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Class: KHTN2021

## OPERATING SYSTEM LAB 2'S REPORT

### SUMMARY

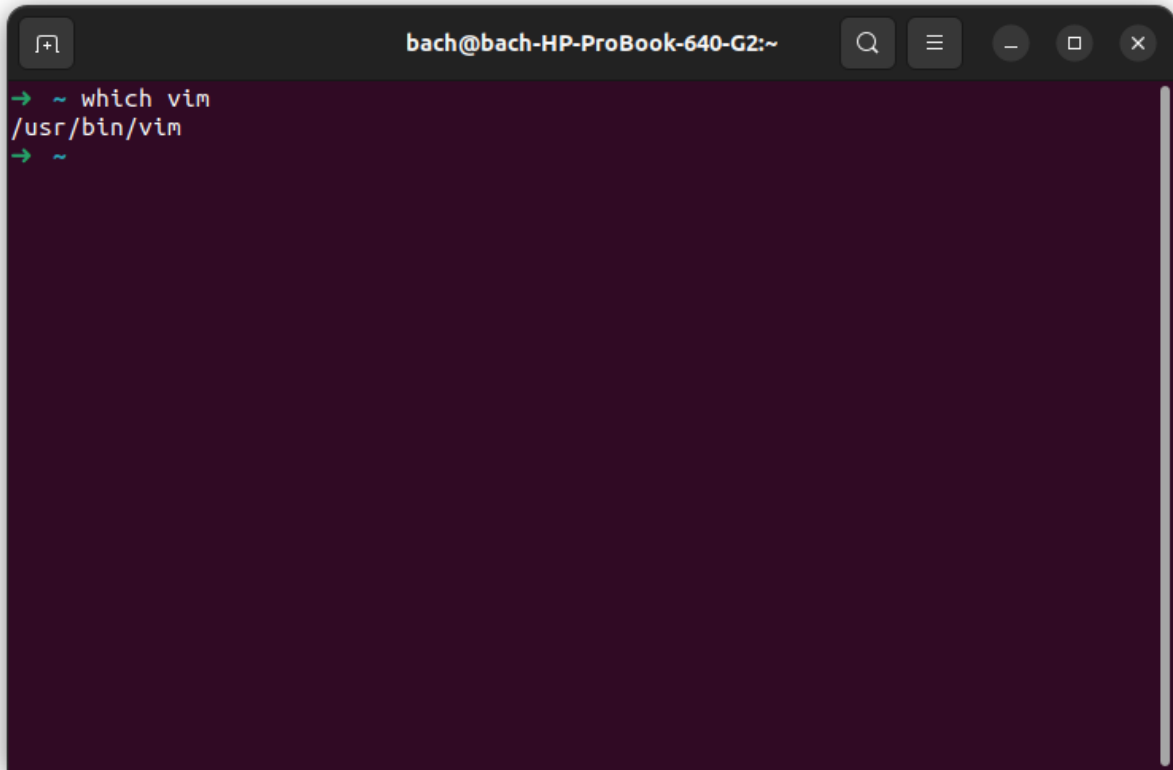
Task			Status	Page
Section 3.3	Section 3.3.1	Install Vim	Done	1
	Section 3.3.2	Install gcc	Done	3
		Run hello.c	Done	
		Run hello.c with include	Done	
	Section 3.3.3	Makefile	Done	7
	Section 2.5.4	Debugger	Done	11

Self-scores: 10

*\*Note: Export file to **PDF** and name the file by following format:  
**LAB X – <Student ID>.pdf***

