시스템프로그래밍 3분반 2번째 과제 32203660 이현정

1.1 Make a file using vi editor that contains your favorite poem

: 분홍색 펜으로 표시한 부분으로 나태주 시인의 '내가 너를' 시를 작성하였습니다.

1.2 Make a snapshot that - has at least 10 commands (e.g. ls –l, ps, pipe, redirection, …)

including compilation practice (e.g. gcc, as, gdb, …)

: 노란색 펜으로 표시한 부분으로 vi, more, cat, gcc, ls, as, hexdump, gdb, grep, ps, pipe(|), redirection(<) 등 이용하였습니다.

- shows student's ID and date (using whoami and date)

: 하늘색 펜으로 표시한 부분입니다.

```
login as: sys32203660
sys32203660@220.149.236.2's password:
Welcome to Ubuntu 16.04.4 LTS (GNU/Linux 4.15.0-122-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

142 packages can be updated.
2 updates are security updates.

New release '18.04.6 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Tue Sep 28 21:00:02 2021 from 211.176.69.65
sys32203660@embedded:~$ vi my_favorite_poem.txt
sys32203660@embedded:~$ more my_favorite_poem.txt
내 가 너 를
얼 마 나 좋 아 하 는 지
너 는 몰 라 도 된 다

너 를 좋 아 하 는 마 음 은
오 로 지 나 의 것 이 요 .
나 의 그 리 움 은
나 혼 자 만 의 것 으 로 도
차 고 넘 치 니 까 ... ...

나 는 이 제
너 없 이 도 너 를
좋 아 할 수 있 다 .
sys32203660@embedded:~$ vi test.c
sys32203660@embedded:~$ cat test.c
#include <stdio.h>

int main() {
        int a = 10, b = 5;
        printf("a+b : %d\n", a+b);
}
sys32203660@embedded:~$ cat test.c > test_copy.c
sys32203660@embedded:~$ more test_copy.c
#include <stdio.h>

int main() {
        int a = 10, b = 5;
        printf("a+b : %d\n", a+b);
}
sys32203660@embedded:~$ gcc -S test.c
sys32203660@embedded:~$ ls
examples.desktop  my_favorite_poem.txt  test.c  test_copy.c  test.s
sys32203660@embedded:~$ as -o test.o test.c
test.c: Assembler messages:
test.c:3: Error: unknown vector operation: `{'
test.c:4: Error: invalid character '=' in operand 1
test.c:5: Error: invalid character '(' in mnemonic
test.c:6: Error: junk at end of line, first unrecognized character is `}'
sys32203660@embedded:~$ as -o test.o test.s
sys32203660@embedded:~$ ls
examples.desktop  my_favorite_poem.txt  test.c  test_copy.c  test.o  test.s
sys32203660@embedded:~$ gcc -o test.out test.c
sys32203660@embedded:~$ ./test.out
a+b : 15
```

```
sys32203660@embedded: ~

sys32203660@embedded:~$ ./test.out
a+b : 15
sys32203660@embedded:~$ hexdump test.o
0000000 457f 464c 0101 0001 0000 0000 0000 0000
0000010 0001 0003 0001 0000 0000 0000 0000 0000
0000020 01bc 0000 0000 0000 0034 0000 0000 0028
0000030 000b 0008 8955 83e5 18ec e483 b8f0 0000
0000040 0000 c083 830f 0fc0 e8c1 c104 04e0 c429
0000050 45c7 0afc 0000 c700 f845 0005 0000 458b
0000060 03f8 fc45 4489 0424 04c7 0024 0000 e800
0000070 fffc ffff c3c9 2b61 2062 203a 6425 000a
0000080 4700 4343 203a 4728 554e 2029 2e33 2e34
0000090 2036 4428 6265 6169 206e 2e33 2e34 2d36
00000a0 2935 0000 0000 0000 0000 0000 0000 0000
00000b0 0000 0000 0001 0000 0000 0000 0000 0000
00000c0 0004 fff1 0000 0000 0000 0000 0000 0000
00000d0 0003 0001 0000 0000 0000 0000 0000 0000
00000e0 0003 0003 0000 0000 0000 0000 0000 0000
00000f0 0003 0004 0000 0000 0000 0000 0000 0000
0000100 0003 0005 0000 0000 0000 0000 0000 0000
0000110 0003 0006 0000 0000 0000 0000 0000 0000
