

## Assignment 1

Abhishek Agrahari

Roll No. = 190123066

### Exercise 1:

To make a system call five files have been changed:

- i) **syscall.h**: assigned system call number of 22 to SYS\_draw (line 23).
- ii) **syscall.c**: added prototype of sys\_draw function (line 106) and added a pointer [SYS\_draw] sys\_draw to syscalls array at index assigned in the syscall.h (line 130).
- iii) **sysproc.c**: implemented (int)sys\_draw(void) function (line 93 onwards) which copies an ASCII art image to a user-supplied buffer.
- iv) **user.h**: added function prototype “int draw (void\*, uint)” is added here (line 26)
- v) **usys.S**: For creating an interface for user program to access this system call SYSCALL(draw) is added(line 32).

### Exercise 2:

- Added a program **drawtest.c** inside the xv6-public directory which allocates a buffer and make a system call to get the image from the kernel and prints it to the console.
- In the **Makefile**, \_drawtest is added under UPROGS (line 184) and drawtest.c is added under EXTRA (line 254).
- Then we run **make clean** to delete previously made objective file and run **make** command to make new ones.

i) On printing wolf to the console.

```
grep      2 6 18512
init      2 7 15732
kill      2 8 15172
ln         2 9 15024
ls         2 10 17656
mkdir     2 11 15272
rm         2 12 15248
sh         2 13 27884
stressfs  2 14 16160
usertest  2 15 67268
wc         2 16 17024
zombie    2 17 14840
drawtest  2 18 15176
console   3 19 0

$ drawtest
Wolfie Size = 1563 Bytes
```

ii) on running ls command

abhishek@LAPTOP-UE6RCUDL: /mnt/c/Users/abhis/OneDrive/Desktop/xv6-public

SeaBIOS (version 1.13.0-1ubuntu1.1)

ipXE (http://ipxe.org) 00:03.0 CA00 PCI2.10 PnP PMM+1FF8CA10+1FECCA10 CA00

Booting from Hard Disk..xv6...

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 2286
cat	2 3 16292
echo	2 4 15144
forktest	2 5 9456
grep	2 6 18512
init	2 7 15732
kill	2 8 15172
ln	2 9 15024
ls	2 10 17656
mkdir	2 11 15272
rm	2 12 15248
sh	2 13 27884
stressfs	2 14 16160
usertests	2 15 67268
wc	2 16 17024
zombie	2 17 14840
drawtest	2 18 15176
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\$