## Section 3.3

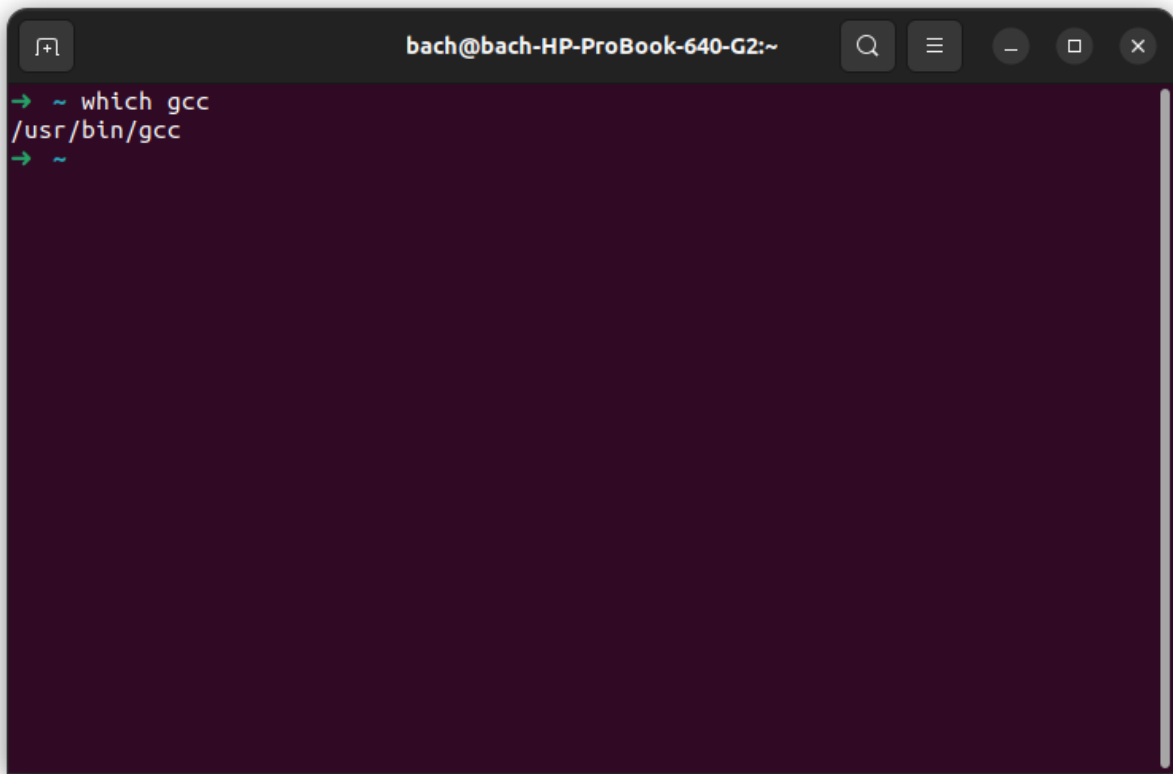
### 3.3.1. Install Vim



```
bach@bach-HP-ProBook-640-G2:~  
→ ~ which vim  
/usr/bin/vim  
→ ~
```

