NunyaOS

Week 6

Updates

- Finalized ISO File System Interface [Jesse, Ryan]
- File System Terminal Commands [Jesse, Ryan]
- Successfully drawing mouse on screen (no erase) [Alex, Kyle]
- Command line framework [Ryan]
- Testing framework [Kyle]
- Loading processes [Shuyang, Zach]

ISO File System

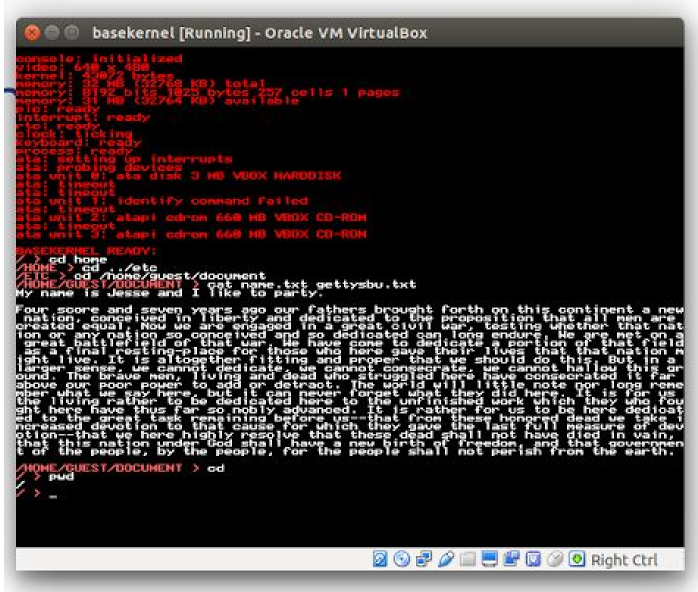
- Handles large files (over 2048 characters in size)
- Handles large directories (over 2048 characters in size)
- Error checking/handling
- Implemented EOF
- Bug fixes
    - Endless root directory

Command Line Framework

- Easily add commands to terminal through this module
- Looks for matching commands on input
- Dispatches input to different modules

File System Terminal Commands

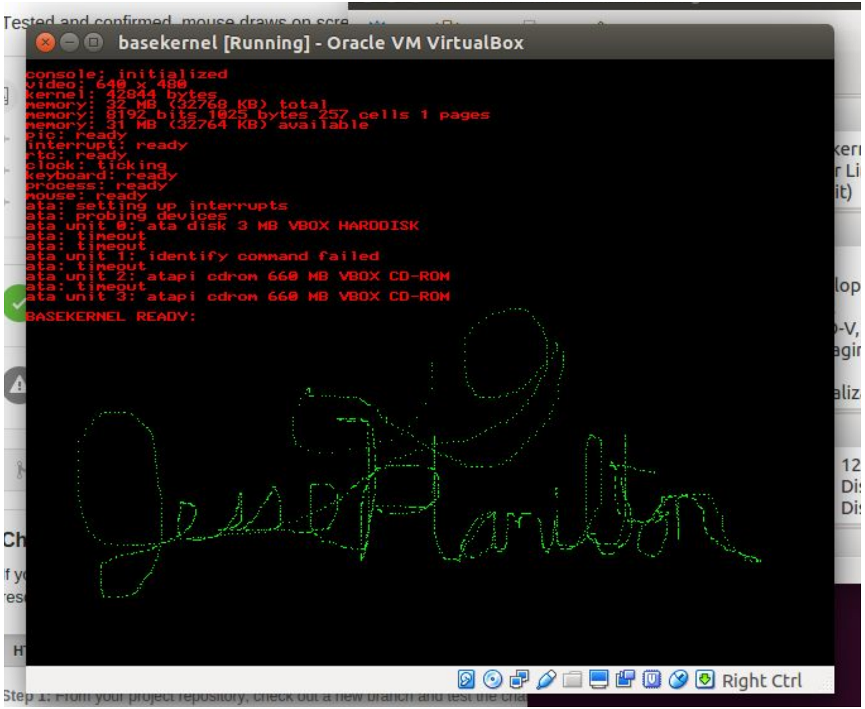
- Implements:
  - cd
  - ls
  - pwd
  - cat
- Absolute/relative paths
- Backspace handling
- Lower case typing



```
console: initialized
video: 640 x 480
kernel: 43072 bytes
memory: 32 MB (32768 KB) total
memory: 8192 bits 1023 bytes 257 cells 1 pages
memory: 31 MB (32764 KB) available
pic: ready
interrupt: ready
rtc: ready
clock: ticking
keyboard: ready
process: ready
ata: setting up interrupts
ata: probing devices
ata unit 0: ata disk 3 MB VBOX HARDDISK
ata: timeout
ata: timeout
ata unit 1: identify command failed
ata: timeout
ata unit 2: atapi cdrom 660 MB VBOX CD-ROM
ata: timeout
ata unit 3: atapi cdrom 660 MB VBOX CD-ROM

BASEKERNEL READY:
/ > cd home
/HOME > cd ../etc
/ETC > cd /home/guest/document
/HOME/GUEST/DOCUMENT > cat name.txt gettysbu.txt
My name is Jesse and I like to party.

Four score and seven years ago our fathers brought forth on this continent a new
 nation, conceived in liberty and dedicated to the proposition that all men are
created equal. Now we are engaged in a great civil war, testing whether that nat
ion or any nation so conceived and so dedicated can long endure. We are met on a
 great battlefield of that war. We have come to dedicate a portion of that field
 as a final resting-place for those who here gave their lives that that nation m
ight live. It is altogether fitting and proper that we should do this. But in a
larger sense, we cannot dedicate, we cannot consecrate, we cannot hallow this gr
ound. The brave men, living and dead who struggled here have consecrated it far
above our poor power to add or detract. The world will little note nor long reme
mber what we say here, but it can never forget what they did here. It is for us
the living rather to be dedicated here to the unfinished work which they who fou
ght here have thus far so nobly advanced. It is rather for us to be here dedicat
ed to the great task remaining before us--that from these honored dead we take i
ncreased devotion to that cause for which they gave the last full measure of dev
otion--that we here highly resolve that these dead shall not have died in vain,
that this nation under God shall have a new birth of freedom, and that governmen
t of the people, by the people, for the people shall not perish from the earth.

/HOME/GUEST/DOCUMENT > cd
/ > pwd
/
/ > _
```

Mouse Driver

- Successfully draws to screen
- Using interrupts now!



