

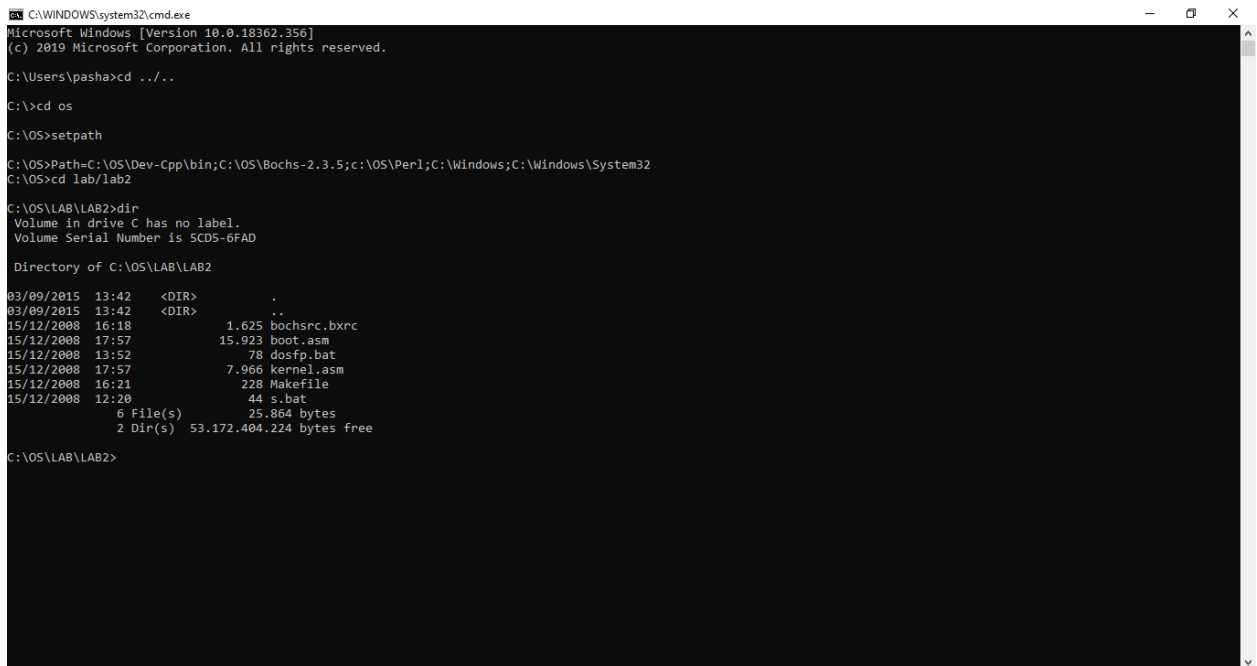
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**NIM : L200180123**

**Kelas : C**

## **Tugas Modul 2**

1. Menuju ke direktori kerja
2. Masuk ke direktori kerja “C:\OS”
3. Melihat isi direktori di dalam folder OS dengan perintah dir pada command prompt
4. Menjalankan file setpath untuk mengatur lingkungan kerja
5. Ketik “cd LAB/LAB2” dilanjutkan perintah “dir” untuk melihat file didalamnya
6. Menyiapkan file image “floppya.img”



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.18362.356]
(c) 2019 Microsoft Corporation. All rights reserved.

