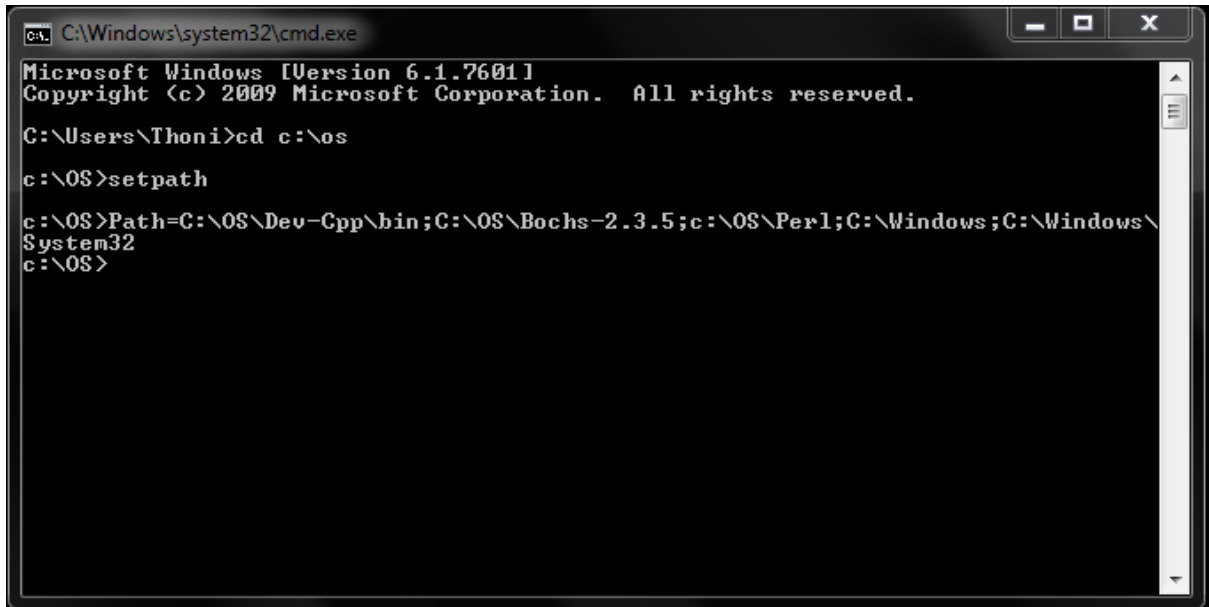


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Kelas : C

MODUL 2

1. Membuka direktori OS dan menjalankan perintah setpath



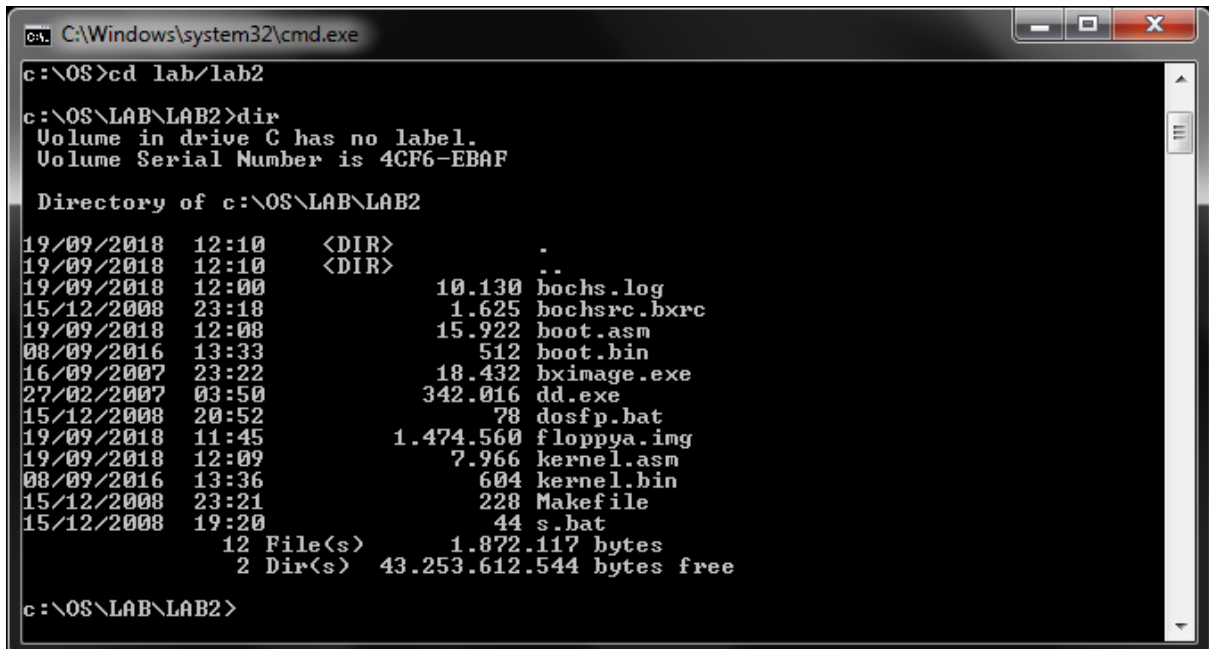
```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Thoni>cd c:\os

c:\OS>setpath

c:\OS>Path=C:\OS\Dev-Cpp\bin;C:\OS\Bochs-2.3.5;c:\OS\Perl;C:\Windows;C:\Windows\
System32
c:\OS>
```

