Group - 16

System Layers

User Space

Shell

Shell$ Joke
A blind man walks into a bar, then a table, then a chair.
Shell$

Return Values

Userspace Library

Kernel Space

System Calls

System Call
Handler

File System

Scheduler

Disk Driver

GPIO

Read/Write

Interrupts

Hardware

CPU

RAM

Disk
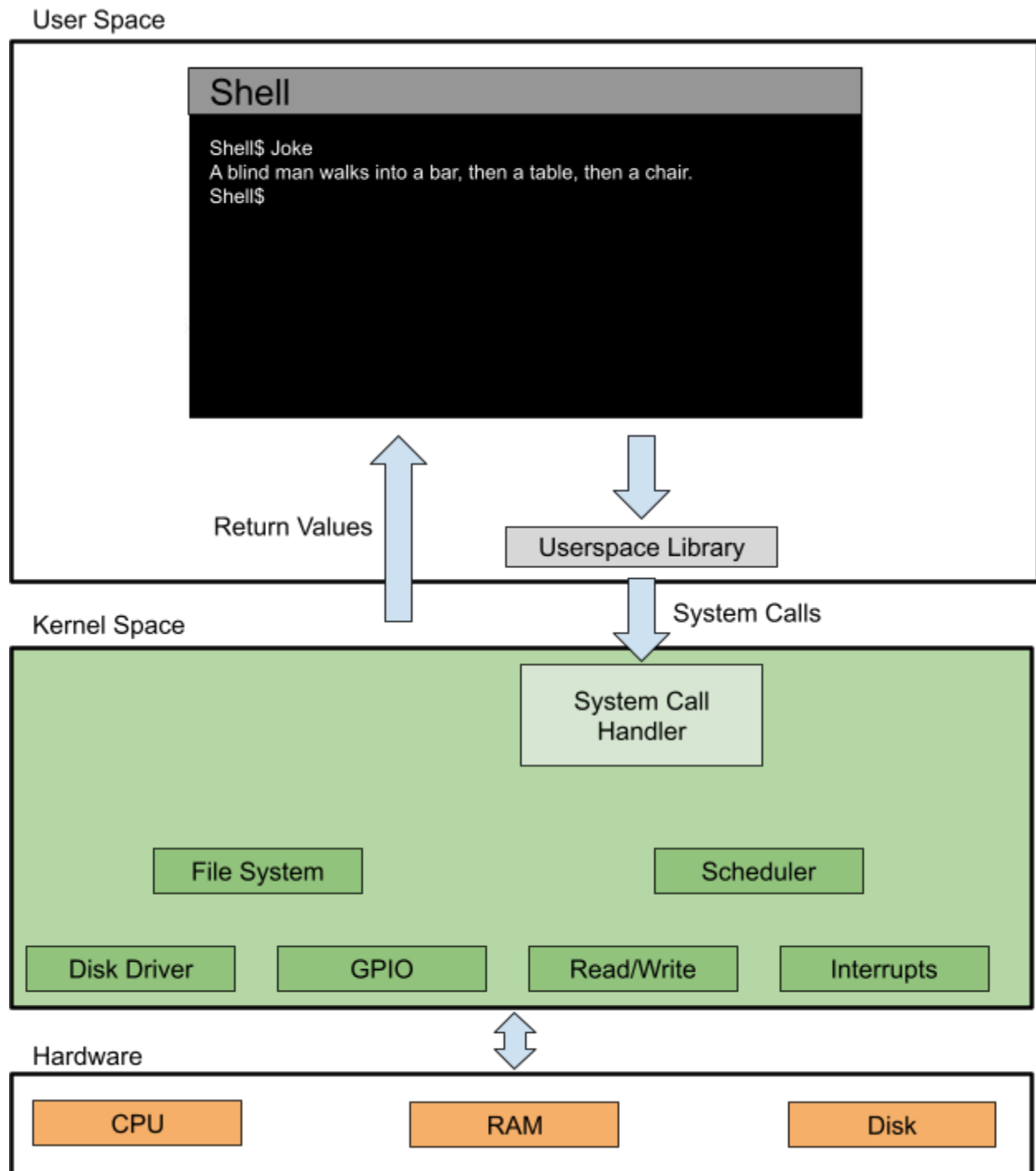
System Call Table:

System call functions that we have to implement since we can't use standard C++ libraries in the kernel.

Memory Management	Process	Signal	File System
mmap()	clone()	sigraise()	open()
munmap()	terminate()	sigret()	create()
	exec()	sigwait()	unlink()
	yield()	sigaction()	read()
			write()
			close()

Shell Commands:

date	Prints the time/date
joke	Prints a random joke
File navigation	Moves a cursor around in the file system. Standard file system navigation: ● cd .. / . ● rm ● mv
Program execution within same directory	./some-program
Command piping	Chaining the output of one command into the input of another
bg or &	Starts a program in the background
grep	similar linux grep functionality
Control operators	Standard control operators like ;, &, &&
echo	Echos back what is in the argument

Coding Complexity

High - GPIO, Disk Driver, Virtual Memory, Interrupts

Medium - Filesystem

Low - Scheduler, Shell

Languages

C++ and Assembly