

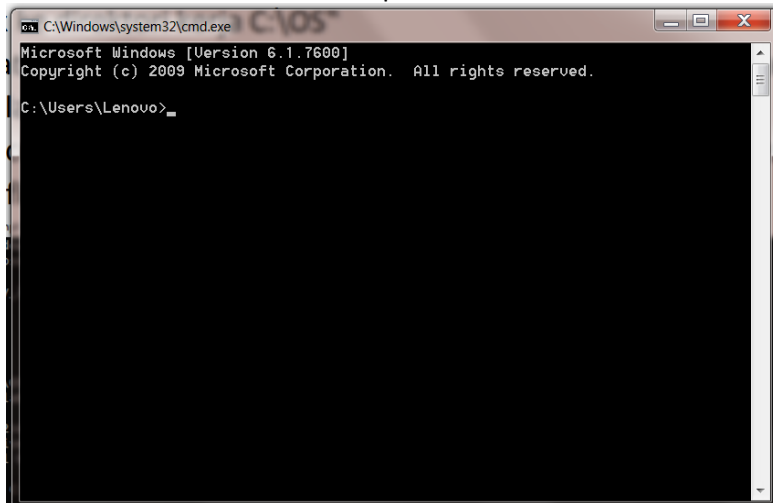
Nama : Fandhitya Glovani

Nim : L200180118

Kelas : C

## MODUL 2

Buka Cmd atau Command Prompt.



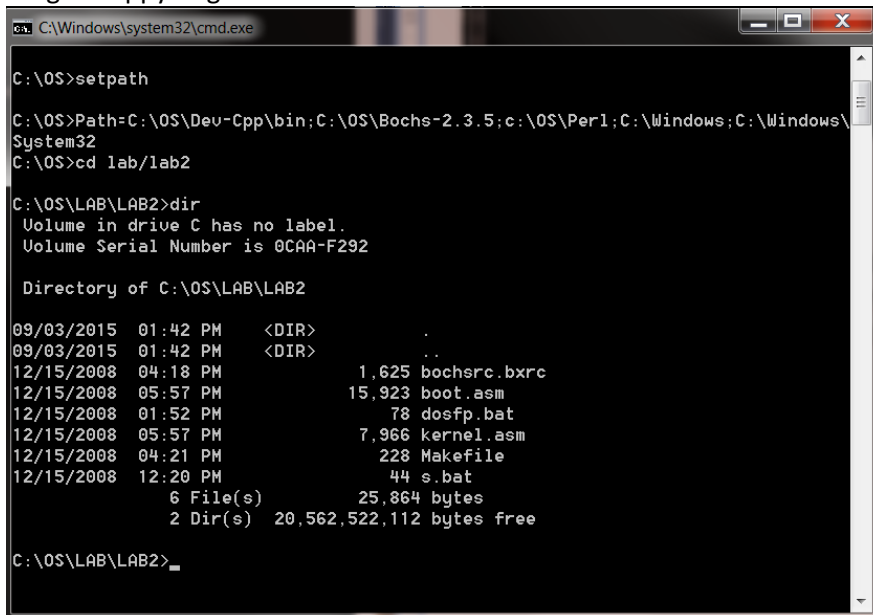
Masuk ke direktori kerja

=> Masuk ke direktori kerja C:\OS"

=> Melihat isi direktori di dalam folder OS dengan perintah dir pada command prompt

=> Menjalankan file setpath untuk mengatur lingkungan kerja

=> ketik "cd LAB/LAB2" dilanjutkan perintah "dir" untuk melihat file didalamnya dan Menyiapkan file image "floppy.img"