2. Kemudian pindah ke direktori LAB2 dan cek direktori dengan mengetikan **dir**



```
C:\Windows\system32\cmd.exe
c:\OS>cd lab/lab2

c:\OS\LAB\LAB2>dir
Volume in drive C has no label.
Volume Serial Number is 4CF6-EBAF

Directory of c:\OS\LAB\LAB2

19/09/2018 12:10 <DIR>      .
19/09/2018 12:10 <DIR>      ..
19/09/2018 12:00             10.130 bochs.log
15/12/2008 23:18             1.625 bochsrc.bxrc
19/09/2018 12:08            15.922 boot.asm
08/09/2016 13:33             512 boot.bin
16/09/2007 23:22            18.432 bximage.exe
27/02/2007 03:50           342.016 dd.exe
15/12/2008 20:52              78 dosfp.bat
19/09/2018 11:45          1.474.560 floppy.aimg
19/09/2018 12:09             7.966 kernel.asm
08/09/2016 13:36             604 kernel.bin
15/12/2008 23:21             228 Makefile
15/12/2008 19:20              44 s.bat
                12 File(s)      1.872.117 bytes
                 2 Dir(s)      43.253.612.544 bytes free

c:\OS\LAB\LAB2>
```

3. Membuat file floppy.img dengan menjalankan bxlmage, pilih fd

```
C:\Windows\system32\cmd.exe
c:\OS\LAB\LAB2>bximage
=====
                        bximage
                Disk Image Creation Tool for Bochs
                $Id: bximage.c,v 1.32 2006/06/16 07:29:33 vruppert Exp $
=====
Do you want to create a floppy disk image or a hard disk image?
Please type hd or fd. [hd] fd
```

Kemudian pilih 1.44 sebagai default, selanjutnya beri nama floppy.img

```
Do you want to create a floppy disk image or a hard disk image?
Please type hd or fd. [hd] fd

Choose the size of floppy disk image to create, in megabytes.
Please type 0.16, 0.18, 0.32, 0.36, 0.72, 1.2, 1.44, 1.68, 1.72, or 2.88.
[1.44]
I will create a floppy image with
  cyl=80
  heads=2
  sectors per track=18
  total sectors=2880
  total bytes=1474560

What should I name the image?
[a.img] floppy.img

The disk image 'floppy.img' already exists.  Are you sure you want to replace i
t?
Please type yes or no. [no]
ERROR: Aborted

Press any key to continue
c:\OS\LAB\LAB2>
```

4. Cek pada direktori LAB2 bahwa floppy.img sudah ada

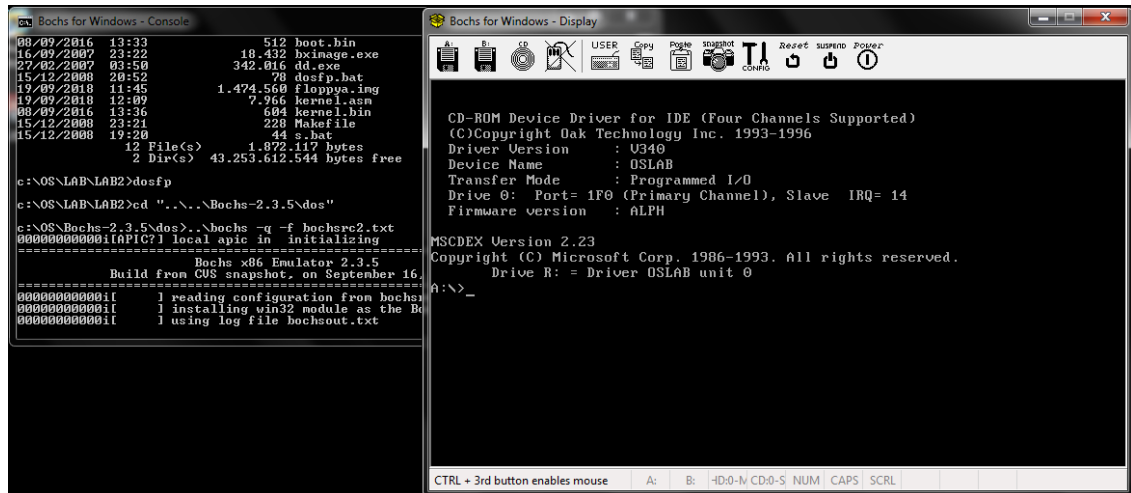
```
C:\Windows\system32\cmd.exe
c:\OS\LAB\LAB2>dir
Volume in drive C has no label.
Volume Serial Number is 4CF6-EBAF

Directory of c:\OS\LAB\LAB2

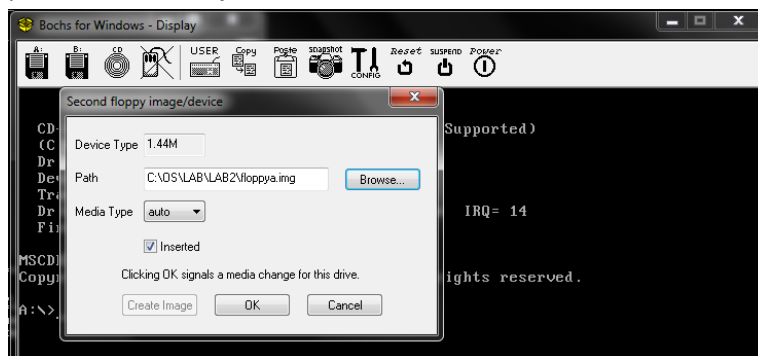
19/09/2018  12:10    <DIR>          .
19/09/2018  12:10    <DIR>          ..
19/09/2018  12:00             10.130 bochs.log
15/12/2008  23:18             1.625 bochsrc.bxrc
19/09/2018  12:08             15.922 boot.asm
08/09/2016  13:33              512 boot.bin
16/09/2007  23:22             18.432 bximage.exe
27/02/2007  03:50            342.016 dd.exe
15/12/2008  20:52              78 dosfp.bat
19/09/2018  11:45            1.474.560 floppy.img
19/09/2018  12:09             7.966 kernel.asm
08/09/2016  13:36             604 kernel.bin
15/12/2008  23:21             228 Makefile
15/12/2008  19:20              44 s.bat
               12 File(s)          1.872.117 bytes
               2 Dir(s)          43.253.612.544 bytes free

c:\OS\LAB\LAB2>
```

