

Report

수업 명 : 시스템프로그래밍

과제이름 : Basic

담당 교수님 : 김태석 교수님

학번 : 2019202032

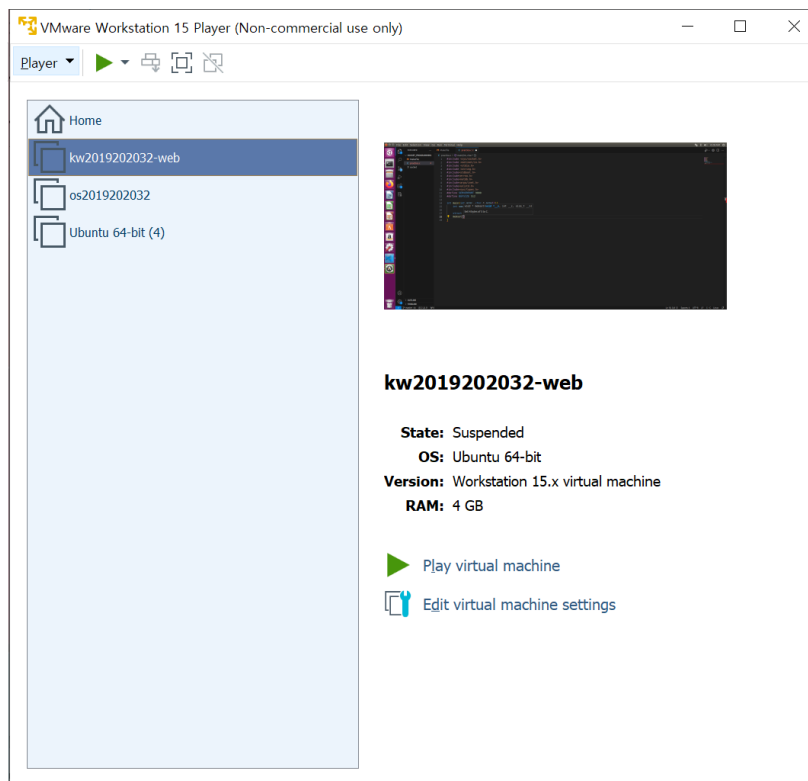
이름 : 이상현

Introduction

Basic1 과제의 경우 vmware와 ubuntu를 설치하고, 각각의 과정에 대해 설명을 하는 과제이다. Basic2 과제의 경우 Linux의 terminal에서 사용하는 여러가지 명령어를 사용하면서 각각의 명령어의 사용방법과 역할을 익히고, 해당 명령어를 실행한 과정과 결과를 캡처하고 이에 대한 설명을 작성하는 과제이다. Basic3 과제의 경우 vi editor와 makefile을 사용하여 프로그램을 작성하는 과제이다. 문제에서 요구하는 출력문을 출력하는 파일을 만들고, 복사와 붙여넣기를 통해 파일을 수정하고, 편집기에 라인을 표시하는 것을 목표로 한다. 또한 makefile을 통해 컴파일하며 문제에서 요구하는 파일명으로 파일을 실행할 수 있도록 하는 것을 목표로 한다.

결과화면

● Basic-1 Ubuntu Installation



Vmware를 처음 실행한 모습이다.

New Virtual Machine Wizard

Welcome to the New Virtual Machine Wizard
A virtual machine is like a physical computer; it needs an operating system. How will you install the guest operating system?


Install from:

☐ Installer disc:

No drives available

☒ Installer disc image file (iso):

C:\Users\wshlee\Downloads\ubuntu-16.04.5-desktop ▾ Browse...

 Ubuntu 64-bit 16.04.5 detected.
This operating system will use Easy Install. ([What's this?](#))

☐ I will install the operating system later.
The virtual machine will be created with a blank hard disk.

Help < Back Next > Cancel

Ubuntu ISO 파일 위치를 지정하면서 설치를 진행하고 있다.

New Virtual Machine Wizard

Easy Install Information
This is used to install Ubuntu 64-bit.

Personalize Linux

Full name: kw2019202032

User name: kw2019202032

Password: ●●●●

Confirm: ●●●●

Help < Back Next > Cancel

Ubuntu에서 사용자의 계정 ID와 비밀번호를 설정하는 화면이며, 계정의 ID를 문제에서 요구한 대로 kw2019202032로 설정하였다.

New Virtual Machine Wizard ✕

Name the Virtual Machine
What name would you like to use for this virtual machine?

Virtual machine name:

Location:
 Browse...

< Back Next > Cancel

가상머신의 이름과 저장할 위치를 설정하는 화면이다.

New Virtual Machine Wizard ✕

Specify Disk Capacity
How large do you want this disk to be?

The virtual machine's hard disk is stored as one or more files on the host computer's physical disk. These file(s) start small and become larger as you add applications, files, and data to your virtual machine.

