CPS321 - 2025 Spring - Assignment #1

DUE DATE: Feb. 12 (Wed.) no later than 11:59 PM EST via email

REQUIREMENTS

- Each group will hand in only **one submission**.
- **Print names of all members** are required in submissions.
- The submission file should be titles: `CPS321_2025_Spring_[HW NUMBER]_[PRINT NAMES].zip/others` .
- All submissions will be sent to Fanchao (fmeng@misericordia.edu) via **emails**. Fanchao will confirm each submission.
- **Late submissions are NOT accepted** unless you have the permission from Fanchao.

Problems (100 points in total)

Run Linux 0.11/0.12 on Virtual Machine

The objective of this task is to get ourselves familiar with the typical booting procedure of OS.

Primary Steps

1. Choose a virtual machine, and install it in your own environment. QEMU is recommended. Alternatives are also acceptable.
2. Download the source code of Linux 0.11 or 0.12.
3. Set up the compilation and linking tool chain for creating the bootloader and the linux kernel image.
4. Create the bootloader and the Linux kernel.
5. Boot the Linux kernel in a virtual machine instance.
6. Describe in detail how the Linux kernel is booted, as concrete as possible. You may need to read the code and step-by-step debug the booting if necessary.

BONUS TASK

1. Print a customized piece of text, e.g., "Hello Fanchao", from the bootloader (not from the Linux kernel.) Show me the code and screenshots.

Submission

1. Evidence showing that you have successfully booted the Linux kernel in a virtual machine, e.g., screenshots.
2. A document for the booting details.