Lab One

Ethan Morton

Ethan.Morton1@Marist.edu

September 7, 2024

1 Problem One

Q) What are the advantages and disadvantages of using the same system call interface for manipulating both files and devices?

A) The advantages of using the same system call interface for files and devices include having a common interface for operating system interactions, an abstraction that makes it easier for high level applications to access the operating system, and modularity between different devices that do similar operations like I/O. The disadvantages include a lack of flexibility in the implementation of system calls, abstractions that prioritize compatibility over efficiency, and additional complexities for device drivers that work differently than the file system.

2 Problem Two

Q) Would it be possible for the user to develop a new command interpreter using the system call interface provide by the operating system? How?

A) Yes, it is possible to develop a new shell for the system call interface. You can write a C program to interpret commands in a terminal emulator or from a shell file. Have the C program read the input in the terminal or read the contents of the file. Then use lexical tokenization to convert the text into tokens with certain meanings such as commands, arguments, operators, etc, etc. Use glibc (or whatever system call interface library is available) to make system calls with the provided tokens.