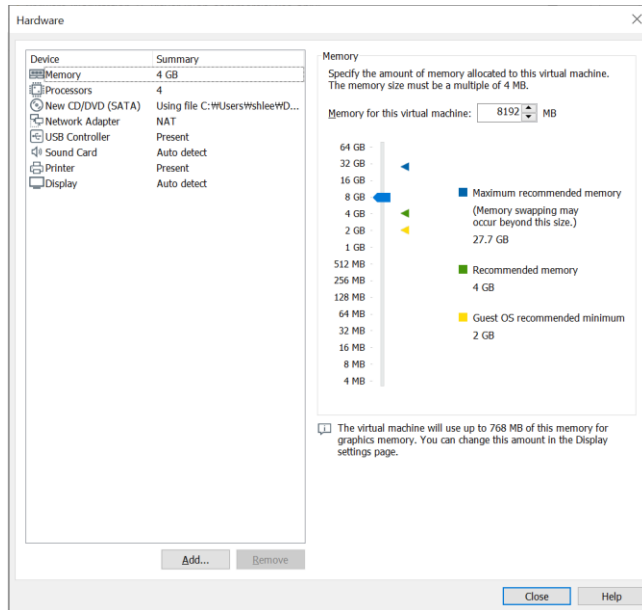
Maximum disk size (GB): ▲ ▼

Recommended size for Ubuntu 64-bit: 20 GB

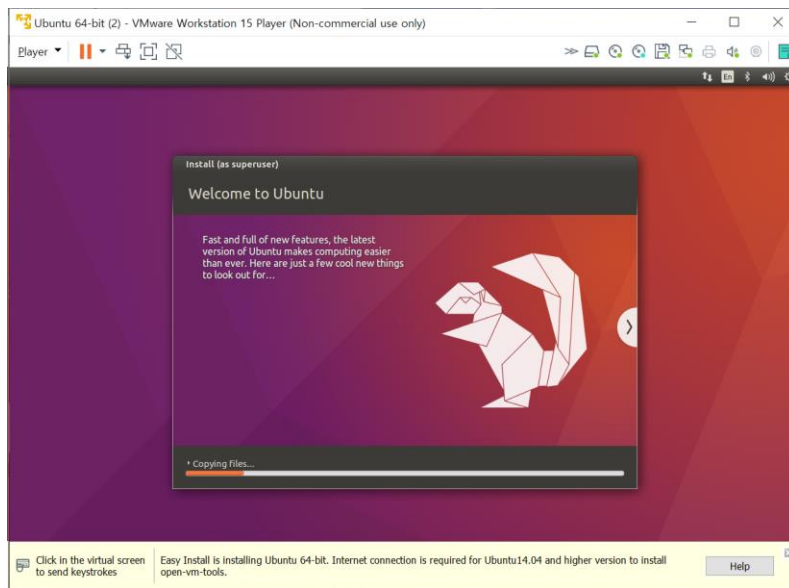
☐ Store virtual disk as a single file
☒ Split virtual disk into multiple files
 Splitting the disk makes it easier to move the virtual machine to another computer but may reduce performance with very large disks.

Help < Back Next > Cancel

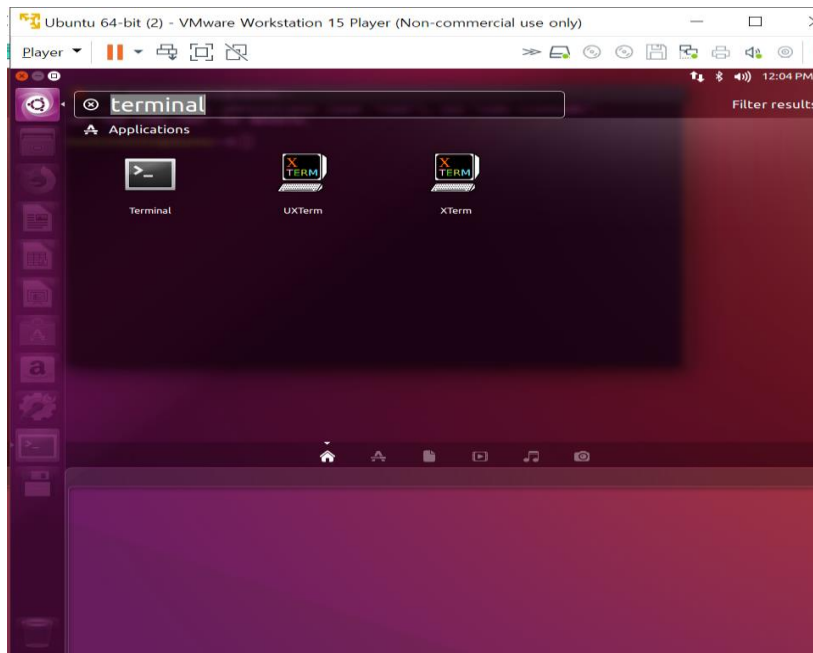
가상머신에 할당할 저장장치 크기를 설정하는 화면으로 20GB를 할당하였음을 알 수 있다.



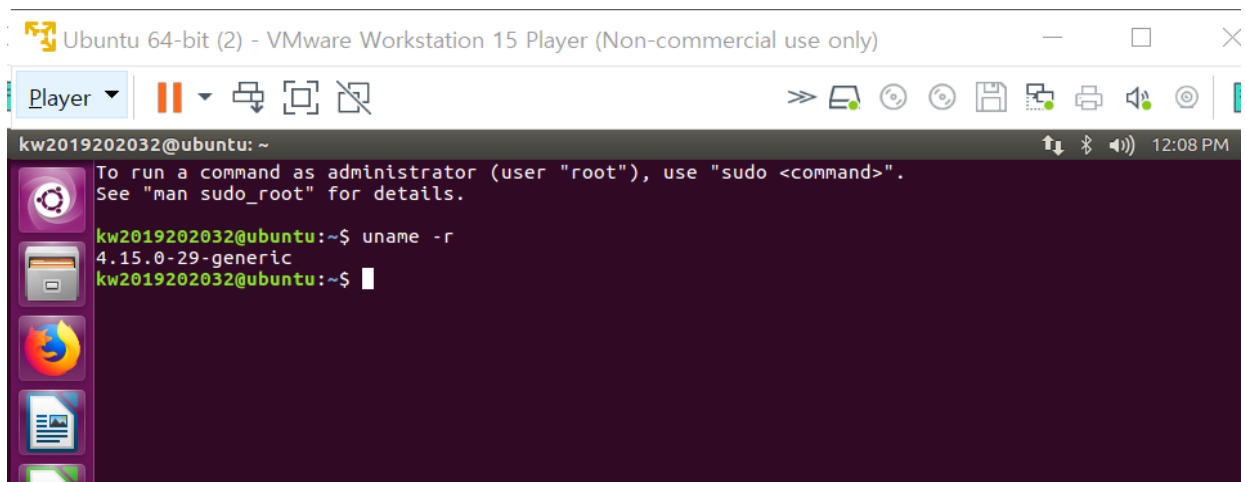
가상머신에 할당된 메인 메모리 크기, cpu 및 cpu core 수 등을 설정하는 화면이다.



위와 같은 과정을 거쳐 가상머신이 설치되고 있는 모습이다.



Terminal을 실행할 수 있는 것을 알 수 있다.



다음과 같이 kw2019202032라는 이름으로 설정되었고, uname-r의 결과를 출력하고 있는 것을 알 수 있다.