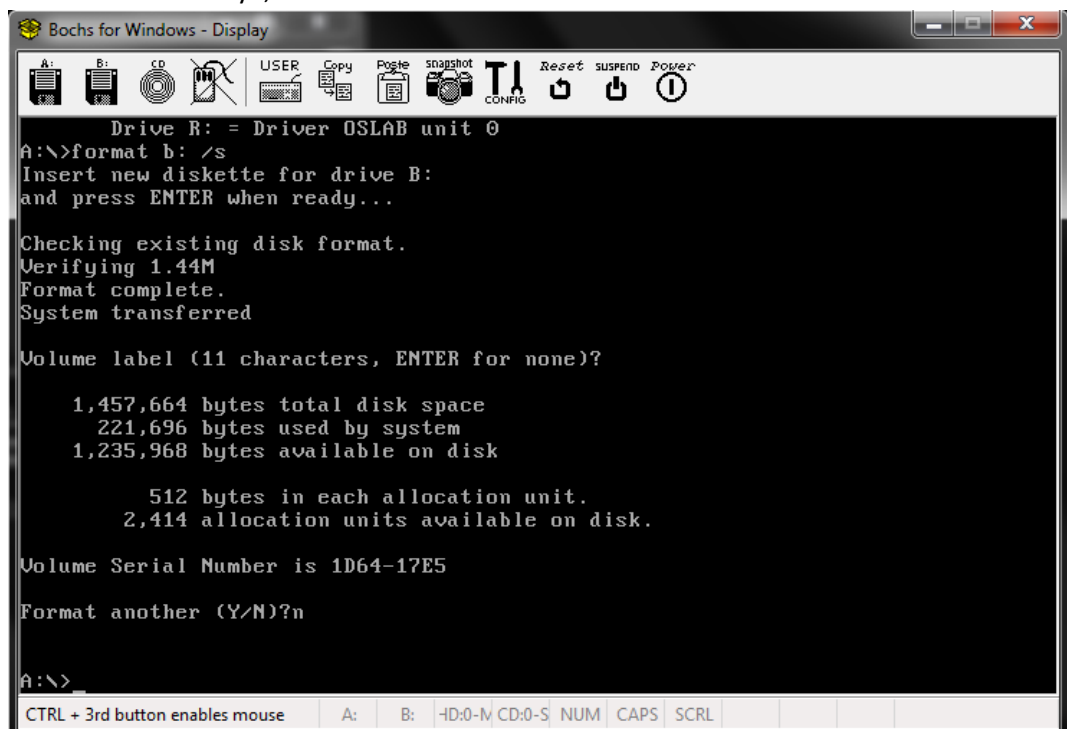
5. Jalankan dosfp untuk memformat floppy.img



