

SSE3044 Introduction to Operating Systems
prof. Jinkyu Jeong

Project 0. Install and boot xv6

2018.3.14 (Wed.)

TAs

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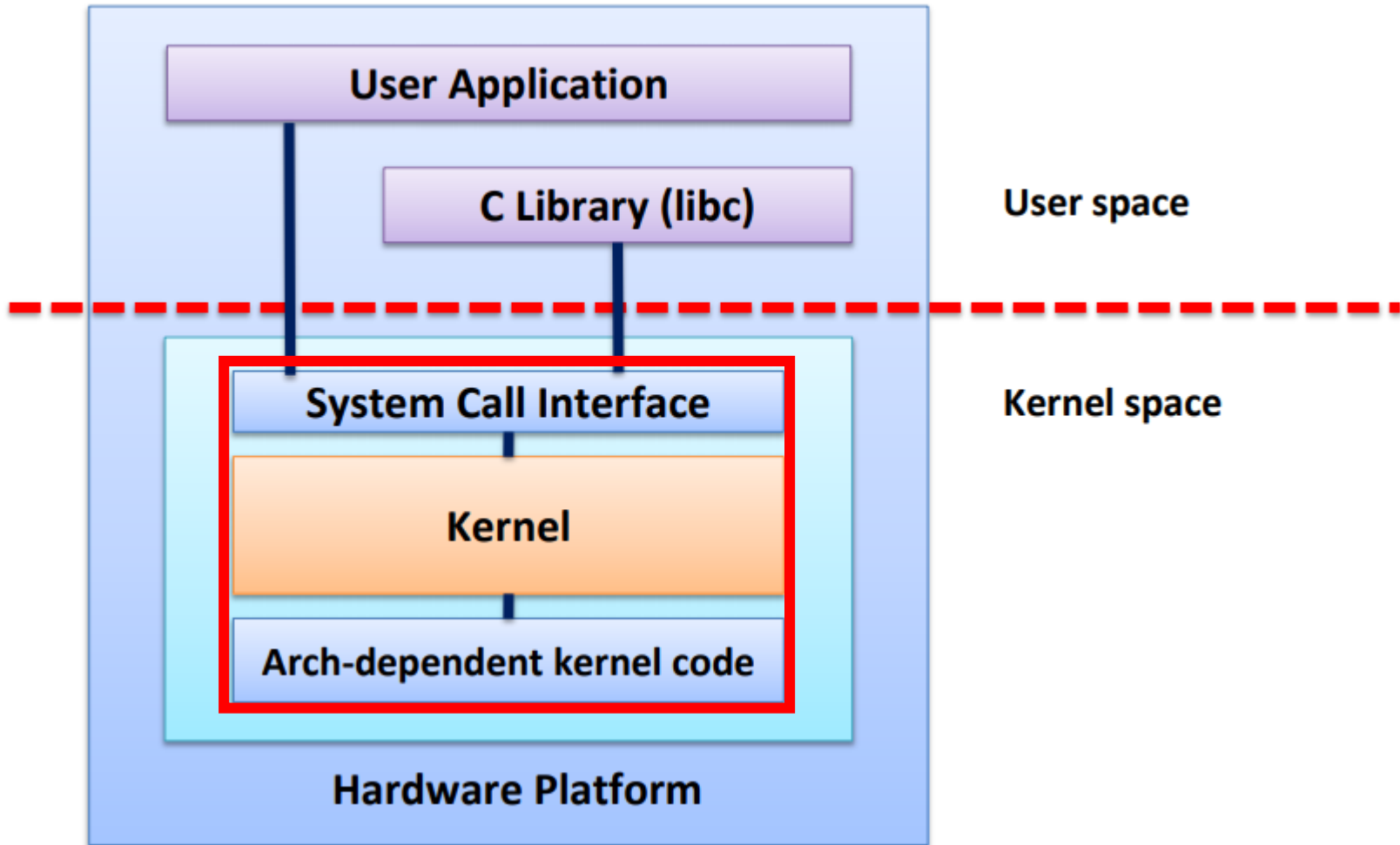
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Project plan

- Total 4 projects

- 0) Starting xv6 operating system
- 1) Process management
- 2) Virtual memory
- 3) Scheduling
- 4) Filesystem

Operating system



Operating system



xv6 operating system

- Unix-like teaching operating system developed by MIT
- Based on multiprocessor x86 system

```
cpu1: starting 1
cpu0: starting 0
sb: size 1000 nblocks 941 ninodes 200 nlog 30 logstart 2 inodestart 32 bmap start 58
init: starting sh
$ ls
.          1 1 512
..         1 1 512
README    2 2 2290
cat       2 3 13332
echo      2 4 12404
forktest  2 5 8120
grep      2 6 15152
init      2 7 12992
kill      2 8 12452
ln        2 9 12352
ls        2 10 14576
mkdir     2 11 12476
rm        2 12 12452
sh        2 13 23092
stressfs  2 14 13132
usertests 2 15 56004
wc        2 16 13980
zombie    2 17 12184
console   3 18 0
$ █
```

Boot message with ls command

How to install and run

* Install and build xv6

- 1) (Move to directory where to install xv6)
- 2) `$sudo apt install git`
- 3) `$git clone https://github.com/mit-pdos/xv6-public.git`

* Install qemu emulator

- 1) `$sudo apt install qemu`

* Run xv6

- 1) `$cd xv6-public`
- 2) `$make qemu-nox`

* Terminate xv6

- 1) `ctrl + 'A' + 'x'` (keep press all keys)

Project 0. Install and boot xv6

- Follow the instructions on slides
- Print your student id, name(mandatory), and any message(optional)

```
cpu1: starting 1
cpu0: starting 0
sb: size 1000 nblocks 941 ninodes 200 nlog 30 logstart 2 inodestart 32 bmap start 58
init: starting sh
Student ID: 201xxxxxxx
Name: Gildong Hong
=====Any Message=====
$ █
```

Submission

- Compress your code as YourStudentID-0.tar.gz
- Send your file to minwoo.ahn@csl.skku.edu
 - Please command \$make clean, before submission
- **PLEASE DO NOT COPY**
 - **YOU WILL GET F GRADE IF YOU COPIED**
- Due date: 3/20(Tue.), 23:59:59 PM
 - -25% per day for delayed submission

Tips

- Reading xv6 commentary will help you a lot
 - <http://csl.skku.edu/SSE3044S18/Resources?action=upload&upname=book-rev10.pdf>

Questions

- If you have questions, please email to TA
- You can also visit Semiconductor Building #400509
 - Please email TA before visiting

Appendix. ctags & grep

- Install ctags
 - `$sudo apt install ctags`
- Vim setting for ctags
 - `$ctags -R` (where you will use)
 - `$vi ~/.vimrc`
 - Add “set tags=[Location of tag file]/tags”
 - `$source ~/.vimrc`
- Ctags usage
 - `ctrl +]` : follow tag
 - `ctrl + t` : back to last tag
- Grep Usage
 - `grep -nR “[string to search]”`

Appendix. vi instructions

** \$sudo apt install vim

- ① vi [filename] -> Open file
- ② i -> keyboard typing mode
- ③ esc + :w -> save file
- ④ esc + :q -> exit file (esc + :wq -> save and exit)
- ⑤ /[string] -> search [string]
- ⑥ u -> back to last command
- ⑦ :vs -> open additional file on same session
- ⑧ dd -> erase one line
- ⑨ :set mouse=a -> activate mouse
 - ① Drag and y -> copy multi-line
 - ② p -> paste

* Reference: http://www.antsys.co.kr/data/vi_editor.htm