● Basic-2

- Man



```
kw2019202032@ubuntu: ~
LS(1)                                User Commands                                LS(1)

NAME
    ls - list directory contents

SYNOPSIS
    ls [OPTION]... [FILE]...

DESCRIPTION
    List information about the FILES (the current directory by default).
    Sort entries alphabetically if none of -cftuvSUX nor --sort is speci-
    fied.

    Mandatory arguments to long options are mandatory for short options
    too.

    -a, --all
        do not ignore entries starting with .

    -A, --almost-all
        do not list implied . and ..

    --author
Manual page ls(1) line 1 (press h for help or q to quit)
```

```
kw2019202032@ubuntu:~$ man -k copy
```

```
kw2019202032@ubuntu: ~
memccpy (3)      - copy memory area
memcpy (3)      - copy memory area
memmove (3)     - copy memory area
mempcpy (3)     - copy memory area
ntfscpy (8)     - copy file to an NTFS volume.
objcopy (1)     - copy and translate object files
rcp (1)         - secure copy (remote file copy program)
rsync (1)       - a fast, versatile, remote (and local) file-copying tool
scp (1)         - secure copy (remote file copy program)
ssh-copy-id (1) - use locally available keys to authorise logins on a re...
stpcpy (3)      - copy a string returning a pointer to its end
stpncpy (3)     - copy a fixed-size string, returning a pointer to its end
strcpy (3)      - copy a string
strncpy (3)     - copy a string
va_copy (3)     - variable argument lists
wcpcpy (3)      - copy a wide-character string, returning a pointer to i...
wcpncpy (3)     - copy a fixed-size string of wide characters, returning...
wcscpy (3)      - copy a wide-character string
wcsncpy (3)     - copy a fixed-size string of wide characters
wmemcpy (3)     - copy an array of wide-characters
wmemmove (3)    - copy an array of wide-characters
wmemcpy (3)     - copy memory area
x86_64-linux-gnu-objcopy (1) - copy and translate object files
```

```
kw2019202032@ubuntu:~$ man -a write
```

```
kw2019202032@ubuntu: ~  
WRITE(1) BSD General Commands Manual WRITE(1)  
  
NAME  
write - send a message to another user  
  
SYNOPSIS  
write user [tty]  
  
DESCRIPTION  
The write utility allows you to communicate with other users, by copying  
lines from your terminal to theirs.  
  
When you run the write command, the user you are writing to gets a mes-  
sage of the form:  
  
    Message from yourname@yourhost on yourtty at hh:mm ...  
  
Any further lines you enter will be copied to the specified user's termi-  
nal. If the other user wants to reply, they must run write as well.  
  
When you are done, type an end-of-file or interrupt character. The other  
user will see the message 'EOF' indicating that the conversation is over.
```

Man 명령어를 통해 리눅스에 존재하는 각종 명령어와 매뉴얼을 확인할 수 있고, 여러 옵션을 함께 사용할 수 있음을 알 수 있다.

- Ls


```

kw2019202032@ubuntu:~$ ls
2019202032 Downloads kw_hello.c Music snap
Desktop examples.desktop Makefile Pictures Templates
Documents hello microsoft.asc Public Videos
kw2019202032@ubuntu:~$ ls -a
. .dmrc .local .sudo_as_admin_successful
.. Documents Makefile Templates
2019202032 Downloads microsoft.asc Videos
.bash_history examples.desktop Music .viminfo
.bash_logout .gconf Pictures .vscode
.bashrc .gnupg .pki .wget-hsts
.cache hello .profile .Xauthority
.config .ICEauthority Public .xsession-errors
Desktop kw_hello.c snap
kw2019202032@ubuntu:~$ ls -F
2019202032 Downloads/ kw_hello.c Music/ snap/
Desktop/ examples.desktop Makefile Pictures/ Templates/
Documents/ hello* microsoft.asc Public/ Videos/
kw2019202032@ubuntu:~$ ls -al
total 152
drwxr-xr-x 18 kw2019202032 kw2019202032 4096 Mar 10 07:29 .
drwxr-xr-x 3 root root 4096 Mar 9 11:56 ..
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
-rw----- 1 kw2019202032 kw2019202032 1837 Mar 10 07:29 .bash_history
-rw-r--r-- 1 kw2019202032 kw2019202032 220 Mar 9 11:56 .bash_logout
-rw-r--r-- 1 kw2019202032 kw2019202032 3771 Mar 9 11:56 .bashrc
drwx----- 14 kw2019202032 kw2019202032 4096 Mar 9 13:02 .cache
drwx----- 16 kw2019202032 kw2019202032 4096 Mar 9 13:00 .config
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Desktop
-rw-r--r-- 1 kw2019202032 kw2019202032 25 Mar 9 12:01 .dmrc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
drwx----- 2 kw2019202032 kw2019202032 4096 Mar 9 12:48 .gconf
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:01 .gnupg
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw----- 1 kw2019202032 kw2019202032 318 Mar 9 12:01 .ICEauthority
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:01 .local
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 .pki
-rw-r--r-- 1 kw2019202032 kw2019202032 655 Mar 9 11:56 .profile
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
-rw-r--r-- 1 kw2019202032 kw2019202032 0 Mar 9 12:19 .sudo_as_admin_successful
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos
-rw----- 1 kw2019202032 kw2019202032 2775 Mar 10 07:29 .viminfo

```

Ls : 현재 위치의 디렉토리 내용을 출력하는 명령어임을 확인할 수 있다.

Ls-a : 숨겨진 파일을 포함하여 현재 위치에 존재하는 모든 디렉토리를 출력한다.

Ls-f : 파일을 파일의 종류와 함께 출력하는 명령어로 /는 디렉토리 파일을, *는 실행파일을 의미한다.

Ls-l : 각각의 사용자의 파일에 대한 쓰기, 읽기, 실행 권한 등을 포함하여 파일 정보를 함께 출력하도록 하는 명령어이다.

- Pwd

```
kw2019202032@ubuntu:~$ pwd
/home/kw2019202032
kw2019202032@ubuntu:~$
```

현재 작업하고 있는 directory의 이름을 출력한다.

- Cd

```
/home/kw2019202032
kw2019202032@ubuntu:~$ cd Documents
kw2019202032@ubuntu:~/Documents$ cd ~
kw2019202032@ubuntu:~$
```

Cd 명령어는 현재 작업 디렉토리에서 다른 디렉토리로 이동할 때 사용하는 명령어이다.