6. Klik menu gambar floppy disk B, kemudian atur lokasi image sehingga ke file floppy.img pada direktori kerja LAB2



7. Selesaikan formatnya, setelah selesai klik menu POWER



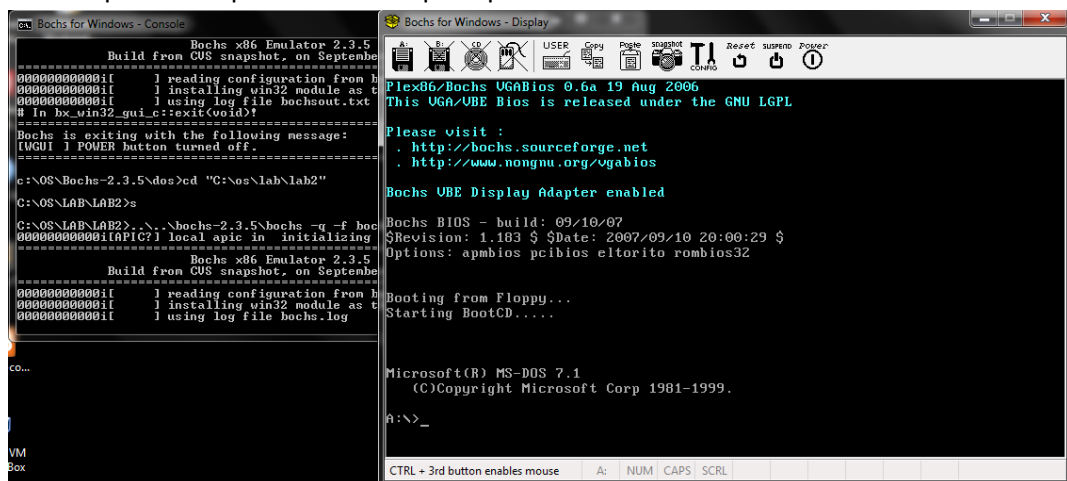
```
C:\Windows\system32\cmd.exe
15/12/2008 19:20 44 s.bat
12 File(s) 1.872.117 bytes
2 Dir(s) 43.253.612.544 bytes free

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

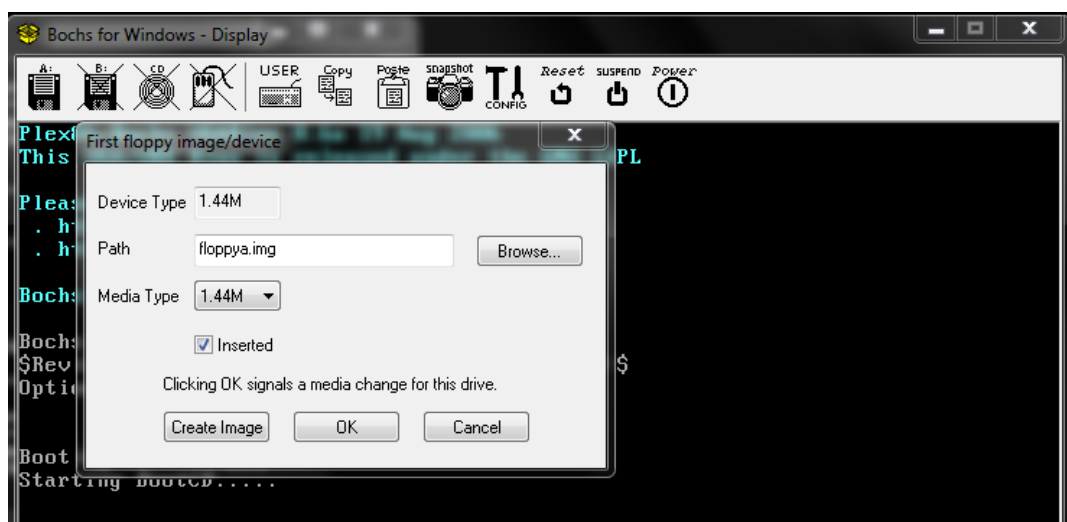
c:\OS\Bochs-2.3.5\dos>..\bochs -q -f bochsrc2.txt
000000000000i[APIC?] local apic in initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
000000000000i[ reading configuration from bochsrc2.txt
000000000000i[ installing win32 module as the Bochs GUI
000000000000i[ using log file bochsout.txt
# In bx_win32_gui.c::exit(void)?
=====
Bochs is exiting with the following message:
[VGUI] POWER button turned off.
=====

c:\OS\Bochs-2.3.5\dos>cd "C:\os\lab\lab2"
C:\OS\LAB\LAB2>
```

8. Ketikan perintah `s` pada command prompt.



9. Pastikan floppy berada di drive A dengan meng klik pada gambar floppy disk paling kiri yang tidak ada gambar X nya



10. Ketikan **boot.asm** untuk meng kompail, selanjutnya ketikan **make fp.disk**

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

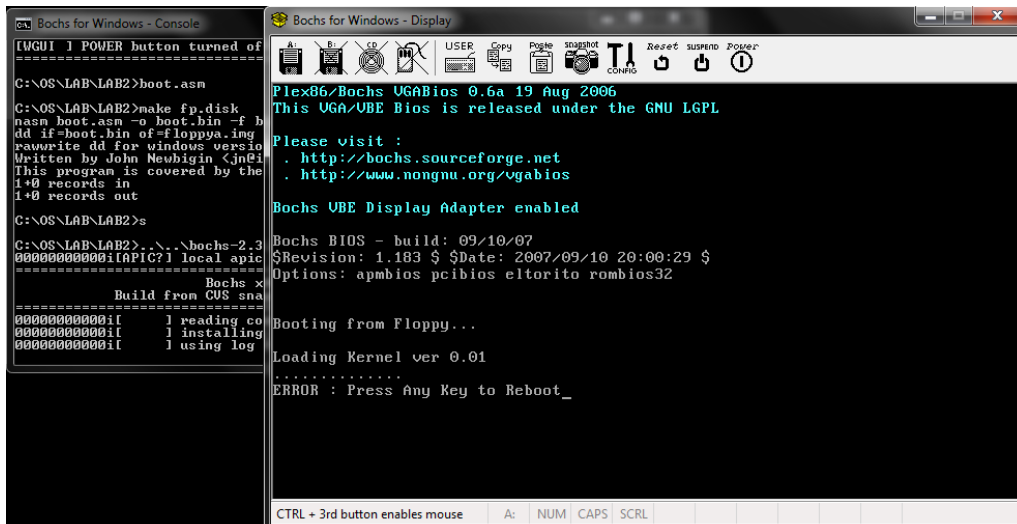
00000000000i[APIC?] local apic in initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
00000000000i[      ] reading configuration from bochsrc.bxrc
00000000000i[      ] installing win32 module as the Bochs GUI
00000000000i[      ] using log file bochs.log
# In bx_win32_gui_c::exit(void)!
=====
Bochs is exiting with the following message:
[WGUI ] POWER button turned off.
=====

