Computer Architecture Lab.

Lab Session FAQ 01

Contents

- **Search command in Vim**
- **Quit without save command in Vim**
- **Swap file**
- **Makefile**

Search command in Vim

- **You can search a pattern with "/(pattern)" command in normal mode**

- **Press 'n' to search next matching pattern**

- **Press 'shift + n' to search previous matching pattern**

Search command in Vim

- **Ex) Search "bitAnd"**
  - **Type "/bitAnd" in normal mode**

```
 1 /*
 2  * CS:APP Data Lab
 3  *
 4  * <Please put your name and userid here>
 5  *
 6  * bits.c - Source file with your solutions to the Lab.
 7  *          This is the file you will hand in to your instructor.
 8  *
 9  * WARNING: Do not include the <stdio.h> header; it confuses the dlc
10  * compiler. You can still use printf for debugging without including
11  * <stdio.h>, although you might get a compiler warning. In general,
12  * it's not good practice to ignore compiler warnings, but in this
13  * case it's OK.
14  */
15
16 #if 0
17 /*
18  * Instructions to Students:
19  *
20  * STEP 1: Read the following instructions carefully.
21  */
22
23 You will provide your solution to the Data Lab by
24 editing the collection of functions in this source file.
25
26 INTEGER CODING RULES:
/bitAnd
```

Search command in Vim

- ## Ex) Search "bitAnd"
  - ### Press enter, then you can search the pattern

```
155    explicitly includes a system header.  GCC knows the name of this
156    header in order to preinclude it.  */
157 /* glibc's intent is to support the IEC 559 math functionality, real
158    and complex.  If the GCC (4.9 and later) predefined macros
159    specifying compiler intent are available, use them to determine
160    whether the overall intent is to support these features; otherwise,
161    presume an older compiler has intent to support these features and
162    define these macros by default.  */
163 /* wchar_t uses ISO/IEC 10646 (2nd ed., published 2011-03-15) /
164    Unicode 6.0.  */
165 /* We do not support C11 <threads.h>.  */
166 /*
167  * bitAnd - x&y using only ~ and |
168  *    Example: bitAnd(6, 5) = 4
169  *    Legal ops: ~ |
170  *    Max ops: 8
171  *    Rating: 1
172  */
173 int bitAnd(int x, int y) {
174   return 2;
175 }
176 /*
177  * getByte - Extract byte n from word x
178  *    Bytes numbered from 0 (LSB) to 3 (MSB)
179  *    Examples: getByte(0x12345678,1) = 0x56
180  *    Legal ops: ! ~ & ^ | + << >>
                                                           167,4          50%
```

Quit without saving command in Vim

- **You can escape vim editor without save with ":q!" command in normal mode**

Swap file

- **If you open a file with vim editor, the swap file for that file is automatically generated**

- **The swap file backups every modification of original file**

- **If your editor is terminated abnormally, you can recover your modification by following step**
  - **Open the file with vim editor**
  - **Press 'R' (This means recover)**
  - **Save the file using ":wq" command**
  - **Remove swap file**

Swap file

- **Ex)**
  - **Your machine will print recover menu if the swap file exists**
  - **Press 'R' and 'enter', then you can recover the file**
  - **Save it with ":wq" command**

```
E325: ATTENTION
Found a swap file by the name ".bits.c.swp"
          owned by: shjeon    dated: Mon Sep 12 22:19:03 2016
         file name: ~shjeon/CS230/datalab-handout/bits.c
          modified: no
         user name: shjeon    host name: shjeon-desktop
        process ID: 18444 (still running)
While opening file "bits.c"
             dated: Mon Sep 12 21:59:47 2016

(1) Another program may be editing the same file.  If this is the case,
    be careful not to end up with two different instances of the same
    file when making changes.  Quit, or continue with caution.
(2) An edit session for this file crashed.
    If this is the case, use ":recover" or "vim -r bits.c"
    to recover the changes (see ":help recovery").
    If you did this already, delete the swap file ".bits.c.swp"
    to avoid this message.

Swap file ".bits.c.swp" already exists!
[O]pen Read-Only, (E)dit anyway, (R)ecover, (Q)uit, (A)bort:
```

Swap file

- **Ex)**
  - **After that, you have to remove swap file to make your machine do not print recover menu again**

```
→  datalab-handout ls -al
total 1280
drwxrwxr-x 2 shjeon shjeon    4096  9월 12 22:44 .
drwxrwxr-x 5 shjeon shjeon    4096  9월 12 21:55 ..
-rw-rw-r-- 1 shjeon shjeon   10114  9월 12 21:59 bits.c
-rw-r--r-- 1 shjeon shjeon    4096  9월 12 22:19 .bits.c.swp
-rw-rw-r-- 1 shjeon shjeon    2492  8월 31 23:04 bits.h
-rw-r--r-- 1 shjeon shjeon   15752  9월 20  2012 btest.c
-rw-r--r-- 1 shjeon shjeon    1006  9월 14  2010 btest.h
-rw-rw-r-- 1 shjeon shjeon    3867  8월 31 23:04 decl.c
-rwxrwxr-x 1 shjeon shjeon 1209715  8월 31 21:35 dlc
-rw-rw-r-- 1 shjeon shjeon     259  8월 31 23:04 Driverhdrs.pm
-rw-r--r-- 1 shjeon shjeon    3630  5월 24  2011 Driverlib.pm
-rwxr-xr-x 1 shjeon shjeon   11798  4월 25  2012 driver.pl
-rw-r--r-- 1 shjeon shjeon    3009  9월 14  2006 fshow.c
-rw-r--r-- 1 shjeon shjeon    1502  9월 14  2006 ishow.c
-rw-r--r-- 1 shjeon shjeon     542 11월  2  2010 Makefile
-rw-r--r-- 1 shjeon shjeon    4564  6월  1  2011 README
-rw-rw-r-- 1 shjeon shjeon    3771  8월 31 23:04 tests.c
→  datalab-handout rm .bits.c.swp
→  datalab-handout
```

Makefile

- **Makefile is a special file which contains Linux commands**

- **If you just type "make" in your Linux command line, commands which are stored under the 'all' rule will be executed and all binaries will be compiled**