**COMP354 – Operating Systems**

**Spring 2016**

**Project #3 – Grading Rubric**

**Loading & Executing Programs + Shell**

**\_\_\_49\_\_ / 50 Required Functionality**

compileOS script additions work correctly:

**Y** N Places Disk Map into sector 1 of the disk.

**Y** N Places Disk Directory into sector 2 of the disk.

**Y** N Places message.txt onto the disk using loadFile.

**Y** N Assembles lib.asm.

**Y** N Compiles, links and places uprog1 on disk using loadFile.

**Y** N Compiles, links and places uprog2 on disk using loadFile.

**Y** N Compiles, links and places shell on disk using loadFile.

readFile function works correctly:

**Y** N Reads a 1 sector file correctly (e.g. messag).

**Y** N Reads a multiple sector files correctly.

**Y** N Returns the number of sectors read.

**Y** N Returns -1 if file is not found.

executeProgram function works correctly:

**Y** N Loads program at correct memory location.

**Y** N Executes uprog1 successfully.

**Y** N Executes uprog2 successfully.

**Y** N Returns -1 if program is not found.

**Y** N Returns -2 if the segment is not valid.

terminate function works correctly:

**Y** N Resets segment registers.

**Y** N Relaunches shell when uprog2 terminates.

System call interface is correct:

**Y** N AX=0x03 correctly invokes readFile.

**Y** N AX=0x04 correctly invokes executeProgram.

**Y** N AX=0x05 correctly invokes terminate.

**Y** N Returns -1 on unrecognized AX value.

Shell functionality is correct:

**Y** N Uses system calls to request OS services.

**Y** N Recognizes type command.

**Y** N type command works on 1 sector file.

**Y** N type command works on multiple sector file.

**Y** N type command prints error message if file is not found.

**Y** N Recognizes execute command.

**Y** N Executes uprog1 successfully.

**Y** N Executes uprog2 successfully.

**Y** N execute command prints error message if file is not found.

**Y** N Shell behaves reasonably with blank line input.

Y **N** Shell behaves reasonably with unrecognized command.

It tries to do type when you type “typed”

**Y** N Shell behaves reasonably with blank following commands.

**\_\_20\_\_\_ / 20 Improvements**

User program library implemented:

**Y** N Function provided for print string.

**Y** N Function provided for read string.

**Y** N Function provided for read file.

**Y** N Function provided for execute program.

**Y** N Function provided for terminate.

Shell modified to use user program library:

**Y** N Shell uses user program library.

**\_\_20\_\_\_ / 20 Coding Style**

**Y** N Uses struct’s appropriately for searching Disk Directory.

**Y** N Uses reasonable functional decomposition.

e.g. String comparisons

e.g. Finding directory entries

**\_\_5\_\_\_ / 5 Documentation**

**Y** N compileOS is well formatted and adequately documented.

**Y** N kernel.c is well formatted and adequately documented.

**Y** N shell.c is well formatted and adequately documented.

**\_\_\_\_\_ / 0 Bonus**

readFile does not allow buffer overrun.

Y N readFile does not read more than a user specified maximum

number of characters into the buffer.

Magic number functionality works correctly.

Y N Post-processing utility provided.

Y N compileOS.bash script ensures executable programs contain

the magic number.

Y N executeProgram will run executable files.

Y N executeProgram will not run non-executable files.

Y N executeProgram returns -3 if non-executable is run.

Y N Shell prints error message if non-executable is run.

**\_\_94\_\_\_ / 95 Total**