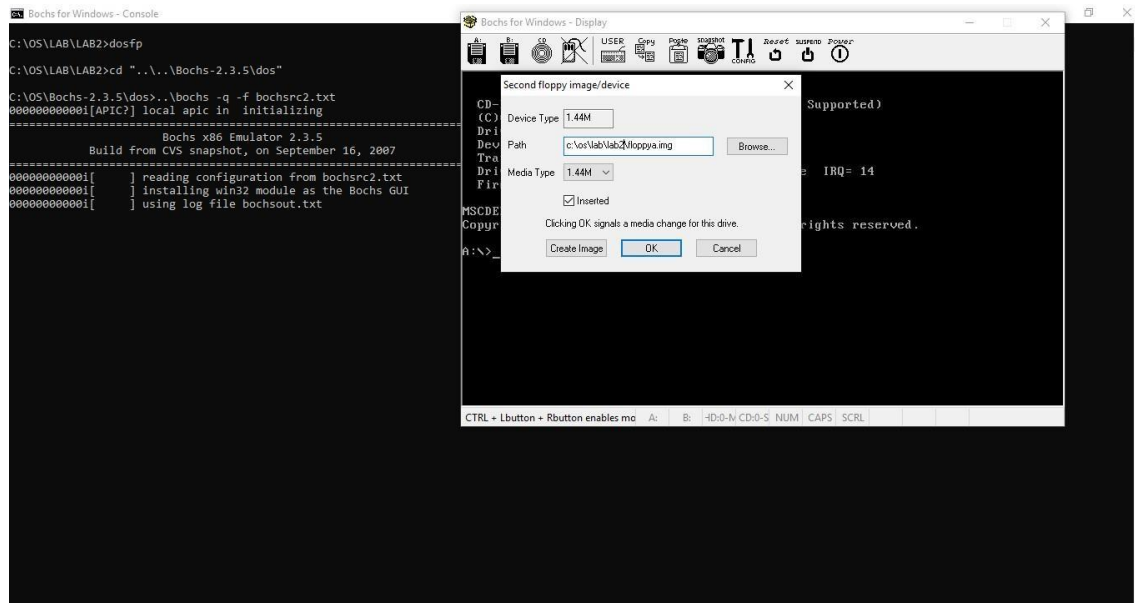
C:\Users\pasha>cd ../../
C:\>cd os
C:\OS>setpath
C:\OS>Path=C:\OS\Dev-Cpp\bin;C:\OS\Bochs-2.3.5;c:\OS\Perl;c:\Windows;c:\Windows\System32
C:\OS>cd lab/lab2
C:\OS\LAB\LAB2>dir
Volume in drive C has no label.
Volume Serial Number is 5CD5-6FAD

Directory of C:\OS\LAB\LAB2

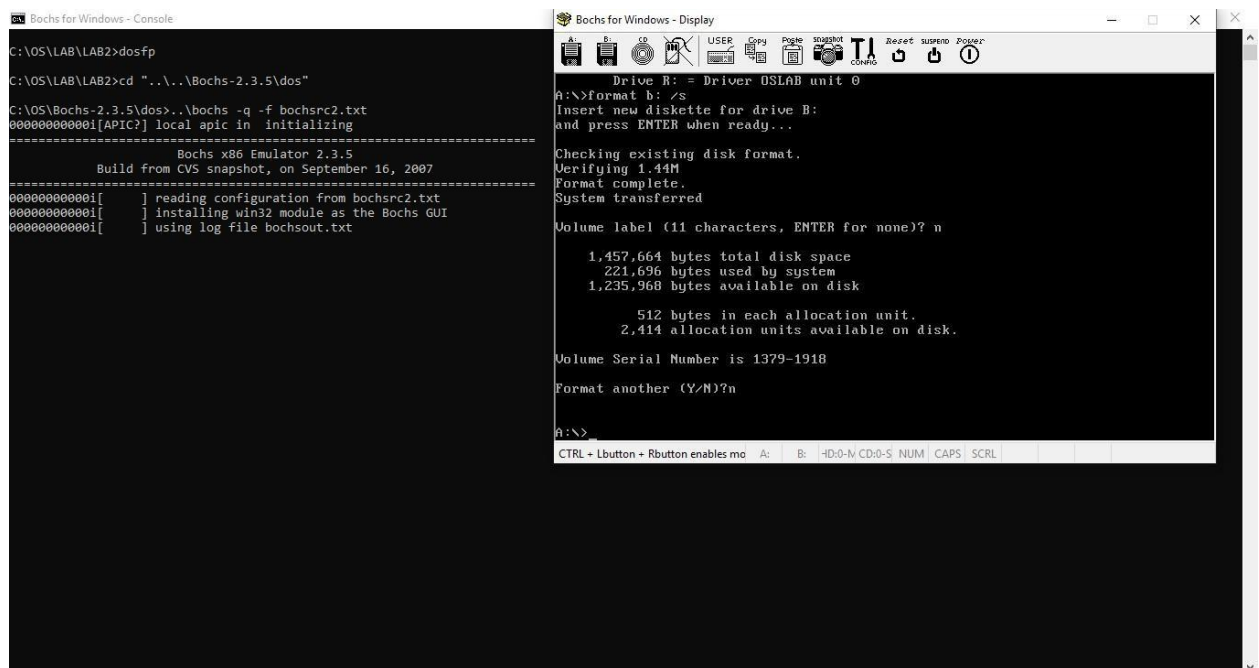
03/09/2015  13:42    <DIR>      .
03/09/2015  13:42    <DIR>      ..
15/12/2008  16:18             1,625 bochsrc.bxrc
15/12/2008  17:57           15,923 boot.asm
15/12/2008  13:52              78 dosfp.bat
15/12/2008  17:57           7,966 kernel.asm
15/12/2008  16:21             228 Makefile
15/12/2008  12:20              44 s.bat
               6 File(s)          25,864 bytes
               2 Dir(s)  53,172,404,224 bytes free

