

| How to set up programming environment

TA Introduction

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Practice Environment

- **Operating systems - Linux**
 - Open source project based operating system
 - Using Ubuntu 14.04.1
- **Compiler - GCC**
 - Using gcc 4.6.x
 - `$sudo apt-get install gcc-4.6`
- **Due date**
 - You should complete your lab assignment within a class

Practice Environment

- **Checking our class page**
 - <http://csl.skku.edu/GEDB029F14/Resources>
 - Installing VMware player and Ubuntu on your own PC
- **Rebooting on Ubuntu**
 - \$ sudo apt-get install gcc-4.6
 - \$ gcc --version
- **Let's practice**

Hello World!

```
#include <stdio.h>

int main(void) {
    printf ("hello world!\n");
    return 0;
}
```

<lab1.c>

Save as "lab1.c"

Basic Commands

- **GCC**

- Gnu C Compiler [Version 4.6.1]
- `$ gcc lab1.c`
- “a.out” is generated as a compiled output
- `$ gcc lab1.c -o lab1`
- “lab1” is generated as a compiled output

- **Linux command**

- ls -> listing files in current directory
- mv -> moving and renaming file
- cp -> copying file
- rm -> removing file

Basic Commands

```
$ ls  
$ cp lab1.c temp1.c  
$ cat lab1.c  
$ cat temp1.c  
$ rm lab1.c  
$ mv temp1.c lab1.c  
$ ls  
$ cat lab1.c
```

Type and see results

Basic Commands

- **Input & output redirection**
 - `$./a.out < input.txt > output.txt`
 - `$ cat output.txt`
- **Diff command**
 - Comparing your output with pre-uploaded sample output
 - `$ diff output.txt myoutput.txt`
 - If there is no difference, print nothing

Basic Commands

```
$ gcc lab1.c -o lab1
```

```
$ ./lab1
```

```
$ ./lab1 > myoutput.txt
```

```
$ cat myoutput.txt
```

```
$ diff myoutput.txt lab1_output1.txt
```

```
$ diff myoutput.txt lab1_output2.txt
```

C Input/Output Functions

- **C language supports several I/O functions**
 - Input functions: scanf, getchar, getc, and so on
 - Output functions: printf, putchar, putc, and so on
- **Printf**
 - Printing formatted outputs
- **Scanf**
 - Scanning formatted inputs

Input Function

```
#include <stdio.h>

int main (void) {
    char temp[10];
    scanf("%s", temp);
    printf("hello %s!\n", temp);
    return 0;
}
```

<lab2.c>

Input Function

```
$ gcc lab2.c -o lab2
$ ./lab2
$ ./lab2 < world
$ ./lab2 < world > lab2_myoutput.txt
$ cat lab2_myoutput.txt
```

Assignment

- **Simple program**
 - Print your name and student number
 - Example

```
Sung-hun Kim  
2014711660
```