation style supported by the electric keys. One of the values supported by Emacs (also possible to define your own with Elisp code). Default to "bsd".  • Emacs customization group: pel-pkg-for-cc. Applies to all CC Mode related modes (like d-mode).</tab>			
	• pel-cc-auto-newline: Whether automatic newline mode is active on all CC Mode (including d-mode).  The values for those user option variables can also be stored inside directory local files and even as file local variables. You can also modify them for each but and view their current settings using the commands listed in the following set of rows. None of the commands below change PEL default; they change the variables to the current buffer only.			
	PEL provides the following set of mode-specific key prefixes:  • <f11> SPC D  • <f12> • <m-f12>  The first one is always available. The other two prefixes are only available when the current buffer is in d-mode. The <m-f12> prefix helps the typing flow when</m-f12></m-f12></f12></f11>			
CC Made Style			C D prefix is normally omitted in the table.  Its syntactic interpretation of the current line and the indentation mode in use.	
CC Mode Style Management	You can impose an indentation cases you can use CC Mode	on style by customization. But yo	ou may use source code written by others and want to continue using the same style. In those report it or start using it (installing it) with the following commands.	
Guess the style used in the current buffer, do not install it	M-x c-guess-buffer- no-install	( <b>c-guess-buffer-no-install</b> &optional ACCUMULATE)	Guess the style on the whole current buffer; don't install it.  • If given a prefix argument (or if the optional argument ACCUMULATE is non-nil) then the previous guess is extended, otherwise a new guess is made from scratch.	
Guess the style of the code in the buffer	M-x c-guess-buffer	(c-guess-buffer &optional ACCUMULATE)	<ul> <li>Guess the style on the whole current buffer, and install it.</li> <li>The style is given a name based on the file's absolute file name.</li> <li>If given a prefix argument (or if the optional argument ACCUMULATE is non-nil) then the previous guess is extended, otherwise a new guess is made from scratch.</li> </ul>	
<u>Guess style</u> in the region	M-x c-guess	(c-guess &optional ACCUMULATE)	Guess the style in the region up to 'c-guess-region-max', and install it.  The style is given a name based on the file's absolute file name.  If given a prefix argument (or if the optional argument ACCUMULATE is non-nil) then the previous guess is extended, otherwise a new guess is made from scratch.	
Guess the style of a region	M-x c-guess-region	(c-guess-region START END &optional ACCUMULATE)	Guess the style on the region and install it.  The style is given a name based on the file's absolute file name.  If given a prefix argument (or if the optional argument ACCUMULATE is non-nil) then the previous guess is extended, otherwise a new guess is made from scratch.	
View Guessed style	M-x c-guess-view	(c-guess-view &optional WITH-NAME)	Emit emacs lisp code which defines the last guessed style, so you can put the code into .emacs if you prefer the guessed code.  TSTYLE NAME HERE" is used as the name for the style in the emitted code. If WITH-NAME is given, it is used instead. WITH-NAME is expected as a string but if this function called interactively with prefix argument, the value for WITH-NAME is asked to the user.	
Determine syntactic context of current line.	M-x c-guess-basic- syntax	(c-guess-basic-syntax)	Determine the syntactic context of the current line.	
Show/Modify syntactic context	C-c C-o	(c-set-offset SYMBOL OFFSET &optional IGNORED)	Change the value of a syntactic element symbol in 'c-offsets-alist'.  • SYMBOL is the syntactic element symbol to change and OFFSET is the new offset for that syntactic element. The optional argument is not used and exists only for compatibility reasons.	
Show syntactic information for current line	C-c C-s	(c-show-syntactic- information ARG)	Show syntactic information for current line.  • With universal argument, inserts the analysis as a comment on that line.	
CC Mode support	The CC Mode controls the in-	dentation and bracket style which ace when editing D source code.	each of the programming languages similar that have a mode derived from CC Mode like D. n controls what happens when electric characters are typed (when the electric mode is activated)	
Display current Mode settings	• <f12> M-? • <m-f12> M-? • <f11> SPC D M-?</f11></m-f12></f12>	(pel-cc-mode-info)	Display information about current CC mode derivative for the current buffer.  • Example of the information displayed (which reflects PEL's defaults):  -UUÜ:F1 hello.d Top (43,0) (D//la WK Abbrev) d-mode state:  - Indent width : 4  - Tab width : 4  - Indenting with : spaces only - Bracket style : bsd - Comment style : Line comments: // - Electric chars : active: #*/(){}:;, - Auto newline : on - Syntactic indent : on - Hungry delete : off, but the F11-₺ and F11-₺ keys are available.	