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

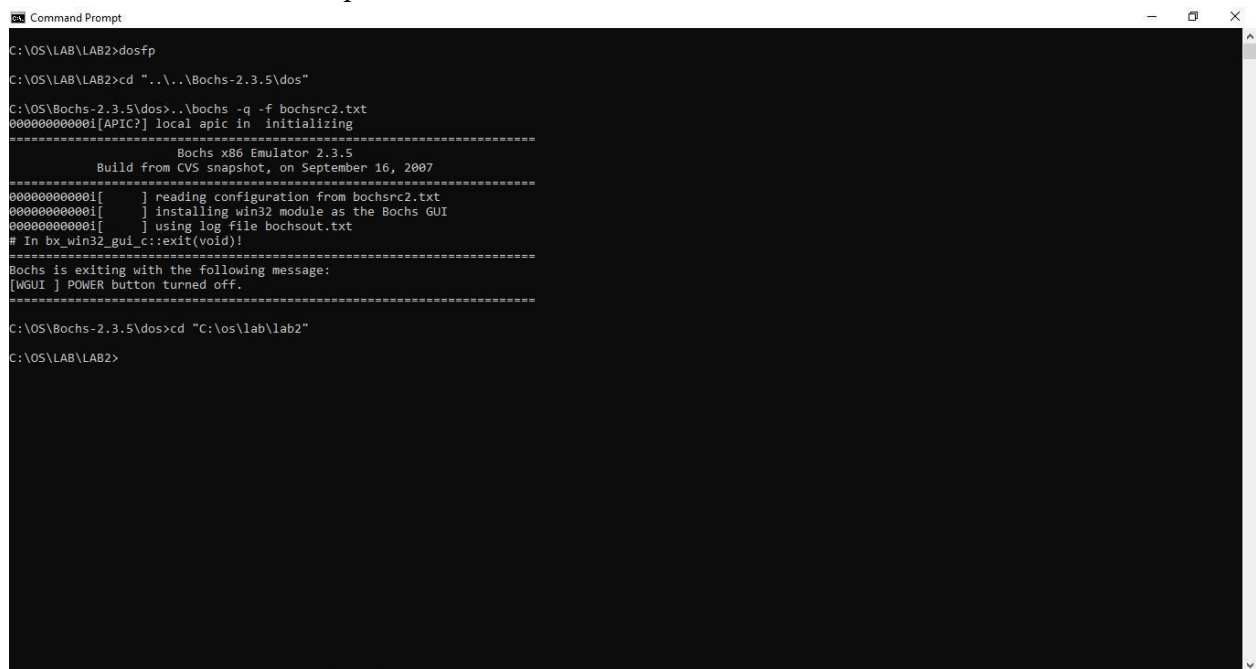
7. Memformat file “floppya.img” dan mengisi dengan sistem operasi DOS versi 7
8. Jalankan perintah “dosfp”
9. Pada Bochs klik menu gambar floppy disk nomor dua dari kiri atau B
10. Atur lokasi file image sehingga menunjukkan file “floppya.img” pada LAB2 dengan klik “Browser” dan atur lalu “Ok”