- Cat

```
kw2019202032@ubuntu:~$ cat > file1.txt
Hello This is file1
^C
kw2019202032@ubuntu:~$ cat file1.txt
Hello This is file1
kw2019202032@ubuntu:~$
```

Cat 명령어를 통해 파일을 작성하고, 파일에 작성되어 있는 내용을 출력할 수 있다.

- Chmod

```

kw2019202032@ubuntu:~$ ls -al
total 156
drwxr-xr-x 18 kw2019202032 kw2019202032 4096 Mar 10 08:26 .
drwxr-xr-x  3 root         root         4096 Mar  9 11:56 ..
-rw-rw-r--  1 kw2019202032 kw2019202032   68 Mar  9 13:12 2019202032
-rw-----  1 kw2019202032 kw2019202032 1837 Mar 10 07:29 .bash_history
-rw-r--r--  1 kw2019202032 kw2019202032  220 Mar  9 11:56 .bash_logout
-rw-r--r--  1 kw2019202032 kw2019202032 3771 Mar  9 11:56 .bashrc
drwx----- 14 kw2019202032 kw2019202032 4096 Mar  9 13:02 .cache
drwx----- 16 kw2019202032 kw2019202032 4096 Mar  9 13:00 .config
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Desktop
-rw-r--r--  1 kw2019202032 kw2019202032   25 Mar  9 12:01 .dmrc
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Documents
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Downloads
-rw-r--r--  1 kw2019202032 kw2019202032 8980 Mar  9 11:56 examples.desktop
-rw-rw-r--  1 kw2019202032 kw2019202032    0 Mar 10 08:26 feil1.txt
-rw-rw-r--  1 kw2019202032 kw2019202032   20 Mar 10 08:27 file1.txt
drwx-----  2 kw2019202032 kw2019202032 4096 Mar  9 12:48 .gconf
drwx-----  3 kw2019202032 kw2019202032 4096 Mar  9 12:01 .gnupg
-rwxrwxr-x  1 kw2019202032 kw2019202032 8608 Mar  9 23:44 hello
-rw-----  1 kw2019202032 kw2019202032   318 Mar  9 12:01 .ICEauthority
-rw-rw-r--  1 kw2019202032 kw2019202032    98 Mar  9 23:42 kw_hello.c
drwx-----  3 kw2019202032 kw2019202032 4096 Mar  9 12:01 .local
-rw-rw-r--  1 kw2019202032 kw2019202032   100 Mar  9 23:43 Makefile
-rw-rw-r--  1 kw2019202032 kw2019202032   983 Oct 24 2022 microsoft.asc
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Music
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Pictures
drwx-----  3 kw2019202032 kw2019202032 4096 Mar  9 12:59 .pkg
-rw-r--r--  1 kw2019202032 kw2019202032   655 Mar  9 11:56 .profile
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Public
drwx-----  3 kw2019202032 kw2019202032 4096 Mar  9 12:59 snap
-rw-r--r--  1 kw2019202032 kw2019202032    0 Mar  9 12:19 .sudo_as_admin_successful
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Templates
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Videos
-rw-----  1 kw2019202032 kw2019202032 2950 Mar 10 08:26 .viminfo
drwxrwxr-x  4 kw2019202032 kw2019202032 4096 Mar  9 12:59 .vscode
-rw-rw-r--  1 kw2019202032 kw2019202032   179 Mar  9 12:59 .wget-hsts
-rw-----  1 kw2019202032 kw2019202032    51 Mar  9 12:01 .Xauthority
-rw-----  1 kw2019202032 kw2019202032    82 Mar  9 12:01 .xsession-errors
kw2019202032@ubuntu:~$ chmod u-w,g-w,o-r feil1.txt
kw2019202032@ubuntu:~$ ls -l
total 80
-rw-rw-r--  1 kw2019202032 kw2019202032   68 Mar  9 13:12 2019202032
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Desktop
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Documents
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Downloads
-rw-r--r--  1 kw2019202032 kw2019202032 8980 Mar  9 11:56 examples.desktop
-r--r--r--  1 kw2019202032 kw2019202032    0 Mar 10 08:26 feil1.txt

```

User,, group, other, all 사용자에게 읽기, 쓰기, 실행 권한을 부여하거나 제거할 수 있는 명령어로 써, 위의 결과를 통해 feil1.txt 파일의 접근 권한이 변경되었음을 알 수 있다.

- Mkdir

```

kw2019202032@ubuntu:~$ ls -l
total 80
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Desktop
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
-r--r--r-- 1 kw2019202032 kw2019202032 0 Mar 10 08:26 feil1.txt
-rw-rw-r-- 1 kw2019202032 kw2019202032 20 Mar 10 08:27 file1.txt
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos
kw2019202032@ubuntu:~$ mkdir SP_lecture
kw2019202032@ubuntu:~$ ls -l
total 84
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Desktop
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
-r--r--r-- 1 kw2019202032 kw2019202032 0 Mar 10 08:26 feil1.txt
-rw-rw-r-- 1 kw2019202032 kw2019202032 20 Mar 10 08:27 file1.txt
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
drwxrwxr-x 2 kw2019202032 kw2019202032 4096 Mar 10 08:30 SP_lecture
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos

```

Mkdir 명령어를 통해 sp_lecture 이름의 디렉토리를 생성하고 있음을 알 수 있다.

- rmdir

```

kw2019202032@ubuntu:~$ ls -l
total 84
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Desktop
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
-r--r----- 1 kw2019202032 kw2019202032 0 Mar 10 08:26 feil1.txt
-rw-rw-r-- 1 kw2019202032 kw2019202032 20 Mar 10 08:27 file1.txt
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
drwxrwxr-x 2 kw2019202032 kw2019202032 4096 Mar 10 08:30 SP_lecture
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos
kw2019202032@ubuntu:~$ rmdir SP_lecture/
kw2019202032@ubuntu:~$ ls -l
total 80
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Desktop
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
-r--r----- 1 kw2019202032 kw2019202032 0 Mar 10 08:26 feil1.txt
-rw-rw-r-- 1 kw2019202032 kw2019202032 20 Mar 10 08:27 file1.txt
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos
kw2019202032@ubuntu:~$

```

rmdir 명령어를 통해 sp_lecture 디렉토리를 삭제하고 있음을 알 수 있다.

