CIS 450/ECE 478: Operating Systems

Project 1: Building xv6

January 24, 2019

Winter 2019

Honor Code: I have neither given nor received unauthorized assistance on this graded report.

x Srinivas Simhan

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Objective

- To become familiar with setting up a Virtual Machine
- To become familiar with file management using the Linux VM Terminal

Equipment Used

- Oracle VM VirtualBox
- OSProjects file (given by Professor J. Guo)

Procedure

First I downloaded the VirtualBox and installed it. Then I downloaded the Ubuntu Linux Virtual Machine Image and configured the VirtualBox to allow the “OSVM.ova” file to run. Using the given username and password, I logged into the Linux VM and opened a terminal.

In the terminal, I created a folder called “xv6” and build/compiled source code for a basic “Hello <firstName, lastName>” application. Then I executed the code, where the result came out as “Hello, my name is Srinivas Simhan” (Fig. B).

Source Code

“hello.c”

```
#include "types.h"
#include "user.h"
int
main(int argc, char *argv[])
{
printf (1, "Hello, my name is %s %s\n", argv[1], argv[2]);
exit();
}
```

Explanation of Code

The “hello.c” code was a simple C programming source code that allowed the user to input two arguments in through the main function, and would output the resulting sentence: “Hello, my name is Srinivas Simhan”.