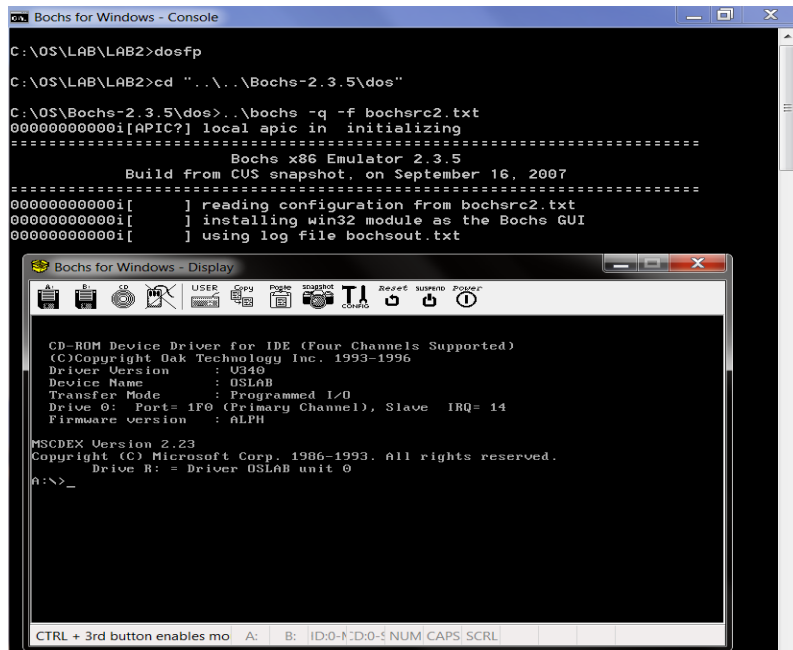


=> Memformat file “floppya.img” dan mengisi dengan system Operasi DOS versi 7

=> Jalankan perintah “dosfp”

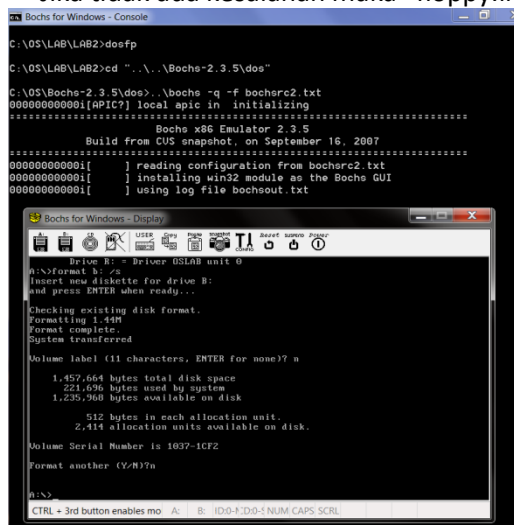
=> Pada Bochs klik menu gambar floppy disk nomor dua dari kanan atau B

=> Atur lokasi file image sehingga menunjukkan file “floppy.img” pada LAB2 dengan klik “Browser” dan atur lalu “Ok”

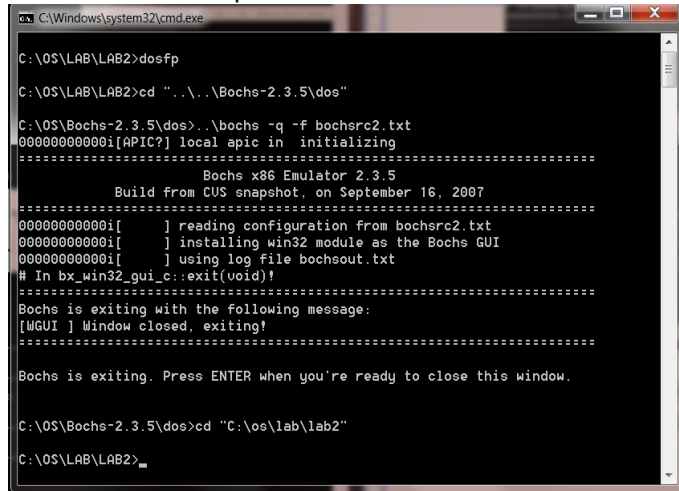


=> Pada prompt “A:>” ketik dengan “A:>Format B:/S”

=> Jika tidak ada kesalahan maka “floppy.img” maka dapat digunakan untuk booting.