### 3.3.2.

#### 3.3.2.1. Install gcc



```
bach@bach-HP-ProBook-640-G2:~  
→ ~ which gcc  
/usr/bin/gcc  
→ ~
```

3.3.2.2. Run hello.c

A screenshot of a terminal window titled "vim hello.c". The window shows the source code of a C program. The code includes comments at the top identifying the author as Luong Toan Bach, followed by standard C headers and a main function that prints two lines of text. The bottom status bar indicates the file name, line count, character count, and search results.

```

/*#####
# University of Information Technology #
# IT007 Operating System #
# Luong Toan Bach, 21521845 #
# File: hello.c #
#####*/

#include <stdio.h>

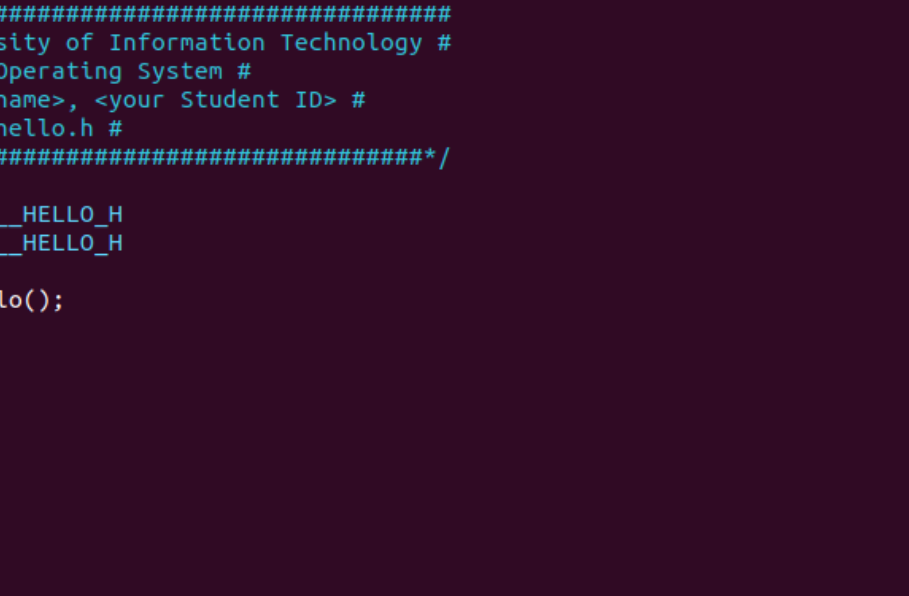
int main()
{
    printf("Hello, I am Luong Toan Bach,\n");
    printf("Welcome to IT007!\n");
return 0;
}

~
~
~
~
~
~
~
~
~
~
~

"hello.c" 15L, 319B                               15,1          All
```

```
bach@bach-HP-ProBook-640-G2:~/OS-Practice
→ OS-Practice gcc hello.c -o hello
→ OS-Practice ./hello
Hello, I am Luong Toan Bach,
Welcome to IT007!
→ OS-Practice
```

### 3.3.2.3. Run hello with include



```
vim hello.h

/*#####
# University of Information Technology #
# IT007 Operating System #
# <Your name>, <your Student ID> #
# File: hello.h #
#####*/

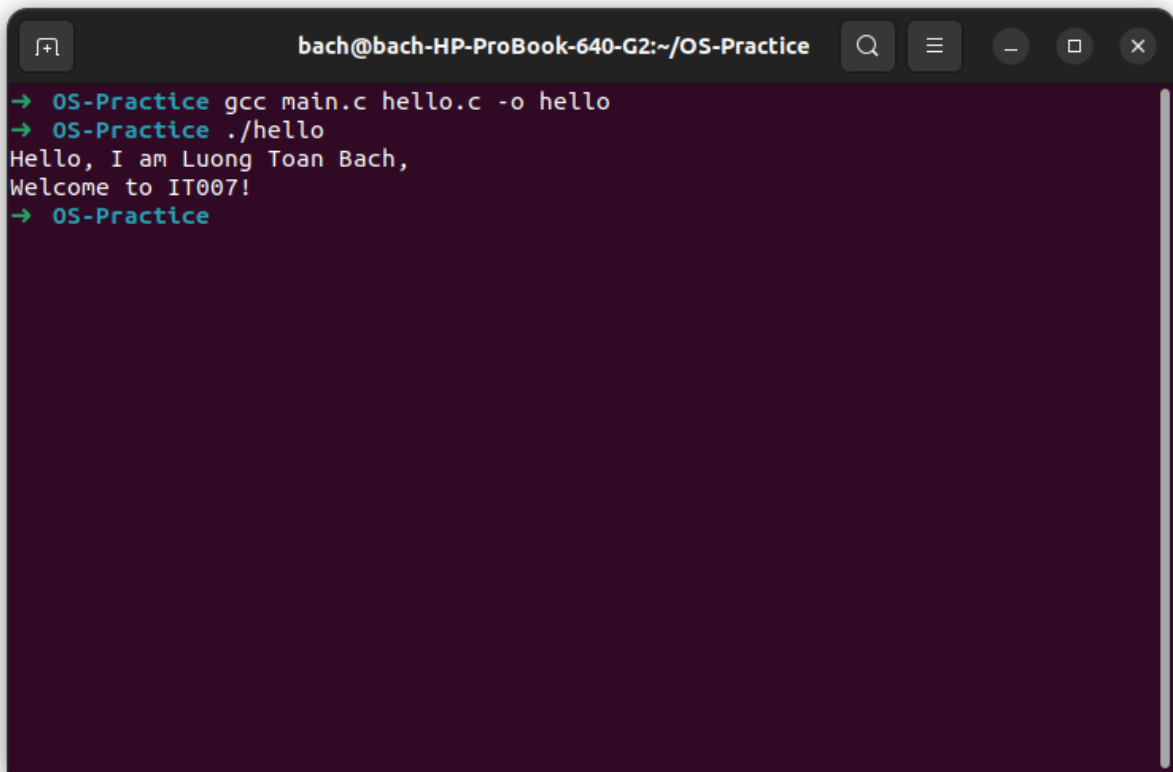
#ifndef __HELLO_H
#define __HELLO_H

void hello();

#endif
~
~
~
~
~
~
~
~
~
~
"hello.h" 13L, 263B 13,1 All
```