Toggle Electric state	• C-c C-l • <f12> M-e • <m-f12> M-e</m-f12></f12>	(c-toggle-electric-state &optional ARG)	Toggle the electric indentation feature done with the electric character keys.  • Optional numeric ARG, if supplied, turns on electric indentation when positive, turns it off when negative, and just toggles it when zero or left out.	
Toggle auto-newline insertion mode	• C-c C-a • <f12> M-RET • <m-f12> M-RET</m-f12></f12>	(c-toggle-auto-newline &optional ARG)	Toggle auto-newline feature.  Optional numeric ARG, if supplied, turns on auto-newline when positive, turns it off when negative, and just toggles it when zero or left out.  Turning on auto-newline automatically enables electric indentation.  When the auto-newline feature is enabled (indicated by "/la" on the mode line after the mode name) newlines are automatically inserted after special characters such as brace, comma, semi-colon, and colon.  Emacs allows customizing the style and how automatic newlines are used. See the CC Mode Manual section: Customizing Auto-newlines.	
Set indentation style	• C-c . • <f12> M-s • <m-f12> M-s</m-f12></f12>	(c-set-style STYLENAME &optional DONT-OVERRIDE)	Set the <u>bracket/indentation style</u> for the current buffer.  Prompts for the name.  Supports tab completion (so use tab to see the list). Can be one of the <u>values supported by Emacs</u> but you can also add your customized mode with some Emacs Lisp code.	

Description	Keystroke	Function	Note
Toggle syntactic indentation	• <f12> M-i • <m-f12> M-i</m-f12></f12>	(c-toggle-syntactic- indentation &optional ARG)	<ul> <li>Toggle syntactic indentation.</li> <li>Optional numeric ARG, if supplied, turns on syntactic indentation when positive, turns it off when negative, and just toggles it when zero or left out.</li> <li>When syntactic indentation is turned on (the default), the indentation functions and the electric keys indent according to the syntactic context keys, when applicable.</li> <li>When it's turned off, the electric keys don't reindent, the indentation functions indents every new line to the same level as the previous nonempty line, and M-x c-indent-command adjusts the indentation in steps specified by 'c-basic-offset'. The indentation style has no effect in this mode, nor any of the indentation associated variables, e.g. 'c-special-indent-hook'.</li> </ul>
Electric Keys and Keywords	The following characters have	e special meaning when the elect	trical state is active in a buffer using d-mode.
	#	(c-electric-pound ARG)	Insert a "#".  • If 'c-electric-flag' is set, handle it specially according to the variable 'c-electric-pound-behavior', which can only be nil or 'alignleft'. If a numeric ARG is supplied, or if point is inside a literal or a macro, nothing special happens.  • D does not use the pound character much. It only uses it for #line statements.
	• (	(c-electric-paren ARG)	Insert a parenthesis.  If 'c-syntactic-indentation' and 'c-electric-flag' are both non-nil, the line is reindented unless a numeric ARG is supplied, or the parenthesis is inserted inside a literal.  Whitespace between a function name and the parenthesis may get added or removed; see the variable 'c-cleanup-list'.  Also, if 'c-electric-flag' and 'c-auto-newline' are both non-nil, some newline cleanups are done if appropriate; see the variable 'c-cleanup-list'.
	• {	(c-electric-brace ARG)	Insert a brace.  If 'c-electric-flag' is non-nil, the brace is not inside a literal and a numeric ARG hasn't been supplied, the command performs several electric actions:  a) If the auto-newline feature is turned on (indicated by "/la" on the mode line) newlines are inserted before and after the brace as directed by the settings in 'c-hanging-braces-alist'.  b) Any auto-newlines are indented. The original line is also reindented unless 'c-syntactic-indentation' is nil.  c) If auto-newline is turned on, various newline cleanups based on the settings of 'c-cleanup-list' are done.