=> Tutup Windows “Bochs” klik menu “Power” . Pada windows “Command Prompt” akan tampak bekas aktifitas “Bochs” seperti dibawah ini.



```
C:\Windows\system32\cmd.exe

C:\OS\LAB\LAB2>dosfp

C:\OS\LAB\LAB2>cd "\"..\\..\\Bochs-2.3.5\\dos\"

C:\OS\Bochs-2.3.5>bochs -q -f bochsrc2.txt
00000000000i[APIC?] local apic in initializing
=====
                Bochs x86 Emulator 2.3.5
            Build from CUS snapshot, on September 16, 2007
=====
00000000000i[      ] reading configuration from bochsrc2.txt
00000000000i[      ] installing win32 module as the Bochs GUI
00000000000i[      ] using log file bochsout.txt
# In bx_win32_gui.c:exit(void)!
=====
Bochs is exiting with the following message:
[WGUI ] Window closed, exiting!
=====

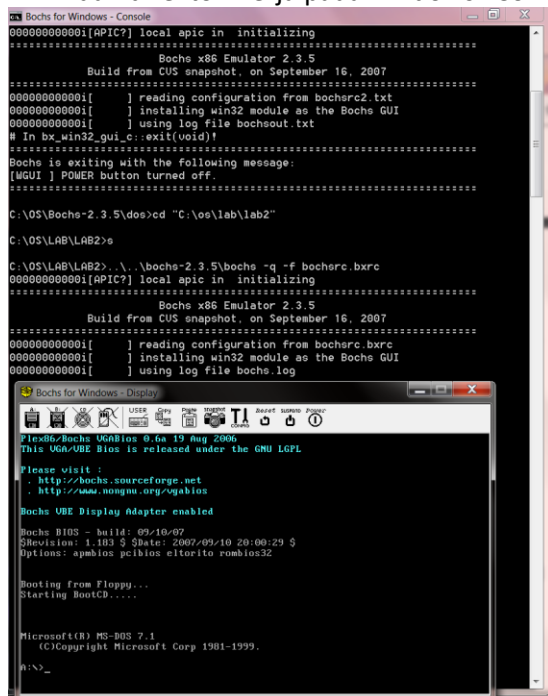
Bochs is exiting. Press ENTER when you're ready to close this window.

C:\OS\Bochs-2.3.5>cd "C:\os\lab\lab2"

C:\OS\LAB\LAB2>
```

=> BOOT PC-Simulator dengan file “floppy.img”

=> Pindah direktori kerja pada windows “Command Prompt” dan jalankan perintah “s” lalu “Enter”



```
Bochs for Windows - Console
00000000000i[APIC?] local apic in initializing
=====
                Bochs x86 Emulator 2.3.5
            Build from CUS snapshot, on September 16, 2007
=====
00000000000i[      ] reading configuration from bochsrc2.txt
00000000000i[      ] installing win32 module as the Bochs GUI
00000000000i[      ] using log file bochsout.txt
# In bx_win32_gui.c:exit(void)!
=====
Bochs is exiting with the following message:
[WGUI ] POWER button turned off.
=====

C:\OS\Bochs-2.3.5>cd "C:\os\lab\lab2"

C:\OS\LAB\LAB2>

C:\OS\LAB\LAB2>..\\bochs-2.3.5\bochs -q -f bochsrc.bxrc
00000000000i[APIC?] local apic in initializing
=====
                Bochs x86 Emulator 2.3.5
            Build from CUS snapshot, on September 16, 2007
=====
00000000000i[      ] reading configuration from bochsrc.bxrc
00000000000i[      ] installing win32 module as the Bochs GUI
00000000000i[      ] using log file bochs.log

Bochs for Windows - Display
Pinebbs/Bochs UGABios 0.6a 19 Aug 2006
This UGA/UEFI Bios is released under the GNU LGPL

Please visit :
. http://bochs.sourceforge.net
. http://www.nongnu.org/ugabios

Bochs UEFI Display Adapter enabled

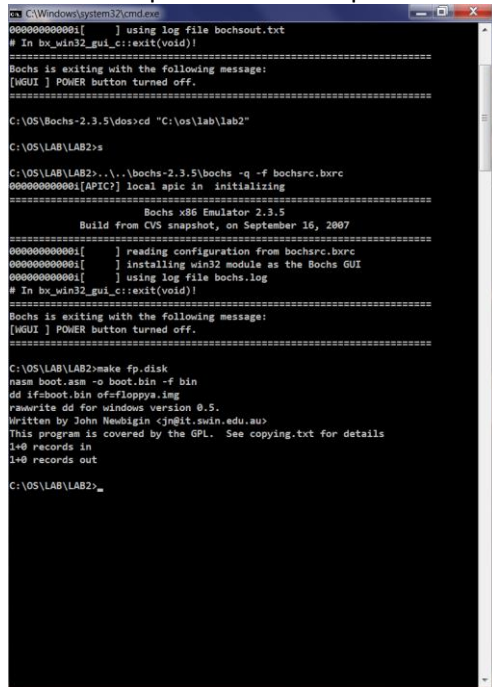
Bochs BIOS - build: 09/10/07
$Revision: 1.183 $ $Date: 2007/09/10 20:00:29 $
Options: apmbios pcibios eltorito rombios32

Booting from Floppy...
Starting BootCD....

Microsoft(R) Windows 7.1
(C)Copyright Microsoft Corp 1981-1999.
A:\>_
```