11. Pada prompt “A:>” ketik dengan “A:>Format B:/S”
12. Jika tidak ada kesalahan maka “floppya.img” maka dapat digunakan untuk booting.

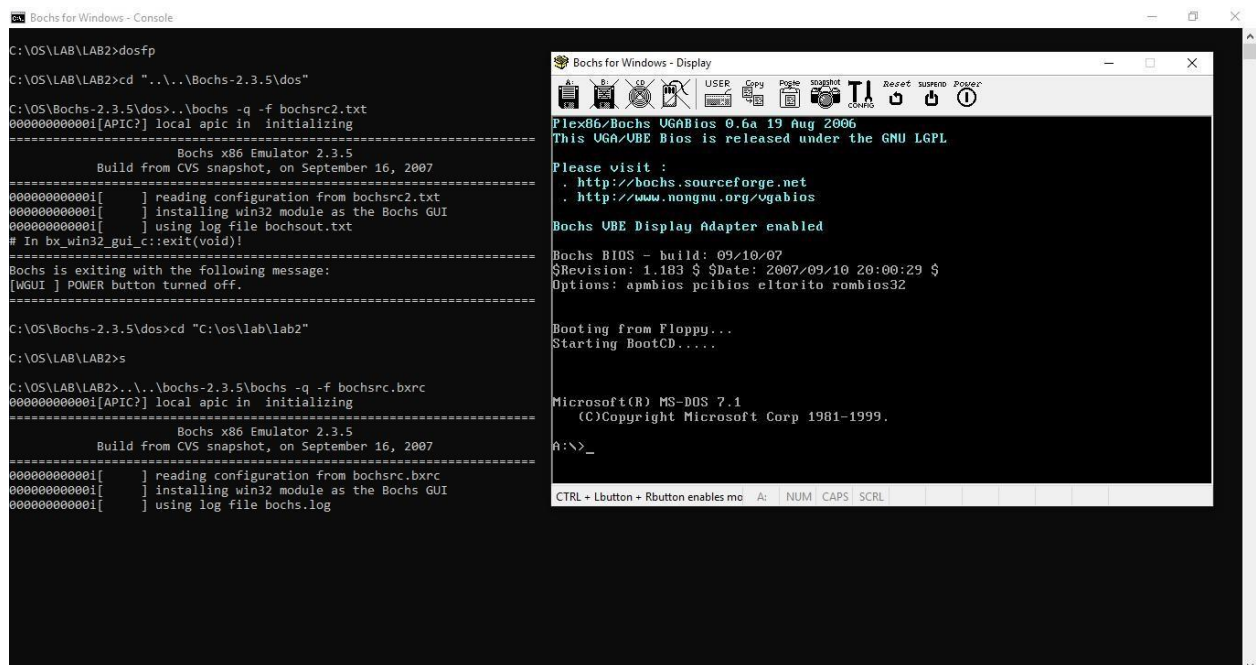


13. Tutup Windows “Bochs” klik menu “Power”. Pada windows “Command Prompt” akan tampak bekas aktifitas “Bochs” seperti dibawah ini.