	:	(c-electric-colon ARG)	Insert a colon.  • If 'c-electric-flag' is non-nil, the colon is not inside a literal and a numeric ARG hasn't been supplied, the command performs several electric actions:  a) If the auto-newline feature is turned on (indicated by "/la" on the mode line) newlines are inserted before and after the colon based on the settings in 'c-hanging-colons-alist'.  b) Any auto-newlines are indented. The original line is also reindented unless 'c-syntactic-indentation' is nil.  c) If auto-newline is turned on, whitespace between two colons will be "cleaned up" leaving a scope operator, if this action is set in 'c-cleanup-list'.
	• ;	(c-electric-semi, ARG)	Insert a comma or semicolon.  • If 'c-electric-flag' is non-nil, point isn't inside a literal and a numeric ARG hasn't been supplied, the command performs several electric actions:  a) When the auto-newline feature is turned on (indicated by "/la" on the mode line) a newline might be inserted. See the variable 'c-hanging-semi&comma-criteria' for how newline insertion is determined.  b) Any auto-newlines are indented. The original line is also reindented unless 'c-syntactic-indentation' is nil.  c) If auto-newline is turned on, a comma following a brace list or a semicolon following a defun might be cleaned up, depending on the settings of 'c-cleanup-list'.
<u>D</u> comments	2 more characters have electric behaviour: / and * to help support comments in D.  D supports the following types of comments (only the first 2 are explicitly supported by Emacs):  Block Comments: /* comment */  Line Comments: // comment to end of line  Nesting Block Comments: /* nesting /+comments +/ can span multiple lines and surround // style comment +/  Documentation Comments: Use several prefixes: /// , /** multi-line documentation */ , and /++ multi-line documentation +/		
	/	(c-electric-slash ARG)	Insert a slash character.  • If the slash is inserted immediately after the comment prefix in a c-style comment, the comment might get closed by removing whitespace and possibly inserting a "*". See the variable 'c-cleanup-list'.  • Indent the line as a comment, if:  1. The slash is second of a "/" line oriented comment introducing token and we are on a comment-only-line, or  2. The slash is part of a "*/" token that closes a block oriented comment.  • If a numeric ARG is supplied, point is inside a literal, or 'c-syntactic-indentation' is nil or 'c-electric-flag' is nil, indentation is inhibited.
	*	(c-electric-star ARG)	Insert a star character.  If 'c-electric-flag' and 'c-syntactic-indentation' are both non-nil, and the star is the second character of a C style comment starter on a comment-only-line, indent the line as a comment.  If a numeric ARG is supplied, point is inside a literal, or 'c-syntactic-indentation' is nil, this indentation is inhibited.  With this key it becomes easy to type the following two styles of multi-line block comment:   /* Two star  ** continuation  ** prefix for  ** multi-line  ** C comment.  */  /* Single star  * prefix for  * multi-line  * c comment.  */  When typing the '*' at the beginning of the line, it indents automatically. If another '*' is typed, indentation is set to allow a two-star continuation, otherwise it is placed for a single star continuation.
Toggle Comment Style	• C-c C-k • <f12> M-; • <m-f12> M-;</m-f12></f12>	(c-toggle-comment-style &optional ARG)	Toggle the comment style between block and line comments.  • Optional numeric ARG, if supplied, switches to block comment style when positive, to line comment style when negative, and just toggles it when zero or left out.  ⚠ Only the // and /* */ styles are supported. The /++/ comments are not supported.  ➡ This is part of CC Mode. Use <£12> M-? to display the current state.