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

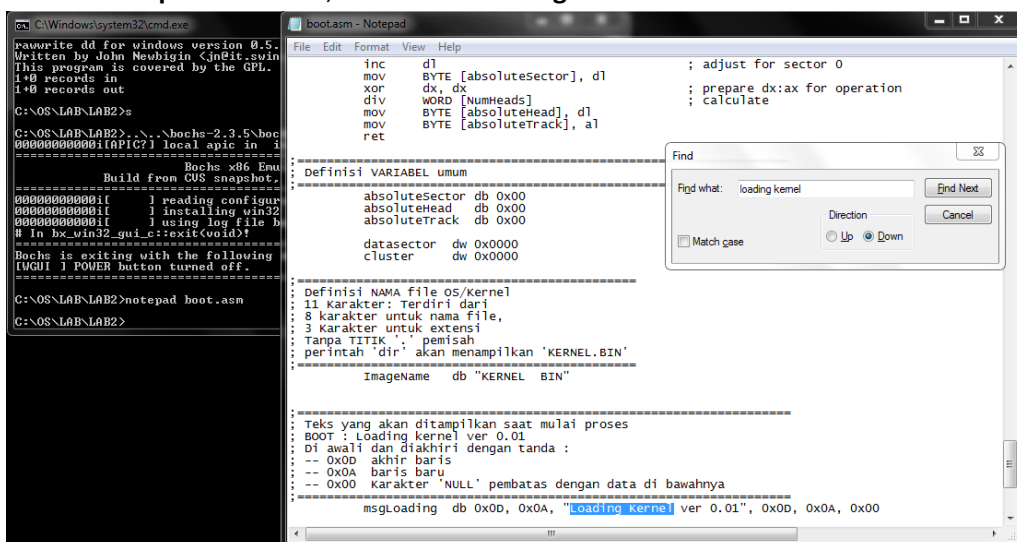
C:\OS\LAB\LAB2>make fp.disk
nasm boot.asm -o boot.bin -f bin
dd if=boot.bin of=floppya.img
rawwrite dd for windows version 0.5.
Written by John Newbigin <jn@it.swin.edu.au>
This program is covered by the GPL. See copying.txt for details
1+0 records in
1+0 records out

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

11. Ketikan **S** pada command prompt, kemudian klik power



12. Ketikan **notepad boot.asm**, dan search **loading kernel**



13. Ganti tulisan "Loading kernel ver 0.01" dengan "Belajar membuat BOOTSTRAP-LOADER" kemudian save

```

boot.asm - Notepad
File Edit Format View Help
        cluster      dw 0x0000

;=====
; Definisi NAMA file OS/Kernel
; 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
; Diawali dan diakhiri dengan tanda :
; -- 0x0D akhir baris
; -- 0x0A baris baru
; -- 0x00 karakter 'NULL' pembatas dengan data di bawahnya
;=====
        msgLoading    db 0x0D, 0x0A, "Belajar membuat BOOTSTRAP-LOADER", 0x0D, 0x0A, 0x00
        msgCRLF        db 0x0D, 0x0A, 0x00
        msgProgress    db ".", 0x00

;=====
; Teks yang di tampilkan saat terjadi kesalahan BOOT
;=====
        msgFailure     db 0x0D, 0x0A, "Maulana Lutfi S | L200170048", 0x00

;=====
; (4) BLOK BOOT SIGNATURE
;=====

        TIMES 510-($-$$) DB 0
        DW 0xAA55
;*****

```

14. Setelah di save, ketikan s pada command prompt, setelah itu tekan power

```

Bochs for Windows - Console
C:\OS\LAB\LAB2>notepad boot.asm
C:\OS\LAB\LAB2>boot.asm
C:\OS\LAB\LAB2>make fp.disk
nasm boot.asm -o boot.bin -f bin
dd if=boot.bin of=floppya.img
rewrite dd for windows version 0.5.
Written by John Newbigin <jnedit@win.
This program is covered by the GPL.
1+0 records in
1+0 records out
C:\OS\LAB\LAB2>s
C:\OS\LAB\LAB2>..\..\bochs-2.3.5\boch
000000000000i[RAPIC?l local apic in in
=====
Build from CVS snapshot.
=====
000000000000i[      l reading configu
000000000000i[      l installing win32
000000000000i[      l using log file bo