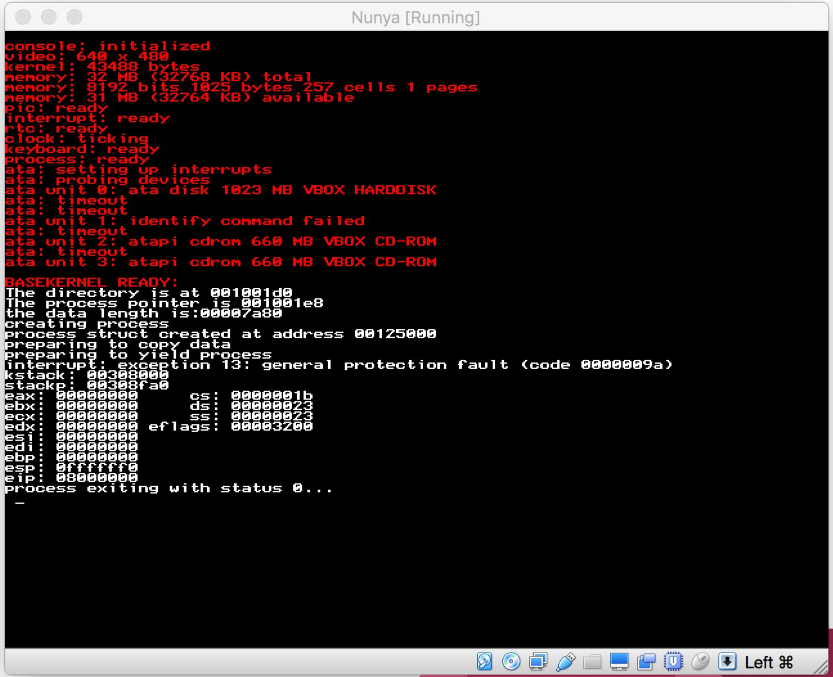
```
console: initialized
video: 640 x 480
kernel: 42844 bytes
memory: 32 MB (32768 KB) total
memory: 8192 bits 1025 bytes 257 cells 1 pages
memory: 31 MB (32764 KB) available
pic: ready
interrupt: ready
rtc: ready
clock: ticking
keyboard: ready
process: ready
mouse: ready
ata: setting up interrupts
ata: probing devices
ata unit 0: ata disk 3 MB VBOX HARDDISK
ata: timeout
ata: timeout
ata unit 1: identify command failed
ata: timeout
ata unit 2: atapi cdrom 660 MB VBOX CD-ROM
ata: timeout
ata unit 3: atapi cdrom 660 MB VBOX CD-ROM

BASEKERNEL READY:
```

Testing Framework

- Framework built to add unit tests
- Can run tests individually or as a batch
- Place time bounds on tests to show success
- Can run all kinds of tests
- Integrated with command line

Loading Processes

- Still a work in process
- Compiled a program and loaded it into memory through ISO module
- Needed to add to process API
- memorylayout.h: PROCESS_ENTRY_POINT should be 0x8000 0000? PROCESS_STACK_INIT should be 0xffff fff0?



```
console: initialized
video: 640 x 480
kernel: 43488 bytes
memory: 32 MB (32768 KB) total
memory: 8192 bits 1025 bytes 257 cells 1 pages
memory: 31 MB (32764 KB) available
pic: ready
interrupt: ready
rtc: ready
clock: ticking
keyboard: ready
process: ready
ata: setting up interrupts
ata: probing devices
ata unit 0: ata disk 1023 MB VBOX HARDDISK
ata: timeout
ata: timeout
ata unit 1: identify command failed
ata: timeout
ata unit 2: atapi cdrom 660 MB VBOX CD-ROM
ata: timeout
ata unit 3: atapi cdrom 660 MB VBOX CD-ROM

BASEKERNEL READY:
The directory is at 001001d0
The process pointer is 001001e8
the data length is:00007a80
creating process
process struct created at address 00125000
preparing to copy data
preparing to yield process
interrupt: exception 13: general protection fault (code 0000009a)
kstack: 00308000
stackp: 00308fa0
eax: 00000000     cs: 0000001b
ebx: 00000000     ds: 00000023
ecx: 00000000     ss: 00000023
edx: 00000000 eflags: 00003200
esi: 00000000
edi: 00000000
ebp: 00000000
esp: 0ffffff0
eip: 08000000
process exiting with status 0...
 _
```

Future Plan

- syscall Interface
- Clear Jira Backlog
- Update Webpage
- Global Error Reporting/Handling
- Add Screen Buffer for Clear Mouse Drawing
- Travis Build Doxygen Web Docs

Questions

- Race conditions in ata.c
- Move towards writable file system
- Travis model
- How are we supposed to get a process in the queue?
- Why does the process load at 0x8000000 (512MB)?
    - changing it to 0x8000 0000 (2GB) doesn’t work