Description	Keystroke	Function	Note
Comment/un-comment	М-;	(comment-dwim ARG)	Comment line or region with // or /* */ style comments depending on the comment style currently used in the buffer.  • When no marked region and no comment:  • On empty line: insert comment starter at the proper indentation level. Typed again: move it toward end of line.  • On line with code: insert comment starter after the code for an end-of-line comment  • With marked un-commented region:  • Comment region (each line is commented)  • With marked commented region:  • removes the comment.  • Call the comment command you want (Do What I Mean).  • If the region is active and 'transient-mark-mode' is on, call 'comment-region' (unless it only consists of comments, in which case it calls 'uncomment-region'). Else, if the current line is empty, call 'comment-insert-comment-function' if it is defined, otherwise insert a comment and indent it. Else if a prefix ARG is specified, call 'comment-kill'. Else, call 'comment-indent'.  • You can configure 'comment-style' to change the way regions are commented: see <f12> M-; to toggle the comment style.</f12>
		&optional ARG)	<ul> <li>With just C-u prefix arg, uncomment each line in region BEG END.</li> <li>Numeric prefix ARG means use ARG comment characters.</li> <li>If ARG is negative, delete that many comment characters instead.</li> <li>The strings used as comment starts are built from 'comment-start' and 'comment-padding'; the strings used as comment ends are built from 'comment-end' and 'comment-padding'.</li> <li>By default, the 'comment-start' markers are inserted at the current indentation of the region, and comments are terminated on each line (even for syntaxes in which newline does not end the comment and blank lines do not get comments). This can be changed with 'comment-style'.</li> <li>If you try this when no region is marked and the /* */ style comments is active, the comment ends on the next space, which is probably not what you want. The command comment-dwim works better.</li> </ul>
Fill current paragraph (See also: ∑ Filling/ Justification)	• M-q • <f12> F • <m-f12> F • <f11> SPC D F</f11></m-f12></f12>	( <b>c-fill-paragraph</b> &optional <u>ARG</u> )	Like <f11> t f p but handles // and /* * / style comments.  • If any of the current line is a comment or within a comment, fill the comment or the paragraph of it that point is in, preserving the comment indentation or line-starting decorations (see the 'c-comment-prefix-regexp' and 'c-block-comment-prefix' variables for details).  • If point is inside multiline string literal, fill it. This currently does not respect escaped newlines, except for the special case when it is the very first thing in the string. The intended use for this rule is in situations like the following:  char description[] = "\ A very long description of something that you want to fill to make nicely formatted output.";  • If point is in any other situation, i.e. in normal code, do nothing.  • Optional prefix ARG means justify paragraph as well.</f11>
Toggle subword- mode (See also: ∑ Text Modes)	• <f11> t m b • <f12> M-b • <m-f12> M-b • <f11> SPC D M-b</f11></m-f12></f12></f11>	(subword-mode &optional ARG)	Toggle subword-mode: a minor mode that treats sections of <a href="mailto:camelCase">camelCase</a> and <a href="mailto:PascalCase">PascalCase</a> as distinct words.  • With a prefix argument ARG, enable Subword mode if ARG is positive, and disable it otherwise.  • Since <a href="mailto:Dnaming convention">Dnaming convention</a> promotes the use of <a href="mailto:camelCase">camelCase</a> for functions, enums, constants and variables and <a href="mailto:PascalCase">PascalCase</a> for types, using the subword-mode allows you to move into, delete, transpose the section of the words with the corresponding word commands.
Hungry Deletion of Whitespace	The CC mode provides two commands that can perform "hungry whitespace deletion" that can also be used in every mode.  • EPL provides the convenient keys with the <f11> prefix keys for those 2 commands, available in all modes.  • In modes compatible with the CC Mode (e.g. for C, C++, D, Java, Pike, etc) it is also possible to activate the Hungry Delete Mode to modify the behaviour of the simple <del> and C-d, to perform hungry deletions. That's not currently supported in other modes.  • When the Hungry Delete Mode is on, the mode-line displays a 'h' to the right of the '//l' indication of electric mode.  • The Hungry Mode also activates the key prefixes below that start with C-c. They are listed but remember they are only available once the Hungry state mode is activated (and that can only be done in modes that are CC Mode compatible).  • In modes derived from CC Mode you can also activate the hungry state to make standard delete commands delete hungrily, but that does not work for other modes. PEL provides the <f12> M-DEL key for those modes (like D).</f12></del></f11>		
