Homework 1: Building ICS-OS

Objectives

At the end of this activity, you should be able to:

1. build the ICS-OS kernel and disk image;
2. run ICS-OS in QEMU and
3. run two ICS-OS commands.

1 Introduction

ICS-OS[1] is an instructional (not for production) operating system that can be used for understanding different operating system concepts discussed in the lecture. An operating system is no different from other software in that it is written in a programming language, such as C. Later in the course, you will be modifying portions of the source code of ICS-OS to apply and observe various operating system concepts. The tasks in this homework are from the ICS-OS Kernel Developer's Guide[2].

2 Prerequisites

- Ubuntu 16.04

3 Deliverables

Perform the tasks below and capture screen shots while you do them. Submit a PDF file containing the screen shots. Do not forget to put your name and laboratory section. (CREDIT: 5 Lecture Quiz Points)

4 Tasks

Task 1: Install build dependencies

A C compiler, assembler, linker, emulator, and other tools are needed to build and run ICS-OS.

```
$sudo apt-get update
$sudo apt-get install build-essential nasm qemu-kvm tcc git gcc-multilib
```

Task 2: Clone the repository

ICS-OS is hosted on Github.

```
$git clone https://github.com/srg-ics-uplb/ics-os.git
$cd ics-os/ics-os
```

[1] https://github.com/srg-ics-uplb/ics-os/
[2] https://github.com/srg-ics-uplb/ics-os/wiki/Kernel-Developer's-Guide

Task 3: Build

Building the source code for the kernel and the distribution disk is accomplished using make. Make sure you perform steps 2-4 every time you make changes in the source code.

```
$make clean
$make
$make floppy
```

Task 4: Run

```
$make run-floppy
```

Task 4: Run ICS-OS commands

Once the ics-os command prompt appears, type help. Examine the list of commands and run two commands.