INDIAN INSTITUTE
OF TECHNOLOGY
PALAKKAD

COMPUTER SCIENCE AND ENGINEERING
Indian Institute of Technology Palakkad
CS3110: Operating Systems Lab
Lab 1

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1. Download the latest 32-bit and 64-bit `riscv elf gcc` tool chain from `https://github.com/riscv-collab/riscv-gnu-toolchain/releases`.

2. Familiarize yourself with the various utilities in the above tool chain.

3. Use simple codes to test the capabilities `ld`, `objdump`, `objcopy`, and `readelf`.

4. Try the various `gcc` flags mentioned in the lecture slides.

5. Download QEMU from `https://github.com/qemu/qemu`. Build it for RISC-V targets by following the instructions at `https://risc-v-getting-started-guide.readthedocs.io/en/latest/linux-qemu.html`.

6. Download `xv6` from `https://github.com/mit-pdos/xv6-riscv` and run it using QEMU.

7. Use your favorite editor and familiarize yourself with the `xv6` code-base.

8. Try out inline assembly in C. Visit `https://gcc.gnu.org/onlinedocs/gcc/extensions-to-the-c-language-family/how-to-use-inline-assembly-language-in-c-code.html` for more detail. Note that this links has code for x86.

9. Read about attributes in C programming. To start visit `https://medium.com/@ganga.jaiswal/attributes-in-c-programming-b93707ebd39f`

10. Read about C pre-processor directives. A good starting point is `https://pwskills.com/blog/what-are-preprocessor-directives-in-c/`

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