```

```

Bochs for Windows - Display
Plex86/Bochs VGABios 0.6a 19 Aug 2006
This VGA/VE 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: 1.183 $ $Date: 2007/09/10 20:00:29 $
Options: apmbios pcibios eltorito rombios32

Booting from Floppy...

Belajar membuat BOOTSTRAP-LOADER
.....
Maulana Lutfi S : L200170048_

```

15. Ketikan kernel.asm untuk mengompail kernel, setelah itu ketikan make kernel

```
C:\Windows\system32\cmd.exe
1+0 records in
1+0 records out
C:\OS\LAB\LAB2>s
C:\OS\LAB\LAB2>..\..\bochs-2.3.5\bochs -q -f bochsrc.bxrc
000000000000i[APIC?] local apic in  initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
000000000000i[      ] reading configuration from bochsrc.bxrc
000000000000i[      ] installing win32 module as the Bochs GUI
000000000000i[      ] using log file bochs.log
# In bx_win32_gui_c::exit(void)?
=====
Bochs is exiting with the following message:
[WGUI ] POWER button turned off.
=====
C:\OS\LAB\LAB2>kernel.asm
C:\OS\LAB\LAB2>make kernel
nasm kernel.asm -o kernel.bin -f bin
C:\OS\LAB\LAB2>
```

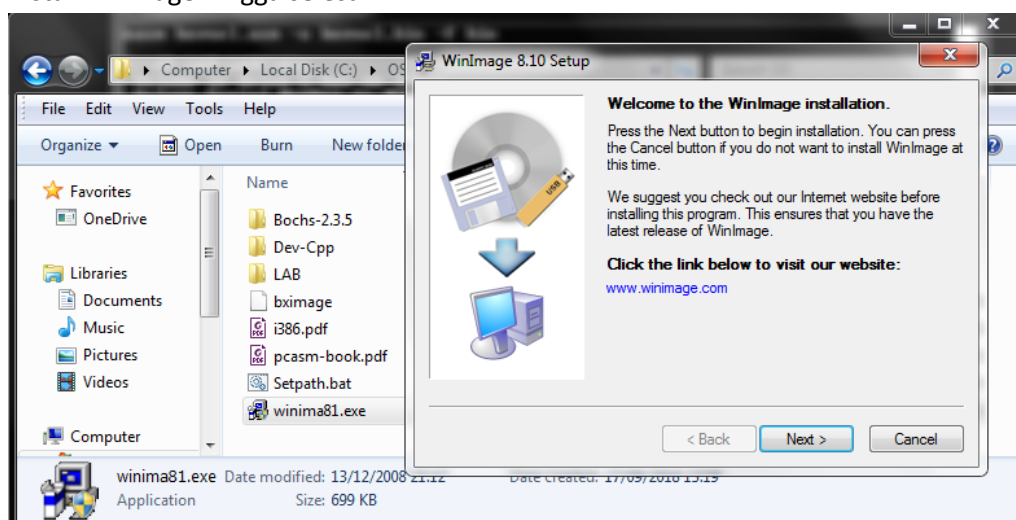
16. Kerikan dir untuk mengecek kernel.bin

```
C:\Windows\system32\cmd.exe
nasm kernel.asm -o kernel.bin -f bin
C:\OS\LAB\LAB2>dir
Volume in drive C has no label.
Volume Serial Number is 4CF6-EBAF

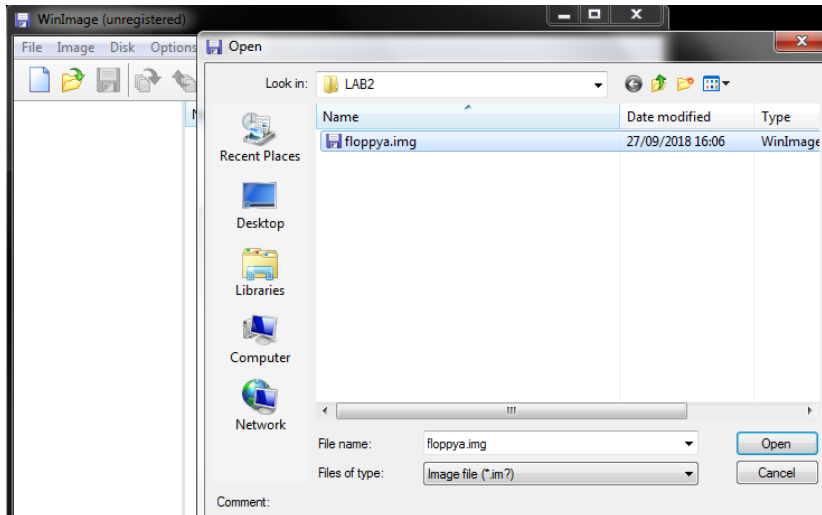
Directory of C:\OS\LAB\LAB2

19/09/2018  12:10    <DIR>          .
19/09/2018  12:10    <DIR>          ..
27/09/2018  16:08                10.153 bochs.log
15/12/2008  23:18                1.625 bochsrc.bxrc
27/09/2018  16:06                15.928 boot.asm
27/09/2018  16:06                512 boot.bin
16/09/2007  23:22                18.432 bximage.exe
27/02/2007  03:50               342.016 dd.exe
15/12/2008  20:52                 78 dosfp.bat
27/09/2018  16:06             1.474.560 floppy.aimg
19/09/2018  12:09                7.966 kernel.asm
27/09/2018  16:08                611 kernel.bin
15/12/2008  23:21                228 Makefile
15/12/2008  19:20                 44 s.bat
               12 File(s)            1.872.153 bytes
               2 Dir(s)          43.253.317.632 bytes free
C:\OS\LAB\LAB2>
```