- rm


```

kw2019202032@ubuntu:~$ ls -l
total 80
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Desktop
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
-r--r----- 1 kw2019202032 kw2019202032 0 Mar 10 08:26 feil1.txt
-rw-rw-r-- 1 kw2019202032 kw2019202032 20 Mar 10 08:27 file1.txt
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos
kw2019202032@ubuntu:~$ rm -r file1.txt
kw2019202032@ubuntu:~$ ls -l
total 76
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Desktop
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
-r--r----- 1 kw2019202032 kw2019202032 0 Mar 10 08:26 feil1.txt
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos
kw2019202032@ubuntu:~$

```

rm-r 명령어를 통해 파일이나 디렉토리를 삭제할 수 있고 file1.txt 파일을 삭제했음을 알 수 있다.

- cp

```

kw2019202032@ubuntu:~$ ls -l
total 76
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Desktop
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
-r--r----- 1 kw2019202032 kw2019202032 0 Mar 10 08:26 feil1.txt
-rw-rw-r-- 1 kw2019202032 kw2019202032 0 Mar 10 08:33 file1.txt
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos
kw2019202032@ubuntu:~$ cp file1.txt file1_copy.txt
kw2019202032@ubuntu:~$ ls -l
total 76
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Desktop
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
-r--r----- 1 kw2019202032 kw2019202032 0 Mar 10 08:26 feil1.txt
-rw-rw-r-- 1 kw2019202032 kw2019202032 0 Mar 10 08:33 file1_copy.txt
-rw-rw-r-- 1 kw2019202032 kw2019202032 0 Mar 10 08:33 file1.txt
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos
kw2019202032@ubuntu:~$

```

cp 명령어를 통해 파일이나 디렉토리를 복사할 수 있고, file1.txt 파일을 복사한 file1_copy.txt 파일이 생성되었음을 알 수 있다.

- mv

```

kw2019202032@ubuntu:~$ ls -l
total 76
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Desktop
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
-r--r----- 1 kw2019202032 kw2019202032 0 Mar 10 08:26 feil1.txt
-rw-rw-r-- 1 kw2019202032 kw2019202032 0 Mar 10 08:33 file1_copy.txt
-rw-rw-r-- 1 kw2019202032 kw2019202032 0 Mar 10 08:33 file1.txt
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos
kw2019202032@ubuntu:~$ mv feil1.txt /home/kw2019202032/Desktop/ex
kw2019202032@ubuntu:~$ cd Desktop
kw2019202032@ubuntu:~/Desktop$ ls
ex
kw2019202032@ubuntu:~/Desktop$ mv ex Linux
kw2019202032@ubuntu:~/Desktop$ ls
Linux

```

mv 명령어를 통해서 파일의 위치를 바꾸거나 이름을 바꿔서 저장할 수 있다.

/home/kw2019202032에 있던 file3.txt 파일을 /home/kw2019202032/Desktop 밑에 ex라는 이름의 파일로 저장하였고, 다시 linux라는 이름으로 저장하였다.

- ln

```

kw2019202032@ubuntu:~$ cat file1.txt
Hello This is file 1
kw2019202032@ubuntu:~$ ln file1.txt filetemp.txt
kw2019202032@ubuntu:~$ cat filetemp.txt
Hello This is file 1
kw2019202032@ubuntu:~$ vi filetmep.txt
kw2019202032@ubuntu:~$ vi filetemp.txt
kw2019202032@ubuntu:~$ cat file1.txt
This is file temp after the change
kw2019202032@ubuntu:~$ cat filetemp.txt
This is file temp after the change

```



```

kw2019202032@ubuntu:~$ cat fileA.txt
This is fileA
kw2019202032@ubuntu:~$ ln -s fileA.txt fileC.txt
kw2019202032@ubuntu:~$ ls -l
total 88
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 10 08:34 Desktop
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-rw-r-- 1 kw2019202032 kw2019202032 0 Mar 10 08:37 empty.txt
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
-rw-rw-r-- 1 kw2019202032 kw2019202032 0 Mar 10 08:33 file1_copy.txt
-rw-rw-r-- 2 kw2019202032 kw2019202032 40 Mar 10 08:53 file1.txt
-rw-rw-r-- 1 kw2019202032 kw2019202032 14 Mar 14 05:03 fileA.txt
lrwxrwxrwx 1 kw2019202032 kw2019202032 9 Mar 14 05:04 fileB.txt -> fileA.txt
lrwxrwxrwx 1 kw2019202032 kw2019202032 9 Mar 14 05:05 fileC.txt -> fileA.txt
-rw-rw-r-- 2 kw2019202032 kw2019202032 40 Mar 10 08:53 filetemp.txt
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos
kw2019202032@ubuntu:~$ cat fileC.txt
This is fileA
kw2019202032@ubuntu:~$ rm fileA.txt
kw2019202032@ubuntu:~$ cat fileC.txt
cat: fileC.txt: No such file or directory

```

In 명령어를 통해 다른 파일에서 같은 파일을 가리키는 경로를 만들어 낼 수 있다. 위의 사진의 경우, filetemp.txt 라는 파일을 file1.txt를 가리키도록 하였기 때문에 filetemp.txt를 출력하여도 file1.txt에 저장되어 있는 문장이 출력되는 것을 알 수 있다. 또한 vi 명령어를 이용하여 filetemp.txt 파일에 저장되어 있는 내용을 바꿀 경우 file1.txt를 출력했을 때 출력되는 문장도 바뀌어서 출력되는 것을 알 수 있다. 이는 원본 파일의 포인터를 공유하기 때문에 일어나는 일이다.

