Lab 10 Report

Ryan Longacre (rlong315)

Zachary Hayes (zhaye769)

November 29, 2017

## Overview

This lab will give us experience hooking a preexisting interrupt to run our own code. Specifically, we will hook the 0x08 timer interrupt to execute our own code 18.2 times per second. This will give us more experience dealing with interrupts and restoring them before exiting the program.

## Obstacles

* When debugging the code when the interrupt was only installed, but not uninstalled (first bullet point in the lab instructions), we could set a breakpoint at the jmp far instruction as directed, but after running the program and watching it break on that instruction, we were unable to deactivate the breakpoint. DOSBox won’t let the user set/unset a breakpoint on the current instruction, and stepping past the jmp far jumped to the address away from the rest of our code, so we couldn’t navigate back. We ended up having to simply exit DOSBox.
* When trying to save the old cursor position before printing the counter value, we tried pushing DH and DL. However, we forgot you cannot push half a register. This was easily fixed by simply pushing DX.
* When writing the code to print the counter value, we forgot to change the cursor position after each character, so the program would only print the last character.
* Again, when writing the code to print the counter value, we used the interrupt to read the cursor position instead of set the cursor position. This clobbered the CX register, which was used for number of characters to write in the 10,A interrupt, so the program filled the screen with the last character of the counter instead of printing the value cleanly in the corner.

## Results

We successfully completed all of the lab instructions.

This lab wasn’t too difficult since we had hooked the keyboard interrupt in one of the previous lectures as well as in our team project, so it was a matter of copying and adapting the code to work with the timer interrupt. Actually printing the counter value wasn’t too difficult either, once we fixed our several basic mistakes.