University of Windsor

School of Computer Science
Faculty of Science
COMP-2560: System Programming, Fall 2022

Lec#	Date	Title	Due Date	Grade Release Date
Lec03	Week 03	**The Unix Trip**	Oct. 05, 2022, Wednesday Midnight EDT	Oct. 10, 2022

The objectives of the weekly lecture assignments (Lecs) are to practice on topics covered in the lectures as well as improving the student's *critical thinking and problem-solving skills in ad hoc topics that are closely related but not covered in the lectures*. Lecture assignments also help students with research skills, including accessing, retrieving, and evaluating information (information literacy).

Lecture Assignments Deliverables

You should answer **two questions** below using an editor like MS Word, Notepad, and the likes or pen in papers. In the latter case, you must scan the papers clearly and merge them into a **single file** `lec02_uwindid.pdf` containing your `name`, `uwinid`, `student#`. **Please note that if your answers cannot be read, you will lose marks.** Please follow the naming convention as you lose marks otherwise. Instead of `uwindid`, use your own account name, e.g., mine is `hfani@uwindsor.ca`, so my submission would be: `lec02_hfani.pdf`

Lecture Assignments

Select two questions based on your preference!

1. Is it possible to share an IRQ with multiple devices? Explain your answer.
2. What are the benefits of opcode hack?
3. **Important.** How can we prevent an application-level program from doing malicious or errant behaviour such as killing kernel, killing shell, etc.? (*hint: there is an acceptable solution for this problem amongst system-level programmers. However, any other solutions will be welcomed if fully justified.*)
4. Compare static vs. dynamic linking of library routines.
5. By example, compare closed-source programs, free programs, and open-source programs.
6. What type of linking is a system call: static or dynamic? Why?
7. **Important.** POSIX provides the specification for a standard operating system based on the C programming language. Does this mean that an operating system must be implemented in C in order to be POSIX-compliant?
8. Are standard library routines in C codes, assembly lines, or opcodes? Explain your answer.