- touch

```

kw2019202032@ubuntu:~$ ls -l
total 84
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 10 08:34 Desktop
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
-rw-rw-r-- 1 kw2019202032 kw2019202032 0 Mar 10 08:33 file1_copy.txt
-rw-rw-r-- 2 kw2019202032 kw2019202032 35 Mar 10 08:37 file1.txt
-rw-rw-r-- 2 kw2019202032 kw2019202032 35 Mar 10 08:37 filetemp.txt
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos
kw2019202032@ubuntu:~$ touch empty.txt
kw2019202032@ubuntu:~$ ls -l
total 84
-rw-rw-r-- 1 kw2019202032 kw2019202032 68 Mar 9 13:12 2019202032
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 10 08:34 Desktop
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Documents
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Downloads
-rw-rw-r-- 1 kw2019202032 kw2019202032 0 Mar 10 08:37 empty.txt
-rw-r--r-- 1 kw2019202032 kw2019202032 8980 Mar 9 11:56 examples.desktop
-rw-rw-r-- 1 kw2019202032 kw2019202032 0 Mar 10 08:33 file1_copy.txt
-rw-rw-r-- 2 kw2019202032 kw2019202032 35 Mar 10 08:37 file1.txt
-rw-rw-r-- 2 kw2019202032 kw2019202032 35 Mar 10 08:37 filetemp.txt
-rwxrwxr-x 1 kw2019202032 kw2019202032 8608 Mar 9 23:44 hello
-rw-rw-r-- 1 kw2019202032 kw2019202032 98 Mar 9 23:42 kw_hello.c
-rw-rw-r-- 1 kw2019202032 kw2019202032 100 Mar 9 23:43 Makefile
-rw-rw-r-- 1 kw2019202032 kw2019202032 983 Oct 24 2022 microsoft.asc
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Music
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Pictures
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Public
drwx----- 3 kw2019202032 kw2019202032 4096 Mar 9 12:59 snap
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Templates
drwxr-xr-x 2 kw2019202032 kw2019202032 4096 Mar 9 12:01 Videos

```

touch 명령어를 통해 비어있는 파일을 생성할 수 있고, touch 명령어를 통해 파일의 날짜와 시간을 수정할 수 있다. 위의 경우 empty.txt라는 비어있는 파일을 생성하였고, 다시한번 touch 명령어를 사용하였을 때 처음 보았던 파일의 시간이 바뀌었음을 알 수 있다.

- ps

```

kw2019202032@ubuntu:~$ ps
  PID TTY          TIME CMD
 96213 pts/1    00:00:00 bash
 96405 pts/1    00:00:00 ps
kw2019202032@ubuntu:~$ ps -ef
UID          PID    PPID  C STIME TTY          TIME CMD
root           1         0  0  04:50 ?        00:00:16 /lib/systemd/systemd --system
root           2         0  0  04:50 ?        00:00:00 [kthreadd]
root           4         2  0  04:50 ?        00:00:00 [kworker/0:0H]
root           6         2  0  04:50 ?        00:00:00 [mm_percpu_wq]
root           7         2  0  04:50 ?        00:00:00 [ksoftirqd/0]
root           8         2  0  04:50 ?        00:00:04 [rcu_sched]
root           9         2  0  04:50 ?        00:00:00 [rcu_bh]
root          10         2  0  04:50 ?        00:00:00 [migration/0]
root          11         2  0  04:50 ?        00:00:00 [watchdog/0]
root          12         2  0  04:50 ?        00:00:00 [cpuhp/0]
root          13         2  0  04:50 ?        00:00:00 [cpuhp/1]
root          14         2  0  04:50 ?        00:00:00 [watchdog/1]
root          15         2  0  04:50 ?        00:00:00 [migration/1]
root          16         2  0  04:50 ?        00:00:00 [ksoftirqd/1]
root          18         2  0  04:50 ?        00:00:00 [kworker/1:0H]
root          19         2  0  04:50 ?        00:00:00 [cpuhp/2]
root          20         2  0  04:50 ?        00:00:00 [watchdog/2]
root          21         2  0  04:50 ?        00:00:00 [migration/2]
root          22         2  0  04:50 ?        00:00:00 [ksoftirqd/2]
root          24         2  0  04:50 ?        00:00:00 [kworker/2:0H]
root          25         2  0  04:50 ?        00:00:00 [cpuhp/3]
root          26         2  0  04:50 ?        00:00:00 [watchdog/3]
root          27         2  0  04:50 ?        00:00:00 [migration/3]
root          28         2  0  04:50 ?        00:00:01 [ksoftirqd/3]
root          30         2  0  04:50 ?        00:00:00 [kworker/3:0H]
root          31         2  0  04:50 ?        00:00:00 [kdevtmpfs]
root          32         2  0  04:50 ?        00:00:00 [netns]
root          33         2  0  04:50 ?        00:00:00 [rcu_tasks_kthre]
root          34         2  0  04:50 ?        00:00:00 [kauditd]
root          36         2  0  04:50 ?        00:00:00 [khungtaskd]
root          37         2  0  04:50 ?        00:00:00 [oom_reaper]
root          38         2  0  04:50 ?        00:00:00 [writeback]
root          39         2  0  04:50 ?        00:00:00 [kcompactd0]
root          40         2  0  04:50 ?        00:00:00 [ksmd]
root          41         2  0  04:50 ?        00:00:00 [khugepaged]
root          42         2  0  04:50 ?        00:00:00 [crypto]
root          43         2  0  04:50 ?        00:00:00 [kintegrityd]
root          44         2  0  04:50 ?        00:00:00 [kblockd]
root          48         2  0  04:50 ?        00:00:00 [ata_sff]
root          49         2  0  04:50 ?        00:00:00 [md]
root          50         2  0  04:50 ?        00:00:00 [edac-poller]
root          51         2  0  04:50 ?        00:00:00 [devfreq_wq]

```

ps 명령어를 통해 현재 실행중인 프로세스의 목록과 상태를 볼 수 있다. -e 옵션과 함께 사용하면 모든 프로세스의 목록과 상태를 볼 수 있고, -f 옵션을 함께 사용하면 완전한 포맷기능을 사용할 수 있다.

- exit


```
kw2019202032@ubuntu:~$ ps
  PID TTY          TIME CMD
 8786 pts/11        00:00:00 bash
10877 pts/11        00:00:00 ps
kw2019202032@ubuntu:~$ csh
% ps
  PID TTY          TIME CMD
 8786 pts/11        00:00:00 bash
10878 pts/11        00:00:00 csh
10879 pts/11        00:00:00 ps
% exit
% exit
kw2019202032@ubuntu:~$ ps
  PID TTY          TIME CMD
 8786 pts/11        00:00:00 bash
10882 pts/11        00:00:00 ps
```

Exit 명령어를 통해 shell을 종료할 수 있다. 위의 경우 exit 명령어를 통해 c shell을 종료한 것을 마지막 ps 명령어를 통해서 알 수 있다.