0000120 0003 0007 0008 0000 0000 0000 0042 0000
0000130 0012 0001 000d 0000 0000 0000 0000 0000
0000140 0010 0000 7400 7365 2e74 0063 616d 6e69
0000150 7000 6972 746e 0066 0037 0000 0501 0000
0000160 003c 0000 0902 0000 2e00 7973 746d 6261
0000170 2e00 7473 7472 6261 2e00 6873 7473 7472
0000180 6261 2e00 6572 2e6c 6574 7478 2e00 6164
0000190 6174 2e00 7362 0073 722e 646f 7461 0061
00001a0 6e2e 746f 2e65 4e47 2d55 7473 6361 006b
00001b0 632e 6d6f 656d 746e 0000 0000 0000 0000
00001c0 0000 0000 0000 0000 0000 0000 0000 0000
*
00001e0 0000 0000 001f 0000 0001 0000 0006 0000
00001f0 0000 0000 0034 0000 0042 0000 0000 0000
0000200 0000 0000 0001 0000 0000 0000 001b 0000
0000210 0009 0000 0040 0000 0000 0000 0158 0000
0000220 0010 0000 0009 0000 0001 0000 0004 0000
0000230 0008 0000 0025 0000 0001 0000 0003 0000
0000240 0000 0000 0076 0000 0000 0000 0000 0000
0000250 0000 0000 0001 0000 0000 0000 002b 0000
0000260 0008 0000 0003 0000 0000 0000 0076 0000
0000270 0000 0000 0000 0000 0000 0000 0001 0000
0000280 0000 0000 0030 0000 0001 0000 0002 0000
0000290 0000 0000 0076 0000 000a 0000 0000 0000
00002a0 0000 0000 0001 0000 0000 0000 0038 0000
00002b0 0001 0000 0000 0000 0000 0000 0080 0000
00002c0 0000 0000 0000 0000 0000 0000 0001 0000
00002d0 0000 0000 0048 0000 0001 0000 0030 0000
00002e0 0000 0000 0080 0000 0023 0000 0000 0000
00002f0 0000 0000 0001 0000 0001 0000 0011 0000
0000300 0003 0000 0000 0000 0000 0000 0168 0000
0000310 0051 0000 0000 0000 0000 0000 0001 0000
0000320 0000 0000 0001 0000 0002 0000 0000 0000
0000330 0000 0000 00a4 0000 00a0 0000 000a 0000
0000340 0008 0000 0004 0000 0010 0000 0009 0000
0000350 0003 0000 0000 0000 0000 0000 0144 0000
0000360 0014 0000 0000 0000 0000 0000 0001 0000
0000370 0000 0000
0000374
sys32203660@embedded:~$ gdb test.out
GNU gdb (Ubuntu 7.11.1-0ubuntu1~16.5) 7.11.1
Copyright (C) 2016 Free Software Foundation, Inc.
```

```
sys32203660@embedded:~$ gdb test.out
GNU gdb (Ubuntu 7.11.1-0ubuntu1~16.5) 7.11.1
Copyright (C) 2016 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:
<http://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 test.out...(no debugging symbols found)...done.
(gdb) run
Starting program: /home/3-class/sys32203660/test.out
a+b : 15
[Inferior 1 (process 5428) exited with code 011]
(gdb) quit
sys32203660@embedded:~$ grep -o a test.c | wc -l
4
sys32203660@embedded:~$ ps
  PID TTY          TIME CMD
 4564 pts/10   00:00:00 bash
 6340 pts/10   00:00:00 ps
sys32203660@embedded:~$ ls -l | sort
-rw-r--r-- 1 sys32203660 sys32203660 8980  4월  20  2016 examples.desktop
-rw-rw-r-- 1 sys32203660 sys32203660  258  9월  28 21:03 my_favorite_poem.txt
-rw-rw-r-- 1 sys32203660 sys32203660  515  9월  28 21:10 test.s
-rw-rw-r-- 1 sys32203660 sys32203660   83  9월  28 21:06 test.c
-rw-rw-r-- 1 sys32203660 sys32203660   83  9월  28 21:08 test_copy.c
-rw-rw-r-- 1 sys32203660 sys32203660  884  9월  28 21:10 test.o
-rwxrwxr-x 1 sys32203660 sys32203660 4712  9월  28 21:11 test.out
total 40
sys32203660@embedded:~$ whoami
sys32203660
sys32203660@embedded:~$ date
2021. 09. 28. (화 ) 21:17:12 KST
sys32203660@embedded:~$
```