=> Kompilasi source code “boot.asm” dan memindah hasil ke bootsector “floopya.img”. Pindah ke direktori kerja “LAB2”

=> Jalankan perintah “make fp.disk”



```
C:\Windows\system32\cmd.exe
0000000000000000[ ] using log file bochsout.txt
# In bx_win32_gui_c::exit(void)!
=====
Bochs is exiting with the following message:
[MSGUI ] POWER button turned off.
=====

C:\OS\Bochs-2.3.5>cd "C:\os\lab\lab2"

C:\OS\LAB\LAB2>

C:\OS\LAB\LAB2>.\bochs-2.3.5\bochs -q -f bochsrc.bxrc
0000000000000000[APIC?] local apic in initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
0000000000000000[ ] reading configuration from bochsrc.bxrc
0000000000000000[ ] installing win32 module as the Bochs GUI
0000000000000000[ ] using log file bochs.log
# In bx_win32_gui_c::exit(void)!
=====
Bochs is exiting with the following message:
[MSGUI ] POWER button turned off.
=====

C:\OS\LAB\LAB2>make fp.disk
nasm boot.asm -o boot.bin -f bin
dd if=boot.bin of=floopya.img
rawwrite dd for windows version 0.5.
Written by John Newbigin <jn@it.swin.edu.au>
This program is covered by the GPL. See copying.txt for details
1+0 records in
1+0 records out

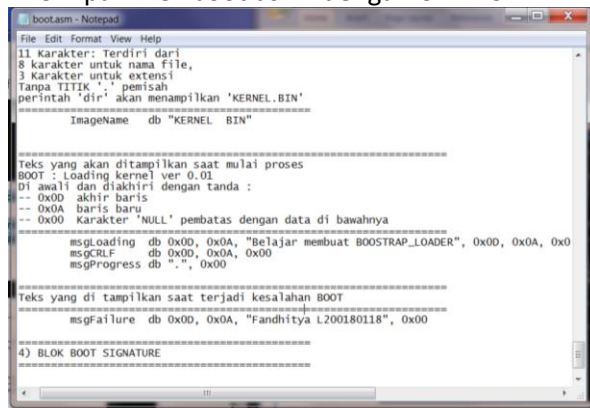
C:\OS\LAB\LAB2>
```

=> Menyunting file “boot.asm” ketik “notepad boot.asm” lalu “Enter”, cari teks Loading Kernel” pada windows “Notepad”

=> Sunting baris “Loading kernel ver 0.01” menjadi dengan “Belajar membuat BOOTSTRAP\_LOADER”

=> Sunting juga baris “ERROR: Press Any Key to Reboot” dengan cara yang sama dengan nama “Rohmad L2001180101”