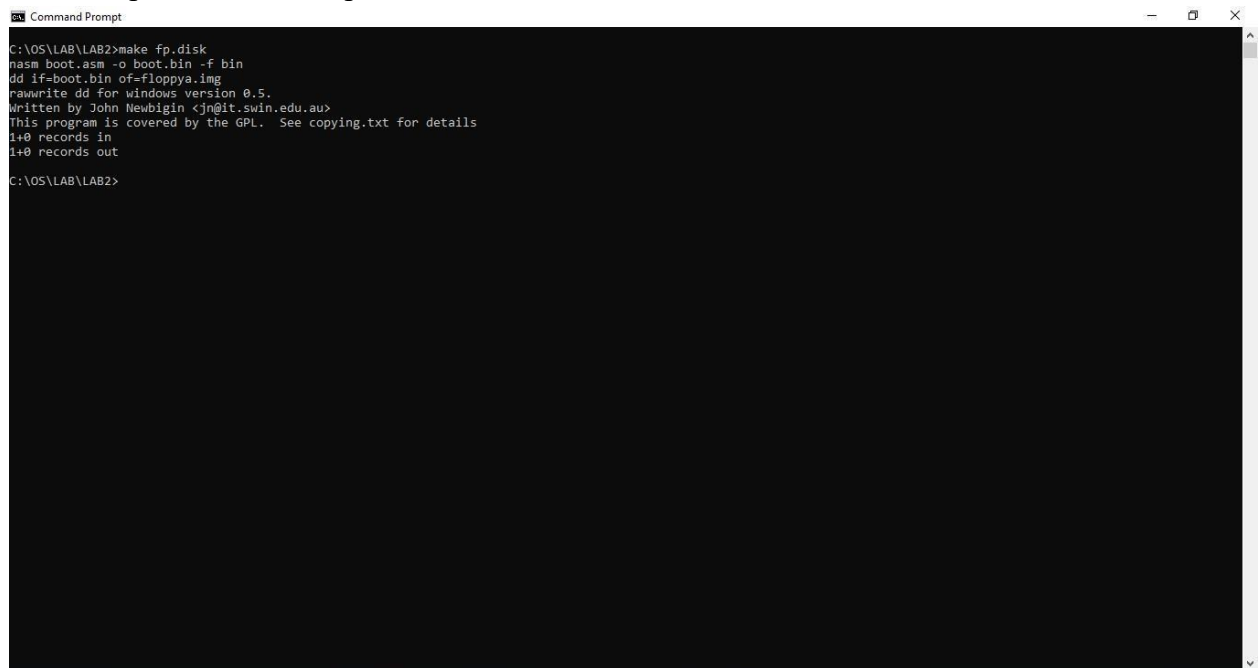
```
C:\OS\LAB\LAB2>dosfp
C:\OS\LAB\LAB2>cd "..\..\Bochs-2.3.5\dos"
C:\OS\Bochs-2.3.5\dos>..\bochs -q -f bochsrc2.txt
0000000000i[APIC?] local apic in  initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
0000000000i[      ] reading configuration from bochsrc2.txt
0000000000i[      ] installing win32 module as the Bochs GUI
0000000000i[      ] 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\dos>cd "C:\os\lab\lab2"
C:\OS\LAB\LAB2>
```

14. BOOT PC-Simulator dengan file “floppya.img”
15. Pindah direktori kerja pada windows “Command Prompt” dan jalankan perintah “s” lalu “Enter”



