

# Lab One

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## 1 WHAT ARE THE ADVANTAGES AND DISADVANTAGES OF USING THE SAME SYSTEM CALL INTERFACE FOR MANIPULATING BOTH FILES AND DEVICES?

The kernel treats its devices like how a file system deals with its files. This results with using the same system call interface as having an advantage in being a universal utility. User program code can be easily written to manipulate both files and devices, and writing hardware-specific code is easy to add device drivers through this ubiquitous interface.

While using the same system call interface is beneficial to its versatile use, there are circumstances where the same interface is not adaptable to both a file access API and its corresponding device drivers. So, although its a universal tool, using the same system call interface is not perfect and in those events, using this utility can risk its functionality and its performance.

## 2 WOULD IT BE POSSIBLE FOR THE USER TO DEVELOP A NEW COMMAND INTERPRETER USING THE SYSTEM CALL INTERFACE PROVIDED BY THE OPERATING SYSTEM? HOW?

Yes, using the system call interface should be able to develop a new system call interface. Just as how files and devices can be manipulated by user program code, a command interpreter can be developed in a similar way and the versatility of the general system call interface would allow the command interpreter to create and manage processes and how they communicate.

### 3 HOW IS YOUR CONSOLE LIKE THE ANCIENT TTY SUBSYSTEM IN UNIX AS DESCRIBED IN

[HTTPS://WWW.LINUXAKESSON.NET/PROGRAMMING/TTY/](https://www.linuxakesson.net/programming/tty/) ?

Our browser-based operating system has similarities to the TTY subsystem. A important aspect is their reliance on the kernel, as kernel is indeed god. The more important similarity though, is how these systems function. Our OS system continuously idles awaiting a user input to cause an interrupt and trigger an event, and this corresponds to the TTY system which also runs but waits for user input to trigger an effect.