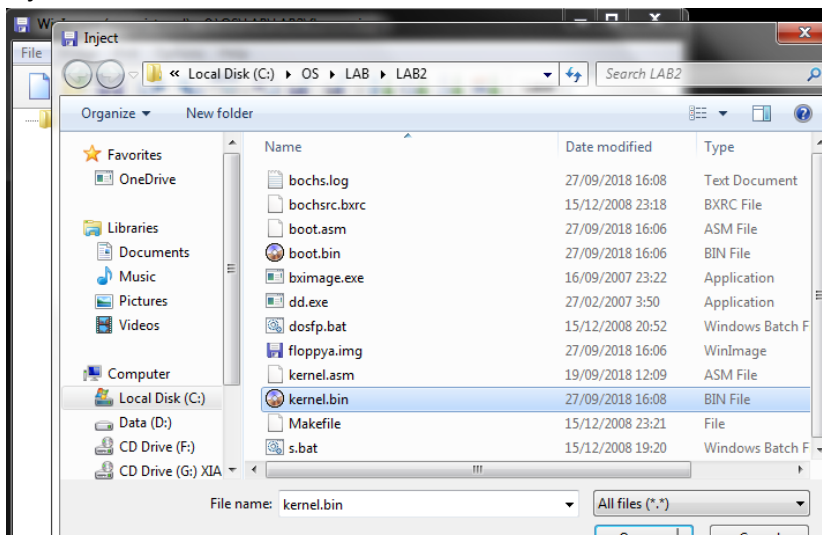
17. Instal winImage hingga selesai



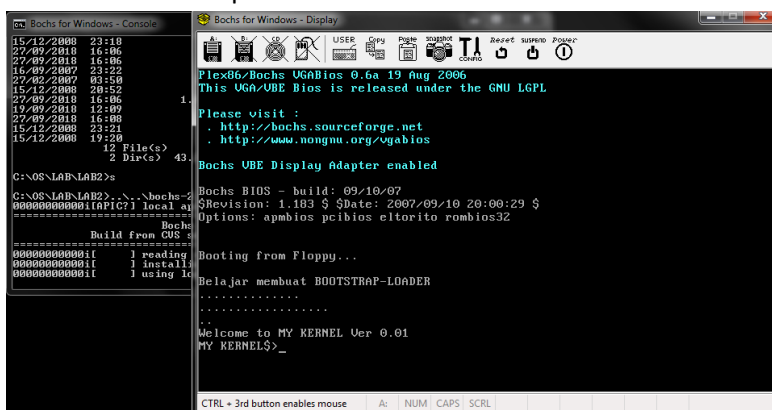
18. Buka WinImage dan open floppy.img pada direktori LAB2



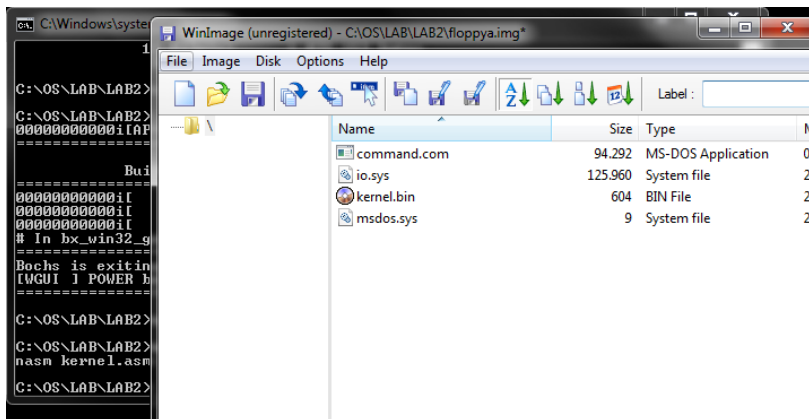
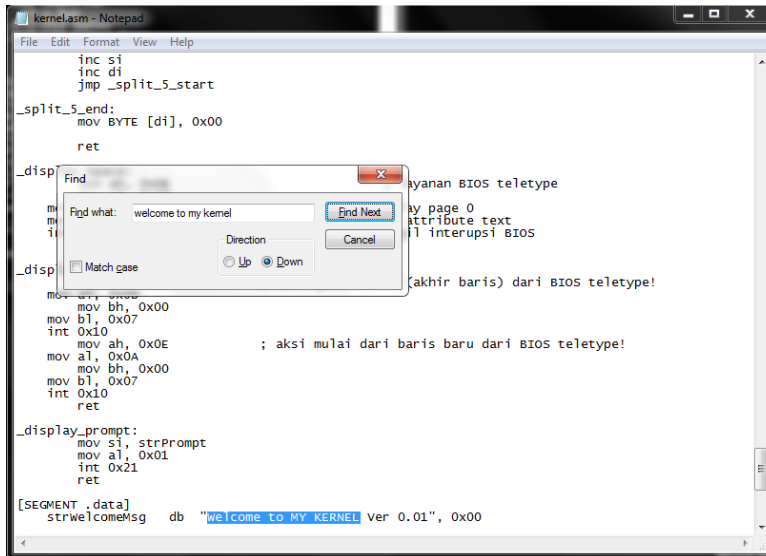
19. Injec kernel.bin kemudian save