=> Simpan file “boot.asm” dengan CTRL+S



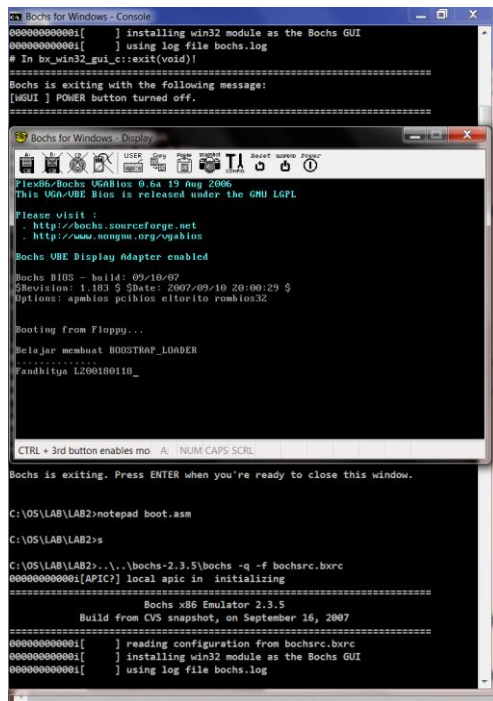
```
boot.asm - Notepad
File Edit Format View Help
11 Karakter: Terdiri dari
8 Karakter untuk nama file,
3 Karakter untuk ekstensi
Tanpa titik, pemisah
perintah 'dir' akan menampilkan 'KERNEL.BIN'
=====
ImageName db "KERNEL BIN"
=====

Teks yang akan ditampilkan saat mulai proses
BOOT : Loading kernel ver 0.01
01 awal dan diakhiri dengan tanda :
-- 0x00 akhir baris
-- 0x0A baris baru
-- 0x00 Karakter 'NULL' pembatas dengan data di bawahnya
=====
msgLoading db 0x00, 0x0A, "Belajar membuat BOOTSTRAP_LOADER", 0x00, 0x0A, 0x0
msgCRLF db 0x00, 0x0A, 0x00
msgProgress db ".", 0x00
=====

Teks yang di tampilkan saat terjadi kesalahan BOOT
=====
msgFailure db 0x00, 0x0A, "Rohmad L2001180101", 0x00
=====

4) BLOK BOOT SIGNATURE
=====
```

=> Ulangi kompilasi file “boot.asm” dan jalankan perintah “Make fp.disk” lalu “Enter”  
=> Jalankan PC-Simulator ketik “s” lalu “Enter” maka akan tampil seperti ini



```
Bochs for Windows - Console
00000000000i[      ] installing win32 module as the Bochs GUI
00000000000i[      ] using log file bochs.log
# In bx_win32_gui.c:exit(void)
=====
Bochs is exiting with the following message:
[!GUI ] POWER button turned off.
=====

Bochs for Windows - Display
FlexBios/Bochs UGA BIOS 0.6a 19 Aug 2006
This UGA/UEFI BIOS is released under the GNU LGPL.

Please visit :
. http://bochs.sourceforge.net
. http://www.songmu.org/uefibilos

Bochs UEFI Display Adapter enabled

Bochs BIOS - build: 09/10/07
$Revision: 1.183 $ $Date: 2007/09/10 20:00:29 $
Options: apmbios pcibios cltorito rombios32

Booting from Floppy...
Bea.jar memuat BOOTSTRAP_LOADER
Pandahtya LZ0018011B_

CTRL + 3rd button enables mo A: NUM CAPS SCRL

Bochs is exiting. Press ENTER when you're ready to close this window.

C:\OS\LAB\LAB2>notepad boot.asm

C:\OS\LAB\LAB2>s

C:\OS\LAB\LAB2>..\..\bochs-2.3.5\bochs -q -f bochsrc.bxrc
00000000000i[APIC?] local apic in initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
00000000000i[      ] reading configuration from bochsrc.bxrc
00000000000i[      ] installing win32 module as the Bochs GUI
00000000000i[      ] using log file bochs.log
```

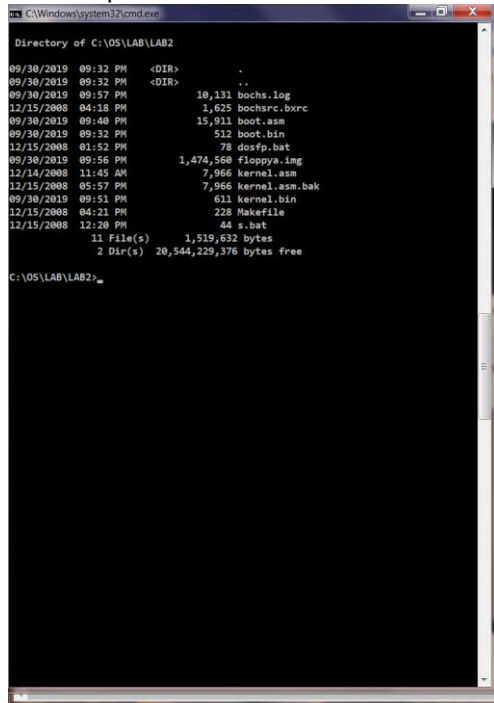
=> Menyiapkan file “kernel.bin” Prototype source code program kernel disimpan pada file “kernel.asm” lalu periksa pada direktori kerja anda.