Delete preceding char or all preceding whitespace.  (See also: ∑ Cut & Paste)	• C-c DEL • C-c 🖄 • C-c C-X • C-c <c-backspace> • C-c C-DEL • <f11> X</f11></c-backspace>	(c-hungry-delete- backwards)	Delete the preceding character or all preceding whitespace back to the previous non-whitespace character.  □ In terminal mode, even though C-⟨S , <c-backspace⟩ <f11="" and="" anyway="" are="" attempting="" available,="" because="" bindings="" c-del="" command="" end="" first="" invoking="" key="" mapped="" non-control="" not="" pel,="" recognized.="" so="" the="" them="" they="" to="" type="" up="" with="" □=""> ⟨S  binding is always available, in all modes. The other keys are only available in modes derived from the CC Mode. This prevents conflicts with other modes that may use the popular C-c bindings.</c-backspace⟩>
Delete next char or all following whitespace.  (See also: ∑ Cut & Paste)	• C-c C-d • C-c 🖾 • C-c C-🖾 • C-c <c-delete> • <f11> 🖾</f11></c-delete>	(c-hungry-delete-forward)	Delete the following character or all following whitespace up to the next non-whitespace character.  In terminal mode, even though C-IX and <c-delete> are not available, they are mapped to the non-control key so attempting to type them end up invoking the command anyway because the first key bindings are recognized.  With PEL, the <f11> IX binding is always available, in all modes. The other keys are only available in modes derived from the CC Mode. This prevents conflicts with other modes that may use the popular C-c bindings.</f11></c-delete>
Toggle Hungry Delete mode	• <f12> M-DEL • <m-f12> M-DEL</m-f12></f12>	(c-toggle-hungry-state &optional ARG)	Toggle hungry-delete-key feature. Affect <del> and C-d keys.  • Optional numeric ARG, if supplied, turns on hungry-delete when positive, turns it off when negative, and just toggles it when zero or left out.  • When the hungry-delete-key feature is enabled (indicated by "/h" on the mode line after the mode name) the delete key gobbles all preceding whitespace in one fell swoop.  • This is part of CC Mode. Use <f12> M-? to display the current state.</f12></del>
<u>Indentation</u>			Mode logic and provided commands listed below. the end of this list. They are also listed in the ∑ Indentation table.

Description	Keystroke	Function	Note
Indent current line or	<tab></tab>	(c-indent-line-or-region	Indent active region, current line, or block starting on this line.
region		&optional ARG REGION)	Behaviour depends on syntactic-indentation mode (enabled by default but can be toggled on/off
(See also: ∑ Indentation)			with the <f12> M-i key):  • With syntactic-indentation on (the default):</f12>
			<ul><li>In Transient Mark mode, when the region is active, reindent the region.</li><li>Otherwise, with a prefix argument, rigidly reindent the expression starting on the current line.</li></ul>
			Otherwise reindent just the current line. In this might seem strange for new Emacs users, but it ends up being very useful. You can
			type <tab> anywhere in the line to adjust the indentation of the current line or everything in</tab>
			the marked area if a block is marked.  • With syntactic-indentation off:
			<ul> <li><tab> always indent current line by one level</tab></li> <li>C-u - <tab> or M- <tab> always un-indent current line by one level</tab></tab></li> <li>Indenting marked region is done without syntax knowledge and at the same level as</li> </ul>
			previous line.
			<ul> <li>If you want to indent rigidly you can use:</li> <li>(pel-indent-rigidly &amp;optional N) (bound to C-x <tab> and to <f11> <tab><tab>) to</tab></tab></f11></tab></li> </ul>
			indent the line or region rigidly.  • (tab-to-tab-stop), bound to M-i to insert spaces to the next tab stop column.
Indent lines of list	C-M-q	(indent-pp-sexp &optional	Indent each line of the list starting just after point, or pretty-print it.
after point (See also: ∑		ARG)	<ul> <li>A prefix argument (C-u) specifies pretty-printing. Pretty-printing essentially uses more lines as it places the beginning of each list on a new line.</li> </ul>
Indentation) Indent current	0 - 0 -	(c-indent-defun)	Indent the content of the current top-level function or class. Leaves point unchanged.
function or class	C-c C-q	,	
Indent a region	C-M-\	(indent-region START END & optional COLUMN)	Indent each nonblank line in the region.  • A numeric prefix argument specifies a column: indent each line to that column.