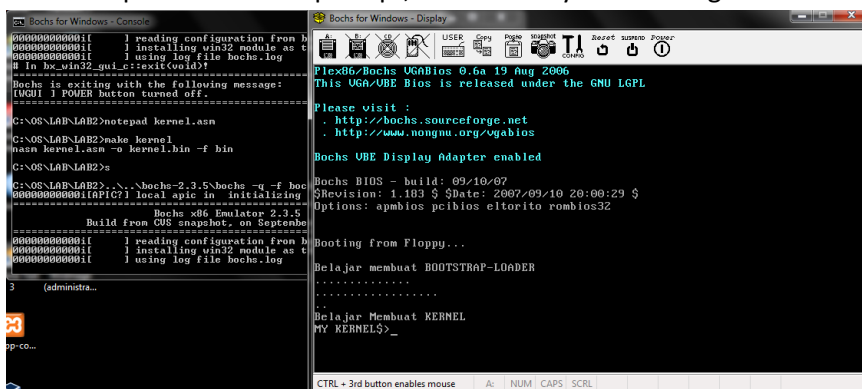
20. Memodifikasi teks pada file kernel.asm



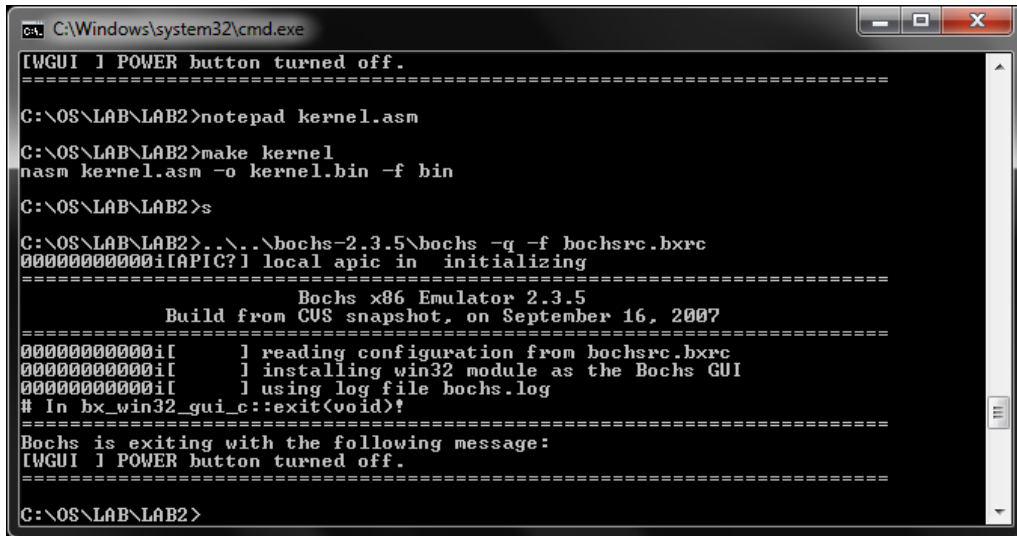
Mencari teks “welcome to my kernel ver 0.01” menjadi “belajar membuat kernel”



Kerikan S pada command prompt, maka teks nya sudah terganti



Jika sudah selesai sampai tampilan tersebut maka klik tombol power

A screenshot of a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The window has standard Windows window controls (minimize, maximize, close) in the top right corner. The command prompt shows a series of commands and their outputs. The commands are: 1. `notepad kernel.asm` 2. `make kernel` 3. `nasm kernel.asm -o kernel.bin -f bin` 4. `s` 5. `..\..\bochs-2.3.5\bochs -q -f bochsrc.bxrc` The output of the last command is a multi-line message from the Bochs x86 Emulator 2.3.5, indicating it is initializing, reading configuration, installing the win32 module, and using a log file. The message ends with "Bochs is exiting with the following message:" and "[WGUI] POWER button turned off." The command prompt then returns to the prompt `C:\OS\LAB\LAB2>`.

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

[ WGUI ] POWER button turned off.
=====
C:\OS\LAB\LAB2>notepad kernel.asm
C:\OS\LAB\LAB2>make kernel
nasm kernel.asm -o kernel.bin -f bin
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
# In bx_win32_gui_c::exit(void)?
=====
Bochs is exiting with the following message:
[ WGUI ] POWER button turned off.
=====
C:\OS\LAB\LAB2>
```