[illegible]



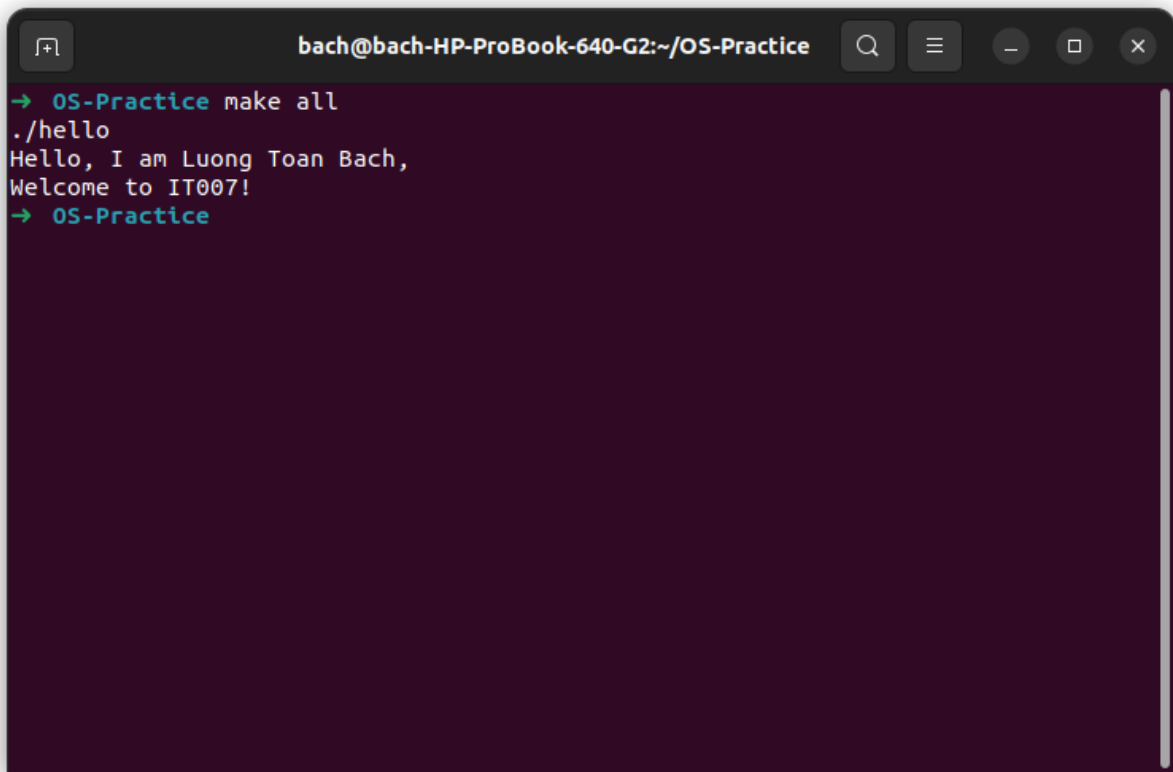


```
bach@bach-HP-ProBook-640-G2:~/OS-Practice
→ OS-Practice gcc main.c hello.c -o hello
→ OS-Practice ./hello
Hello, I am Luong Toan Bach,
Welcome to IT007!
→ OS-Practice
```