Screenshots

Fig.A - xv6 is running

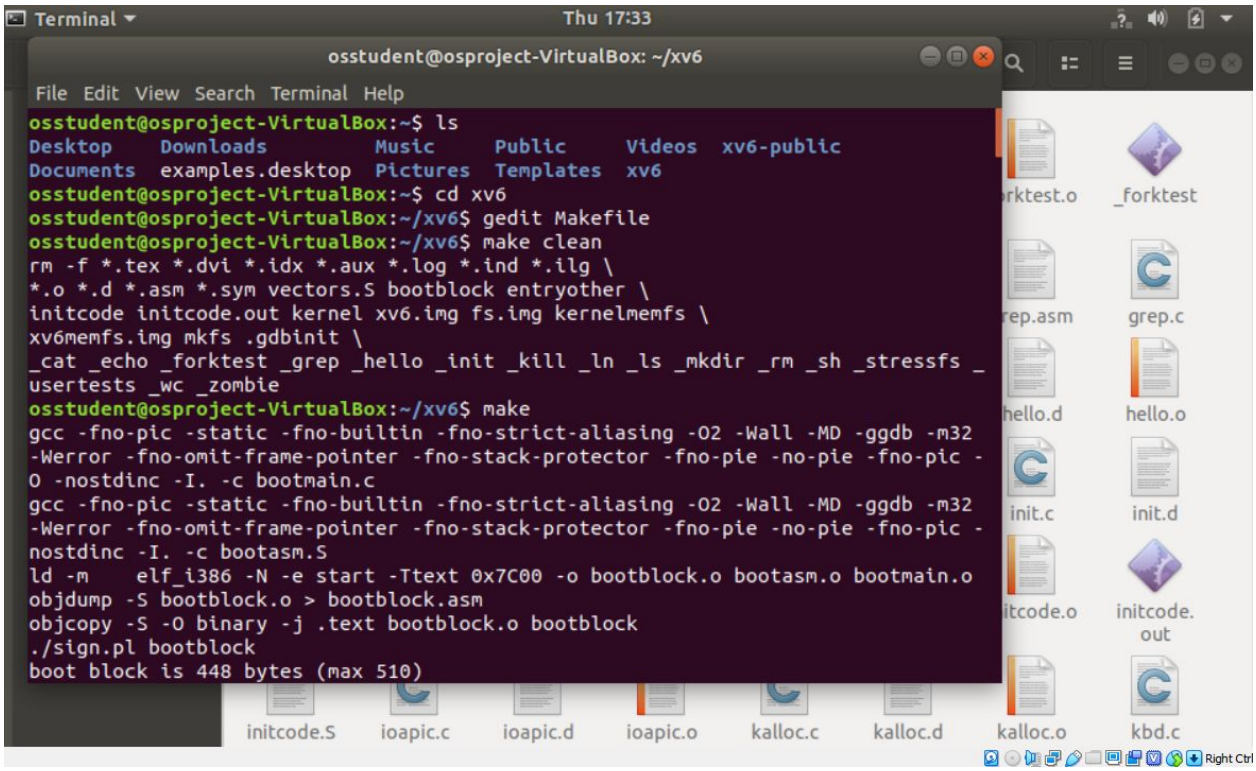
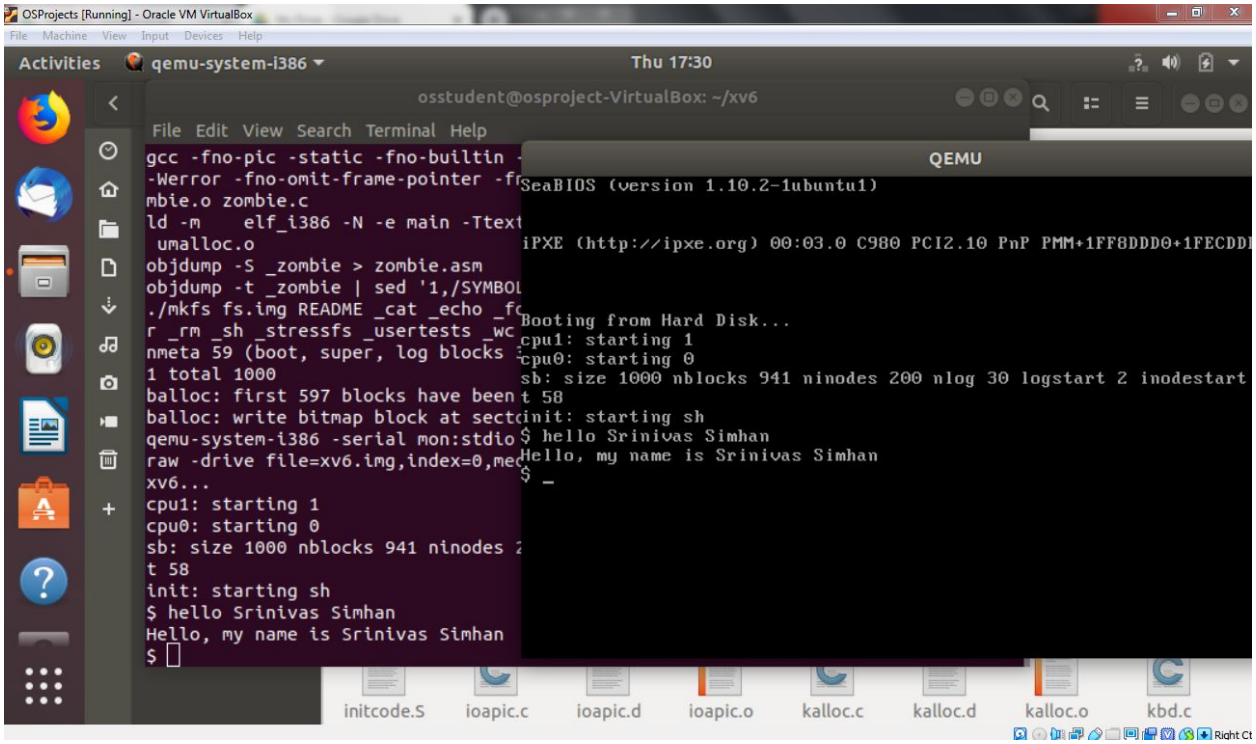


Fig. B - “hello.c” working



Reflection

In this project, we learned how to install a Virtual Machine. In this process we got to learn the names of different types of Operating Systems, and that there’s more than just Windows and macOS. Something I found really interesting was that it covers a few concepts similar to core Unix concepts, which I haven’t really needed to use for class projects since CIS 200, so it was pretty cool to get a refresher on those concepts. This operating system that we used was lightweight, in which the time to compile was very low and it allowed me to debug any issues remotely. This means that if I had any issues or needed to check something out in my notes, I could easily switch over to my Windows 10 screen, and then once I found my answer, I could switch back to the VM. Overall, I enjoyed this project, and I’m looking forward to the future projects we’ll have this semester!