- kill

```
kw2019202032@ubuntu: ~  
my name  
my name  
my name  
my name  
my name  
my name  
my name  
my name  
my name  
my name  
my name  
my name  
my name  
my name  
my name  
Terminated  
kw2019202032@ubuntu:~$
```

```
kw2019202032@ubuntu: ~  
kw2019202032@ubuntu:~$ ps -e | tail  
10341 ?      00:00:00 kworker/2:1  
10906 ?      00:00:00 kworker/u256:1  
10910 ?      00:00:09 kworker/u256:2  
10912 ?      00:00:06 kworker/u256:3  
11787 ?      00:00:08 gnome-terminal-  
11794 pts/1     00:00:00 bash  
11814 pts/1     00:00:03 yes  
11824 pts/11   00:00:00 bash  
11835 pts/11   00:00:00 ps  
11836 pts/11   00:00:00 tail  
kw2019202032@ubuntu:~$ kill 11814  
kw2019202032@ubuntu:~$ ps -e | tail  
10321 ?      00:00:00 avahi-daemon  
10341 ?      00:00:00 kworker/2:1  
10906 ?      00:00:00 kworker/u256:1  
10910 ?      00:00:10 kworker/u256:2  
10912 ?      00:00:07 kworker/u256:3  
11787 ?      00:00:13 gnome-terminal-  
11794 pts/1     00:00:00 bash  
11824 pts/11   00:00:00 bash  
11837 pts/11   00:00:00 ps  
11838 pts/11   00:00:00 tail  
kw2019202032@ubuntu:~$
```

Yes my name을 통해 my name이 무한정 출력되다가 kill명령어를 통해 my name의 출력을 멈춘 것을 알 수 있다.

```
kw2019202032@ubuntu:~$ ps
  PID TTY          TIME CMD
 11936 pts/1        00:00:00 bash
 11946 pts/1        00:00:00 ps
kw2019202032@ubuntu:~$ vi hello

[1]+  Stopped                  vi hello
kw2019202032@ubuntu:~$ ps
  PID TTY          TIME CMD
 11936 pts/1        00:00:00 bash
 11947 pts/1        00:00:00 vi
 11948 pts/1        00:00:00 ps
kw2019202032@ubuntu:~$ kill -9 11947
kw2019202032@ubuntu:~$ ps
  PID TTY          TIME CMD
 11936 pts/1        00:00:00 bash
 11949 pts/1        00:00:00 ps
[1]+  Killed                  vi hello
kw2019202032@ubuntu:~$ █
```

-9 옵션을 이용하여 process를 강제로 종료한 것을 알 수 있다.

- passwd

```
kw2019202032@ubuntu:~$ passwd
Changing password for kw2019202032.
(current) UNIX password:
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
kw2019202032@ubuntu:~$ █
```

passwd 명령어를 통해 사용자의 현재 비밀번호를 바꿀 수 있다.

- uname

```

kw2019202032@ubuntu:~$ uname
Linux
kw2019202032@ubuntu:~$ uname -r
4.15.0-29-generic
kw2019202032@ubuntu:~$ uname -m
x86_64
kw2019202032@ubuntu:~$ uname -a
Linux ubuntu 4.15.0-29-generic #31~16.04.1-Ubuntu SMP Wed Jul 18 08:54:04 UTC 2018 x86_64 x86_64 x86_64 GNU/Linux
kw2019202032@ubuntu:~$

```

uname 명령어를 통해 현재 시스템의 정보를 출력할 수 있다. -r 옵션과 함께 사용하면 커널의 배포정보를 출력한다. 또한 -m 옵션과 함께 사용하면 기계의 하드웨어 이름을 출력하며, -a 옵션과 함께 사용하면 모든 정보를 출력한다.

- Wc

```

kw2019202032@ubuntu:~$ cat file1.txt
Hello world
My name is N~~
How are you?
kw2019202032@ubuntu:~$ wc file1.txt
 3  9 40 file1.txt
kw2019202032@ubuntu:~$

```

Wc 명령어를 사용하면 파일에 존재하는 행의 수, 단어의 수, 바이트 수를 출력하는 것을 알 수 있다.

- echo

```

kw2019202032@ubuntu:~$ echo file1.txt
file1.txt
kw2019202032@ubuntu:~$ echo $HOME
/home/kw2019202032
kw2019202032@ubuntu:~$ echo ~
/home/kw2019202032

```

echo 명령어를 통해 지정한 문자열, 텍스트를 출력하고 있음을 알 수 있다. 따라서 echo file1.txt 를 입력하여 file1.txt를 출력하고, echo \$Home과 echo ~ 명령어를 통해서 경로를 출력하고 있음을 알 수 있다.