### 3.3.3. Makefile



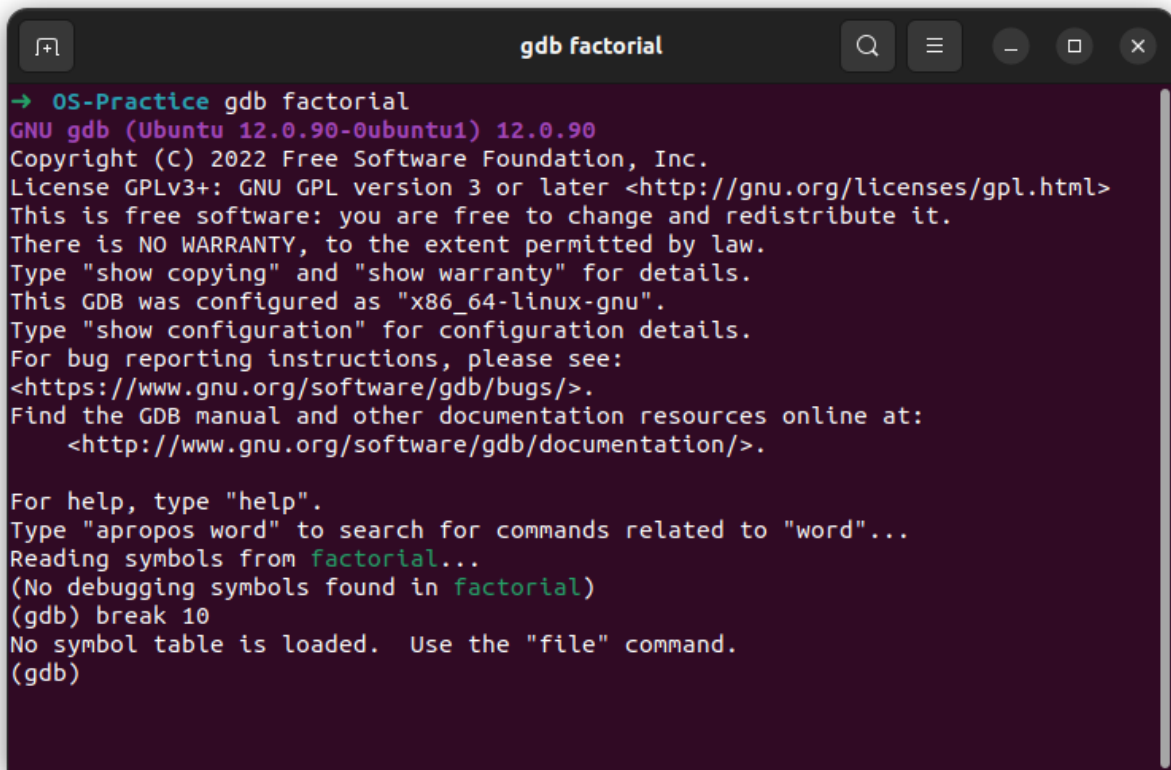




A terminal window with a dark background and light-colored text. The window title bar shows the user 'bach' on a machine named 'bach-HP-ProBook-640-G2' in the directory '~/OS-Practice'. The terminal content shows a prompt '→ OS-Practice' followed by the command 'make all'. The output of the command is './hello' followed by two lines of text: 'Hello, I am Luong Toan Bach,' and 'Welcome to IT007!'. The prompt '→ OS-Practice' appears again at the end of the output.

