

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

Lab 1

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- 1. Download the latest 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 1d, 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/Using-Assembly-Language-with-C.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.jais wal/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/