			With no prefix argument, the command chooses one of these methods and indents all the lines with it:
			If 'fill-prefix' is non-nil, insert 'fill-prefix' at the beginning of each line in the region that does not already begin with it.      If 'fill-prefix' is non-nil, insert 'fill-prefix' at the beginning of each line in the region that does not already begin with it.      If 'fill-prefix' is non-nil, insert 'fill-prefix' at the beginning of each line in the region that does not already beginning of each line in the region that does not already beginning of each line in the region that does not already beginning of each line in the region that does not already beginning of each line in the region that does not already beginning of each line in the region that does not already beginning of each line in the region that does not already beginning of each line in the region that does not already beginning of each line in the region that does not already beginning of each line in the region that does not already beginning of each line in the region that does not already beginning of each line in the region that does not already beginning the region of
			If 'indent-region-function' is non-nil, call that function to indent the region.     Indent each line via 'indent-according-to-mode'.
			When a region is marked you can also use the simple <tab> to do the same when syntactic-indentation is active.</tab>
Non Syntactic	Emacs provides the following	command to indent without rega	ards to semantics. More information on indentation is available in the ∑ Indentation table.
Indentation Insert spaces or tabs	M-i	(tab-to-tab-stop)	Insert spaces or tabs to next defined tab-stop column.
to next defined tab- stop column		(tab to tab ctop)	The exact location of the next tab stop is identified by the value of the tab-stop-list and tab-width for the current buffer.
(See also: ∑ Indentation)			
Indent/Unindent	• C-x <tab></tab>	(pel-indent-rigidly &optional	Indent rigidly the marked region or current line N times.
rigidly	• <f11> <tab> <tab></tab></tab></f11>	N)	<ul> <li>If a region is marked, it uses 'indent-rigidly' and provides the same prompts to control indentation changes.</li> </ul>
(See also: ∑ Indentation)			<ul> <li>If no region is marked, it operates on current line(s) identified by the numeric argument N (or if not specified N=1):</li> </ul>
			<ul> <li>N = [-1, 0, 1] : operate on current line</li> <li>N &gt; 1 : operate on the current line and N-1 lines below.</li> </ul>
			<ul> <li>N &lt; -1 : operate on the current line and (abs N) -1 lines above.</li> </ul>
			FEL rebinds this key, but it extends the functionality: pel-indent-rigidly uses indent-rigidly, described below the dashed line.
		─────────────────────────────────────	Indent all lines starting in the region.
		instead of the standard:	<ul> <li>If called interactively with no prefix argument, activate a transient mode in which the indentation can be adjusted interactively by typing <left>, <right>, <s-left>, or <s-< li=""> </s-<></s-left></right></left></li></ul>
		(indent-rigidly START END ARG &optional INTERACTIVE)	right>.
		7 TO doptional invitation (1)	These commands activate a transient mode where Emacs prompts for extra keys to control how to indent. Indenting and un-indenting is possible. The capabilities are controlled by the variable
			indent-rigidly-map with by default provides:  • S- <right> indent-rigidly-right-to-tab-stop</right>
			<ul><li>S-<left> indent-rigidly-left-to-tab-stop</left></li><li><right> indent-rigidly-right</right></li></ul>
			<ul> <li><left> indent-rigidly-left</left></li> <li>Typing any other key deactivates the transient mode.</li> </ul>
			⚠ Since cua-mode uses <b>C-x</b> , to invoke this command when cua-mode is active, type it really fast or type <b>C-x C-x <tab></tab></b> (or use the PEL binding <b><f11></f11> <tab></tab> <tab></tab></b> ).
Indent rigidly C-mode	• <f6> <tab></tab></f6>	(pel-insert-c-indent &optional	Insert as many spaces as identified by <b>c-basic-offset</b> variable on the current line or all marked
style	• <f11> <tab> c</tab></f11>	N)	lines.  • If a region was marked before the command it remains marked, allow further use of the same
Un-indent rigidly C-	• <backtab></backtab>	(pel-unindent &optional N)	or other command to control the region. Use <b>C-g</b> to de-activate the region.  Un-indent current line or marked lines by N times <b>c-basic-offset</b> spaces.
mode style	• <f6> <backtab> • <f6> <backtab> • <f11> <tab> C</tab></f11></backtab></f6></backtab></f6>	u-or anniaoni aoptional ty	Works for point is anywhere on the line.      If a region was marked before the command it remains marked, allow further use of the same
	- NIII/ NEAD/ C		or other command to control the region. Use <b>C-g</b> to de-activate the region.