- Alias

```
kw2019202032@ubuntu:~$ alias myls='ls -al'
kw2019202032@ubuntu:~$ myls
total 160
drwxr-xr-x 18 kw2019202032 kw2019202032 4096 Mar 10 08:53 .
drwxr-xr-x  3 root          root          4096 Mar  9 11:56 ..
-rw-rw-r--  1 kw2019202032 kw2019202032   68 Mar  9 13:12 2019202032
-rw-----  1 kw2019202032 kw2019202032 2735 Mar 10 08:46 .bash_history
-rw-r--r--  1 kw2019202032 kw2019202032  220 Mar  9 11:56 .bash_logout
-rw-r--r--  1 kw2019202032 kw2019202032 3771 Mar  9 11:56 .bashrc
drwx----- 14 kw2019202032 kw2019202032 4096 Mar  9 13:02 .cache
drwx----- 16 kw2019202032 kw2019202032 4096 Mar  9 13:00 .config
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar 10 08:34 Desktop
-rw-r--r--  1 kw2019202032 kw2019202032   25 Mar  9 12:01 .dmrc
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Documents
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Downloads
-rw-rw-r--  1 kw2019202032 kw2019202032    0 Mar 10 08:37 empty.txt
-rw-r--r--  1 kw2019202032 kw2019202032 8980 Mar  9 11:56 examples.desktop
-rw-rw-r--  1 kw2019202032 kw2019202032    0 Mar 10 08:33 file1_copy.txt
-rw-rw-r--  2 kw2019202032 kw2019202032   40 Mar 10 08:53 file1.txt
-rw-rw-r--  2 kw2019202032 kw2019202032   40 Mar 10 08:53 filetemp.txt
drwx-----  2 kw2019202032 kw2019202032 4096 Mar  9 12:48 .gconf
drwx-----  3 kw2019202032 kw2019202032 4096 Mar  9 12:01 .gnupg
-rwxrwxr-x  1 kw2019202032 kw2019202032 8608 Mar  9 23:44 hello
-rw-----  1 kw2019202032 kw2019202032  318 Mar  9 12:01 .ICEauthority
-rw-rw-r--  1 kw2019202032 kw2019202032   98 Mar  9 23:42 kw_hello.c
drwx-----  3 kw2019202032 kw2019202032 4096 Mar  9 12:01 .local
-rw-rw-r--  1 kw2019202032 kw2019202032   100 Mar  9 23:43 Makefile
-rw-rw-r--  1 kw2019202032 kw2019202032  983 Oct 24 2022 microsoft.asc
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Music
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Pictures
drwx-----  3 kw2019202032 kw2019202032 4096 Mar  9 12:59 .pki
-rw-r--r--  1 kw2019202032 kw2019202032  655 Mar  9 11:56 .profile
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Public
drwx-----  3 kw2019202032 kw2019202032 4096 Mar  9 12:59 snap
-rw-r--r--  1 kw2019202032 kw2019202032    0 Mar  9 12:19 .sudo_as_admin_successful
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Templates
drwxr-xr-x  2 kw2019202032 kw2019202032 4096 Mar  9 12:01 Videos
-rw-----  1 kw2019202032 kw2019202032 3075 Mar 10 08:53 .viminfo
drwxrwxr-x  4 kw2019202032 kw2019202032 4096 Mar  9 12:59 .vscode
-rw-rw-r--  1 kw2019202032 kw2019202032  179 Mar  9 12:59 .wget-hsts
-rw-----  1 kw2019202032 kw2019202032   51 Mar  9 12:01 .Xauthority
-rw-----  1 kw2019202032 kw2019202032   82 Mar  9 12:01 .xsession-errors
kw2019202032@ubuntu:~$
```

```
kw2019202032@ubuntu:~$ alias
alias alert='notify-send --urgency=low -i "${[ $? = 0 ] && echo terminal || echo error}" "$(history
tail -n1|sed -e '\''s/^\s*[0-9]\+\s*//;s/[:&|]\s*alert$/\|'\''")'
alias egrep='egrep --color=auto'
alias fgrep='fgrep --color=auto'
alias grep='grep --color=auto'
alias l='ls -CF'
alias la='ls -A'
alias ll='ls -alF'
alias ls='ls --color=auto'
alias myls='ls -al'
kw2019202032@ubuntu:~$ unalias myls
kw2019202032@ubuntu:~$ myls
No command 'mysls' found, did you mean:
  Command 'tyls' from package 'terminology' (universe)
  Command 'mmls' from package 'sleuthkit' (universe)
mysls: command not found
```

Alias 명령어를 통해 특정 문자열을 다른 단어로 대체할 수 있다. 위의 경우 ls-al 문장을 myls 로 대체하였기 때문에 myls 문장을 통해서 해당 명령어를 수행할 수 있고, unalias 명령어를 통해 이를 해지할 수 있다.

- grep


```
kw2019202032@ubuntu:~$ cat file1.txt
Hello world
My name is N~~
How are you?
kw2019202032@ubuntu:~$ grep Hello file1.txt
Hello world
kw2019202032@ubuntu:~$ grep ar file1.txt
How are you?
kw2019202032@ubuntu:~$
```

Geo 명령어를 통해서 하나의 파일에서 찾고자하는 문자열을 찾고 해당 문자열이 포함된 문장을 출력할 수 있음을 알 수 있다.

- Basic-3

- Vi editor

[illegible]

다음과 같이 첫줄에 학번, 두번째 줄에 이름, 세번째 줄에 Kwangwoon University를 적고 학번으로 파일이름을 설정하여 저장하였음을 알 수 있다.

[illegible]

```
kw2019202032@ubuntu:~$ ls
2019202032  Documents  examples.desktop  Music      Public  Templates
Desktop     Downloads  microsoft.asc     Pictures   snap    Videos
```

- Make

Makefile을 이용하여 kw_hello.c라는 파일을 hello라는 실행 파일명으로 컴파일하도록 하였고, 이에 대한 실행결과로서 학번과 이름이 잘 출력되었음을 알 수 있다.

고찰

Basic1 과제를 수행하면서 vmware에서 ubuntu를 설치하는 과정에 대해 배울 수 있었고, 사용자의 ID와 비밀번호를 설정할 수 있다는 것을 알게 되었다.

Basic2 과제를 수행하는 과정에서 yes my name이라는 문장을 터미널에 작성하면 my name이라는 문장이 무한하게 반복 출력되는 것을 볼 수 있는데, 이 경우에는 kill이라는 명령어를 사용하여 process를 강제로 종료하여 문장 출력을 중단할 수 있다는 것을 알게 되었다. Kill 명령어를 포함하여 여러가지 명령어를 터미널에 작성하고 실행되는 과정과 수행결과를 확인함으로써 리눅스에서 제공하는 다양한 명령어에 대해 알게 되었다.

Basic3 과제를 수행하면서 makefile을 만들 때, hello 라는 이름으로 kw_hello.c 파일을 실행할 수 있도록 해야하는데, 변수 EXEC에 hello를 할당함으로써 hello를 통해 실행파일을 컴파일할 수 있다는 것을 알게되었다. 따라서 실행파일을 사용자의 선택에 따라 다양한 이름으로 컴파일할 수 있다는 것을 알게되었다. VI 과제를 수행하는 과정에서 복사하고자 하는 문장에서 yy키를 누름으로써 해당 문자열을 공백을 포함하여 복사할 수 있다는 것을 알게되었고, p 명령어를 통해 원하는 위치에 복사한 문장을 붙여넣을 수 있다는 것을 알게되었다. 복사를 수행하기 위해서 여러가지를 알아본 결과 y 명령어 이외에도 여러가지 문자열과 문자를 수정할 수 있는 명령어가 존재한다는 것을 알게되었고, 필요에 따라 알맞은 명령어를 선택하여 사용하는 것이 중요하다는 것을 알게되었다.

Reference

강의자료만을 참고하였습니다.