=> Lakukan proses kompilasi untuk menghasilkan file “kernel.bin”

=> Lalu jalankan perintah “make kernel”

=> Apabila tidak ada kesalahan, berarti proses kompilasi berhasil pada direktori kerja dan terdapat file baru yaitu “kernel.bin”

=> Ketik perintah “dir” untuk melihat isi file didalamnya



```
C:\Windows\system32\cmd.exe
Directory of C:\OS\LAB\LAB2
09/30/2019 09:32 PM <DIR> .
09/30/2019 09:32 PM <DIR> ..
09/30/2019 09:57 PM          10,131 bochs.log
12/15/2008 04:18 PM          1,625 bochssrc.bxrc
09/30/2019 09:40 PM          15,911 boot.asm
09/30/2019 09:32 PM           512 boot.bin
12/15/2008 01:52 PM           78 dosfp.bat
09/30/2019 09:56 PM    1,474,560 floppy.img
12/14/2008 11:45 AM           7,966 kernel.asm
12/15/2008 05:17 PM           7,966 kernel.asm.bak
09/30/2019 09:11 PM           611 kernel.bin
12/15/2008 04:21 PM           228 Makefile
12/15/2008 12:20 PM           44 s.bat
               11 File(s)    1,519,632 bytes
               2 Dir(s)    20,544,229,376 bytes free

C:\OS\LAB\LAB2>
```

=> Memindahkan file “kernel.bin” ke dalam file image “floppy.img”

=> Untuk melakukan ini dengan menggunakan program shareware namanya “winimage”

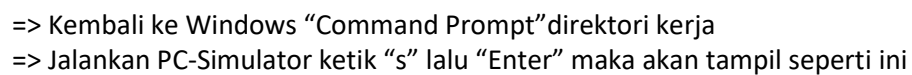
=> Buka direktori kerja “C:\OS\LAB\LAB2” dengan Windows Explore

=> Klik double pada file “floppy.img” atau panggil program winimage klik “Start | All Programs | Winimage | Winimage

=> Kemudian klik open dan cari file “floppy.img” pada direktori kerja untuk memasukkan file “kernel.bin”

pada Windows “Winimage” klik menu “image | inject”

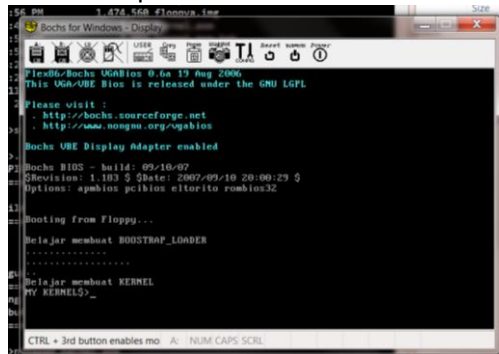
=> Lalu cari file “kernel.bin” pada direktori kerja dan OK. Lalu simpan dengan “File | Save” dan keluar dari Winimage



=> Memodifikasi file "kernel.asm"

=> Jalankan perintah "Notepad kernel.asm" lalu "Enter". Cari teks "Welcome to MY KERNEL. . . ." ganti dengan teks "Belajar membuat KERNEL"

=> Lalu simpan file "kernel.asm" tekan CTRL+S



The screenshot shows a Bochs virtual machine window titled "Bochs for Windows - Display". The window contains a black terminal area with white text. The text indicates the BIOS is loading and booting from a floppy disk. It shows the loading of a bootstrap loader and then the kernel. The kernel's welcome message has been changed to "Belajar membuat KERNEL".

```
Bochs for Windows - Display
FlexB/Bochs VGBios 0.6a 19 Aug 2006
This VGA-USB Bios is released under the GNU LGPL.

Please visit :
  . http://bochs.sourceforge.net
  . http://www.nongnu.org/vgabios

Bochs VBE Display Adapter enabled

Bochs BIOS - build: 09/10/07
Revision: 1.103 $ Date: 2007/09/10 20:00:29 $
Options: apmbios pcibios eltorito rombios32

Booting from Floppy...
Belajar membuat BOOTSTRAP_LOADER
.....
Belajar membuat KERNEL
MY KERNEL$>

CTRL + 3rd button enables mo . A . NUM CAPS SCRL
```