Inserting New	The behaviour of the RET key	depends on whether the CC Mo	• ## Limitation: does not handle hard tabs properly.  de electric mode is active or not. When it is not active it simply inserts a new line. When it is active
Lines			le syntactic context. The following commands can also be used.
Open Line in Context (See also: ∑ Whitespace)	• <f12> RET • <m-f12> RET</m-f12></f12>	(c-context-open-line)	Insert a line break suitable to the context and leave point before it.  • This is the 'c-context-line-break' equivalent to 'open-line', which is normally bound to C-o. See 'c-context-line-break' for the details.
Insert an indented line below current	• M- <ret> • <f11> <tab> <ret></ret></tab></f11></ret>	(pel-newline-and-indent- below)	Insert an indented line just below current line regardless of the position of point.  So if point is at the beginning, middle or end of the line it just insert a new line below the current
line (See also:∑Indentation)	TELE TOUR SKELV	,	one at the proper indentation.
Marking	Emacs provides the following	command to quickly mark the w	hole content of the current function. More mark commands exists, see the ∑ Marking table.
Mark the complete	С-м-h	(c-mark-function)	Mark complete function.
function body			<ul> <li>Put mark at end of the current top-level declaration or macro, point at beginning.</li> <li>If point is not inside any then the closest following one is chosen. Each successive call of this</li> </ul>
(See also: ∑ Marking)			command extends the marked region by one function.  • A mark is left where the command started, unless the region is already active (in Transient Mark mode).
			<ul> <li>mode).</li> <li>As opposed to C-M-a and C-M-e, this function does not require the declaration to contain a brace block.</li> </ul>
			brace block.

Description	Keystroke	Function	Note
Highlighting blocks	The following commands can be used to activate or toggle useful modes to highlight blocks of (), {}, and [].  • show-paren-mode, which highlights the parens that matches the one before or after point.  • rainbow delimiters mode, where matching nested parens are highlighted with the same colour.		
Toggle show-paren mode on/off (see also: ∑ Highlight)	• <f12> M-9 • <f11> SPC D M-9 • <f11> b h (</f11></f11></f12>	( <b>show-paren-mode</b> &optional ARG)	Toggle visualization of matching parens (Show Paren mode).  With a prefix argument ARG, enable Show Paren mode if ARG is positive, and disable it otherwise.  Show Paren mode is a global minor mode. When enabled, any matching parenthesis is highlighted in 'show-paren-style' after 'show-paren-delay' seconds of Emacs idle time.
Enable/Disable coloured highlight of nested blocks (),(},[] (see also: ∑ Highlight)	• <f12> M-r • <f11> SPC D M-r • <f11> b h R</f11></f11></f12>	(rainbow-delimiters-mode &optional ARG)	Highlight nested parentheses, brackets, and braces with different colours according to their depth.  • Customize the depth and colours with M-x customize-group rainbow-delimiters  • Requires: rainbow-delimiters.el  • PEL activates this when the pel-use-rainbow-delimiters customize variable is set to t.
Navigation in D (See also: ∑ Navigation)	Emacs provides commands to navigate across source of curly bracket programming languages like D.  Most commands are specialization of the normal navigation commands which are described in the table \( \subseteq \) Navigation, along with the other commands that are also available. The list below describe the specialized commands only. See the others inside \( \subseteq \) Navigation, like the navigation by blocks, very useful in D.		
Go to beginning of statement	м-а	(c-beginning-of-statement &optional COUNT LIM SENTENCE-FLAG)	Go to the beginning of the innermost statement.  • With prefix arg, go back N - 1 statements.  • If already at the beginning of a statement then go to the beginning of the closest preceding one, moving into nested blocks if necessary (use C-M-b to skip over a block). If within or next to a comment or multiline string, move by sentences instead of statements.
Go to the end of statement	м-е	(c-end-of-statement &optional COUNT LIM SENTENCE-FLAG)	Go to the end of the innermost statement.  • With prefix arg, go forward N - 1 statements.  • Move forward to the end of the next statement if already at end, and move into nested blocks (use C-M-f to skip over a block). If within or next to a comment or multiline string, move by sentences instead of statements.
