

Usage guide for ctags

What is ctags?

- Unix command that makes database of programming sources's tag (ex. Global variable, function definition, macro declaration)
- We can recognize where function and variable are using tags file.

Generate tags file

- **Command ctags -R *** on pintos/src directory.
 - Then ctags create tags file.

```
@csp9:~/pintos/src$ ctags -R *
@csp9:~/pintos/src$ ls -al
total 232
drwxr-xr-x 12          4096 Oct  5 00:46 .
drwxr-xr-x  3          4096 Aug 28 2011 ..
-rw-r--r--  1          1868 Oct  5 00:46 cscope.files
drwxr-xr-x  2          4096 Sep  8 04:32 devices
drwxr-xr-x  3          4096 Dec 28 2009 examples
drwxr-xr-x  2          4096 Sep  8 04:29 filesys
-rw-r--r--  1          34   Dec 28 2009 .gitignore
drwxr-xr-x  4          4096 Dec 28 2009 lib
-rw-r--r--  1          4621 Dec 28 2009 LICENSE
-rw-r--r--  1          1664 Dec 28 2009 Make.config
-rw-r--r--  1          628  Dec 28 2009 Makefile
-rw-r--r--  1          3810 Dec 28 2009 Makefile.build
-rw-r--r--  1          333  Dec 28 2009 Makefile.kernel
-rw-r--r--  1          1551 Dec 28 2009 Makefile.userprog
drwxr-xr-x  2          4096 Dec 28 2009 misc
-rw-r--r--  1          151552 Oct  5 00:48 tags
drwxr-xr-x  8          4096 Dec 28 2009 tests
drwxr-xr-x  3          4096 Sep 21 02:32 threads
drwxr-xr-x  2          4096 Sep  8 04:29 userprog
drwxr-xr-x  2          4096 Sep 19 00:26 utils
drwxr-xr-x  2          4096 Sep  8 04:29 vm
```

Register tags file at .vimrc

- Add line at .vimrc file

```
71 set tags=./tags;
72
~/.vimrc [+]
```

- Then when launch vim, it finds tags file.

Shortcuts when using ctags on vim

- **Ctrl +]**

- Go to declaration point of function or variable.

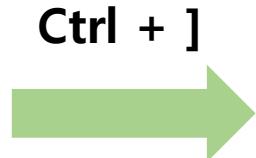
- **Ctrl + t**

- Go back previous tags or code.

- **Google it to see more commands or shortcuts.**

Example

```
103 /* Starts preemptive thread scheduling by enabling interrupts.  
104     Also creates the idle thread. */  
105 void  
106 thread_start (void)  
107 {  
108     /* Create the idle thread. */  
109     struct semaphore start_idle;  
110     sema_init (&start_idle, 0);  
111     thread_create ("idle", PRI_MIN, idle, &start_idle);  
112  
113     /* Start preemptive thread scheduling. */  
114     intr_enable ();  
115  
116     /* Wait for the idle thread to initialize idle_thread. */  
117     sema_down (&start_idle);  
118 }
```



```
165 tid_t  
166 thread_create (const char *name, int priority,  
167                  thread_func *function, void *aux)  
168 {  
169     struct thread *t;  
170     struct kernel_thread_frame *kf;  
171     struct switch_entry_frame *ef;  
172     struct switch_threads_frame *sf;  
173     tid_t tid;  
174     enum intr_level old_level;  
175  
176     ASSERT (function != NULL);  
177  
178     /* Allocate thread. */  
179     t = palloc_get_page (PAL_ZERO);  
180     if (t == NULL)  
181         return TID_ERROR;  
182  
183     /* Initialize thread. */  
184     init_thread (t, name, priority);  
185     tid = t->tid = allocate_tid ();
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Ctrl + t



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