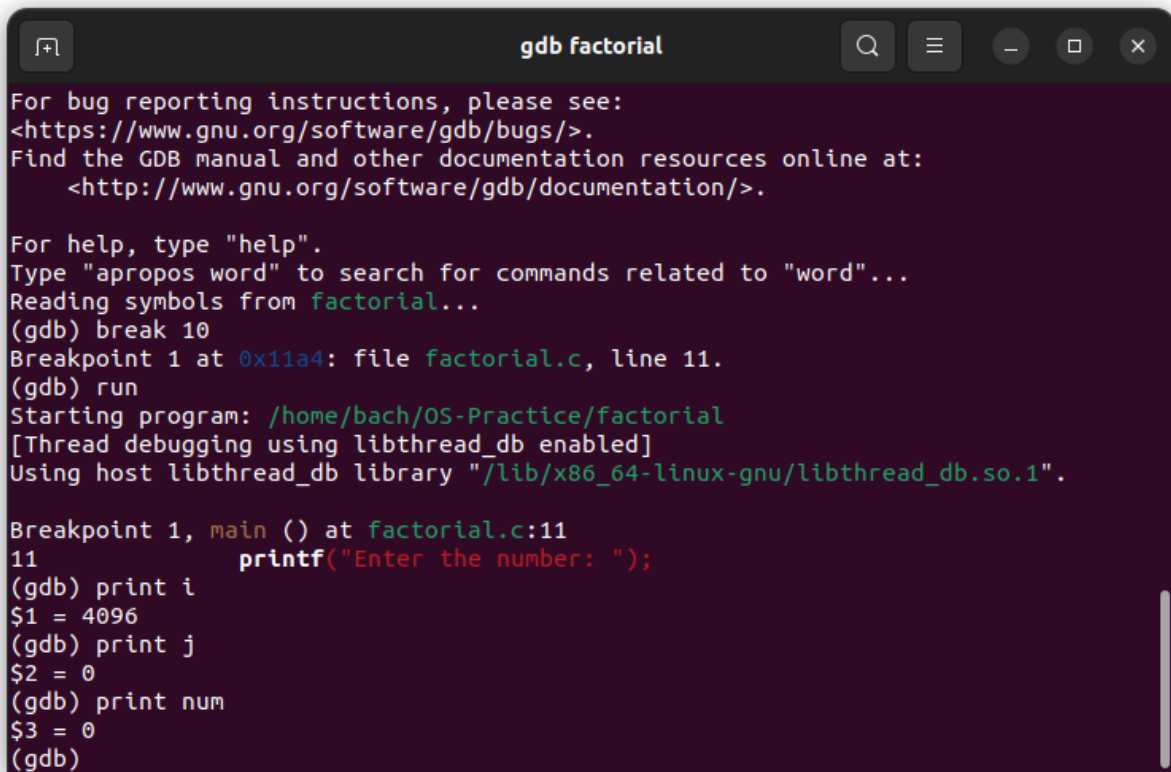
```
bach@bach-HP-ProBook-640-G2:~/OS-Practice
→ OS-Practice make all
./hello
Hello, I am Luong Toan Bach,
Welcome to IT007!
→ OS-Practice
```

#### 3.3.4. Debugger



```
→ OS-Practice gdb factorial
GNU gdb (Ubuntu 12.0.90-0ubuntu1) 12.0.90
Copyright (C) 2022 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.
Type "show copying" and "show warranty" for details.
This GDB was configured as "x86_64-linux-gnu".
Type "show configuration" for configuration details.
For bug reporting instructions, please see:
<https://www.gnu.org/software/gdb/bugs/>.
Find the GDB manual and other documentation resources online at:
  <http://www.gnu.org/software/gdb/documentation/>.

For help, type "help".
Type "apropos word" to search for commands related to "word"...
Reading symbols from factorial...
(No debugging symbols found in factorial)
(gdb) break 10
No symbol table is loaded.  Use the "file" command.
(gdb)
```



```
gdb factorial

For bug reporting instructions, please see:
<https://www.gnu.org/software/gdb/bugs/>.
Find the GDB manual and other documentation resources online at:
  <http://www.gnu.org/software/gdb/documentation/>.

For help, type "help".
Type "apropos word" to search for commands related to "word"...
Reading symbols from factorial...
(gdb) break 10
Breakpoint 1 at 0x11a4: file factorial.c, line 11.
(gdb) run
Starting program: /home/bach/OS-Practice/factorial
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".

Breakpoint 1, main () at factorial.c:11
11      printf("Enter the number: ");
(gdb) print i
$1 = 4096
(gdb) print j
$2 = 0
(gdb) print num
$3 = 0
(gdb)
```