Go to beginning of current function or top-level function	С-м-а	( <b>c-beginning-of-defun</b> &optional ARG)	Move backward to the beginning of a defun.  Every top level declaration that contains a brace paren block is considered to be a defun.  With a positive argument, move backward that many defuns. A negative argument -N means move forward to the Nth following beginning.
Goto end of current function or top-level function	С-М-е	( <b>c-end-of-defun</b> &optional ARG)	Move forward to the end of a top level declaration.  • With argument, do it that many times. Negative argument -N means move back to Nth preceding end.

## Emacs & D— References

Document	Notes
The D Programming Language	
D (programming language) - Wikipedia	Overview of D
D Home Page	
D Home Page - Documentation	Links to the Language Reference, Library Reference, Command-line Reference, Feature Overview and Articles.
DUB - The D Package Registry	Browsable/searchable list of packages
The D Style - D Code Guideline	This document provides a set of style conventions promoted by the D community. Several items in this guideline identify stylistic aspects that can be configured in Emacs. Some of them are listed here:  • Indentation:  • spaces instead of tabs
The Next Big Programming Language You've Never Heard Of   WIRED - 2014	D is a very nice language, unfortunately it never got the attention could have got if it had some big corporate backup. Interview with Andrei Alexandrescu discussing his encounter with Walter Bright and the D language.
Emacs Support for D	Support for D for Emacs is based on:  • Emacs D Mode  • Code completion support that uses:  • A completion front end, either:  • Auto-Complete based using ac-dcd.  • Company based using company-dcd.  • Both of these depend on flycheck-dmd-dub, which uses DCD, the D Completion Daemon, written in D.  • Both require/use flycheck  • D Unit test support: flycheck-d-unittest
Emacs D Mode	The main support for D. Available on MELPA as <u>d-mode</u> . The d-mode is based on cc-mode.
ac-dcd : Auto Complete D Code Completion via DCD backend	Available on MELPA as ac-dcd.  • This project also recommend using <u>vasnippet</u> and <u>popwin</u> .  (require 'ac-dcd) (add-to-list 'ac-modes 'd-mode) (add-hook 'd-mode-hook #'ac-dcd-setup)
Company-DCD - Company D Code Completion via DCD backend	Available on MELPA as company-dcd.  • DCD is the D Completion Daemon (DCD @ Github).
flycheck-dmd-dub	Available from melba as flycheck-dmd-dub.  Flycheck support for D: reads D library dependency information from DUB (the D Package Registry).  To use it you must install DCD separately (see instructions on the DCD Github page).  See also the DUB DCD page which has the same info as GitHub but also has internal documentation of the D code interfaces down to the source code.  On macOS, the dcd-client and dcd-server commands can be installed with Homebrew.
D Unit Test support: <u>flycheck-d-unittest</u>	Available on MELPA as <a href="flycheck-d-unittest">flycheck-d-unittest</a> .  • Runs D unit test with "dmd -uninttest and -main options".  • Takes advantage that D has built-in syntax and dmd support for unit test builds and runs.  • The project has a wiki page, "Start D with Emacs", describing how to install Emacs support for D (but only describes d-mode and flycheck-d-unittest)

Document	Notes
yasnippets for D	I have found the following: Per Nordlöw snippets for D
Emacs Support for Curly Bracket Programming Languages	The d-mode is based on the CC Mode. The CC Mode, a collection of libraries, provides support for several <u>curly-bracket programming</u> <u>languages</u> like C, C++, Java, Objective-C, Pike, AWK and it also applies to D. Several features of the CC Mode are used for the D support, so it's useful to be aware of them.
GNU Emacs CC Mode Manual	D is a <u>curly-bracket programming language</u> and therefore supported by Emacs CC Mode.  It controls:  • whether hard tabs or spaces are used: indent-tabs-mode  • the number of columns per tab: tab-width  • the <u>indentation style</u> (see <u>indentation style meanings</u> ): c-default-style a-list with an entry for D  PEL provides user options to activate the use of D in Emacs (pel-use-D) and user options for the tab, style to use and what CC modes are activated by default.
GNU Emacs Manual - C and Related Modes	The main Emacs manual also provides information on the support for C and similar programming languages, and these apply to the D programming language as well. The sections include:  • Motion in C  • Electric C  • Hungry Delete  • Other C Commands