Term Project: Phase 3 Report

Team #2 Members:

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Below is a detailed description of all the assumptions we have made coupled with all the findings that we came up with through this assignment:

- In ata,we will be able to know the disk size,how many sectors we have,if it supports dma or not,if it uses PIO or interrupt-based programming,and what values we can use to write to the lba fields that are not out of range.

- In the pci,we loop in the 256 buses,then 32 devices,and then the 8 functions,but if we find that there are no devices,then we exit from the loop.

- We compare the Device ID with 0xffff which is invalid address,if it is equal,then there is no device connected.We also want to figure out the device header to be able to know its type,if it is 0,then it is normal device,else if it is 1,then it will be pci to pci bridge.

- In Idt, We need to send the end of interrupt (EOI) to both ports of the PIC to be able to send any new or pending interrupts.

- To clear screen, we print NULL characters for the entire screen size.

- To imitate scrolling, we move the every line to the above line. This is done by moving every byte to its location-160 (size of 1 line)

- For new line, we add to the printing location pointer the remaining bytes to reach the next line (reach 160).

- Pit counter prints after every 1000 interrupts. Always at the top line of the screen.

- To adjust scrolling with pit counter, we assume the second line to be the first which we remove and then perform scrolling.

- While network request is IP, we need to check its type to be ICMP. Then, we check which type of ICMP it is. It must be an ICMP Request.

- We need to check destination IP address of receive packet with our IP address and they must be the same.

- Checksum is used to know if packet was corrupted or not.

- For the reply, we need to construct the send packet by setting the correct headers then it is passed to the send buffer.

Phase 2& 3 Contribution:

Page Table & Page walk: Mina and Sherif

Memory Tester: Joseph

Bitmap: Joseph

GDT: Hussam

Clear Screen: Mina and Sherif

Scrolling: Mina and Sherif

PIT: Mina and Sherif

IDT: Mina and Sherif

IDT Documentation: Hussam

E1000 Documentation: Joseph

Network IP & ICMP: Mina and Sherif

PCI: Joseph & Hussam

ATA: Hussam

PIC & Clear IRQ Mask: Mina and Sherif

The steps needed to run your code:

To run the code use the following commands:

- **Make run_myos**

Or

- **Make run_myos_drv (** if you needed to run from a non floppy disk)

Screenshot: