CS 344: Operating Systems Lab

ASSIGNMENT 0B

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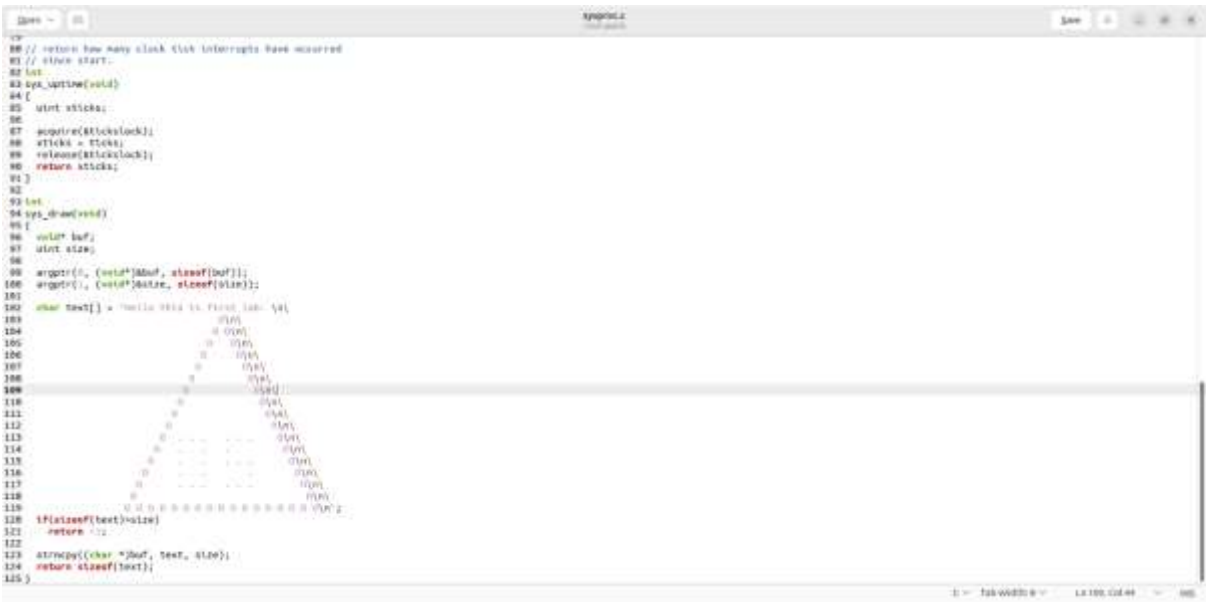
Question 1

An operating system supports two modes; the kernel mode and the user mode. When a program in user mode requires access to RAM or a hardware resource, it must ask the kernel to provide access to that particular resource. This is done via a system call. When a program makes a system call, the mode is switched from user mode to kernel mode. In order to define our own system call in xv6, changes need to be made to 5 files.

Namely, these files are as follows.

(i) syscall.h
(ii) syscall.c
(iii) sysproc.c
(iv) usys.S
(v) user.h

We implement the system call function in sysproc.c



Question 2

Now the only task left is to add a user program to call the system call that we just made above. For this, I made a file drawtest.c inside xv6 folder and wrote the following code in it.

```
1 #include "types.h"
2 #include "stat.h"
3 #include "user.h"
4
5 int
6 main(void)
7 {
8         static char buf[2000];
9         printf(1,"wolfie sys call returns %d\n",draw((void*) buf,2000));
10
11         printf(1,"%s",buf);
12         exit();
13 }
```

The following is the output.