OS Assignment 2 - Report for Q2
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Explanation of Logic:

In this question, we were asked to make a system call named kernel_2d_memcpy which takes a 2D matrix and copies it using the kernel source. We defined our syscall in a new folder called kernel_2d_memcpy **(has been submitted)** and made a makefile there for its compilation. In our kernel root source, we have gone to the path arch/x86/entry/syscalls/syscall_64.tbl wherein we have added our new syscall at number 451. In the kernel root then we edit the Makefile of the kernel root by going to the following line:

```
ifeq ($(KBUILD_EXTMOD),)
core-y  += kernel/ certs/ mm/ fs/ ipc/ security/ crypto/
```

We then append the name of the directory at the end of this line starting with core-y.
In our syscall definition we use the two system calls __copy_from_user() and __copy_to_user() and make a float 2D stock matrix to perform the copying.
We then compile the kernel. Note: All of this is happening in a new edited_kernel. I have made a copy of my original kernel without this system call and have saved it under a directory named stock_kernel.

After the kernel is compiled, we make the test.c file in the kernel which executes this system call. It takes an input matrix from the user, executes this kernel_2d_memcpy system call, copies this matrix and outputs this matrix.

Files Submitted:

- I have submitted a patch file which calls a diff on the syscall_64.tbl file and the kernel root Makefile.
- Additionally I have submitted the entire directory which contains the kernel_2d_memcpy.c system call and the Makefile for compiling it when the kernel would be compiled.
- The test.c file which is run to execute the system call and test it.
- A Makefile for test.c