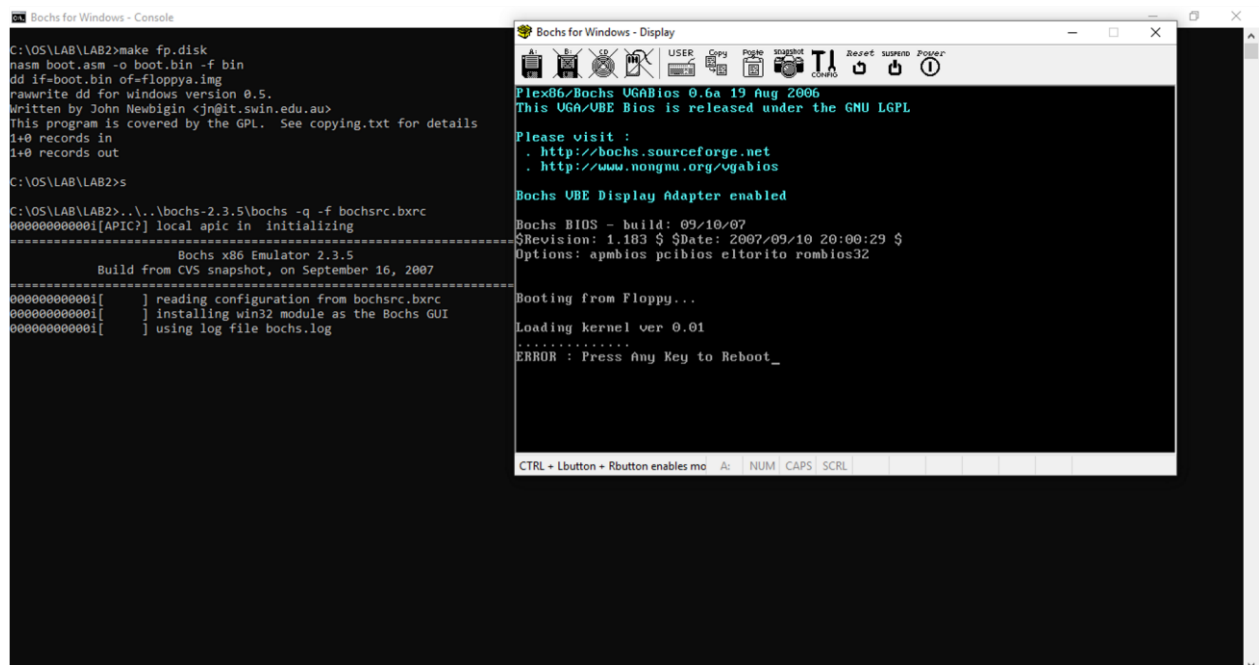
```
C:\OS\LAB\LAB2>dosfp
C:\OS\LAB\LAB2>cd "..\..\Bochs-2.3.5\dos"
C:\OS\Bochs-2.3.5\dos>..\bochs -q -f bochsrc2.txt
0000000000i[APIC?] local apic in  initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
0000000000i[      ] reading configuration from bochsrc2.txt
0000000000i[      ] installing win32 module as the Bochs GUI
0000000000i[      ] 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\dos>cd "C:\os\lab\lab2"
C:\OS\LAB\LAB2>s
C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2>..\bochs -q -f bochsrc.bxrc
0000000000i[APIC?] local apic in  initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
0000000000i[      ] reading configuration from bochsrc.bxrc
0000000000i[      ] installing win32 module as the Bochs GUI
0000000000i[      ] using log file bochs.log
=====
```

16. Kompilasi source code “boot.asm” dan memindah hasil ke bootsector “floopya.img”.
17. Pindah ke direktori kerja “LAB2”
18. Jalankan perintah “make fp.disk”



```
Command Prompt
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>
```

19. Jalankan PC-Simulator ketik “s” lalu “Enter” maka akan tampil seperti ini



```
Bochs for Windows - Console
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>s
C:\OS\LAB\LAB2>..\bochs-2.3.5\bochs -q -f bochsrc.bxrc
000000000000[APIC?] local apic in initializing
-----
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
-----
000000000000[ ] reading configuration from bochsrc.bxrc
000000000000[ ] installing win32 module as the Bochs GUI
000000000000[ ] using log file bochs.log

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

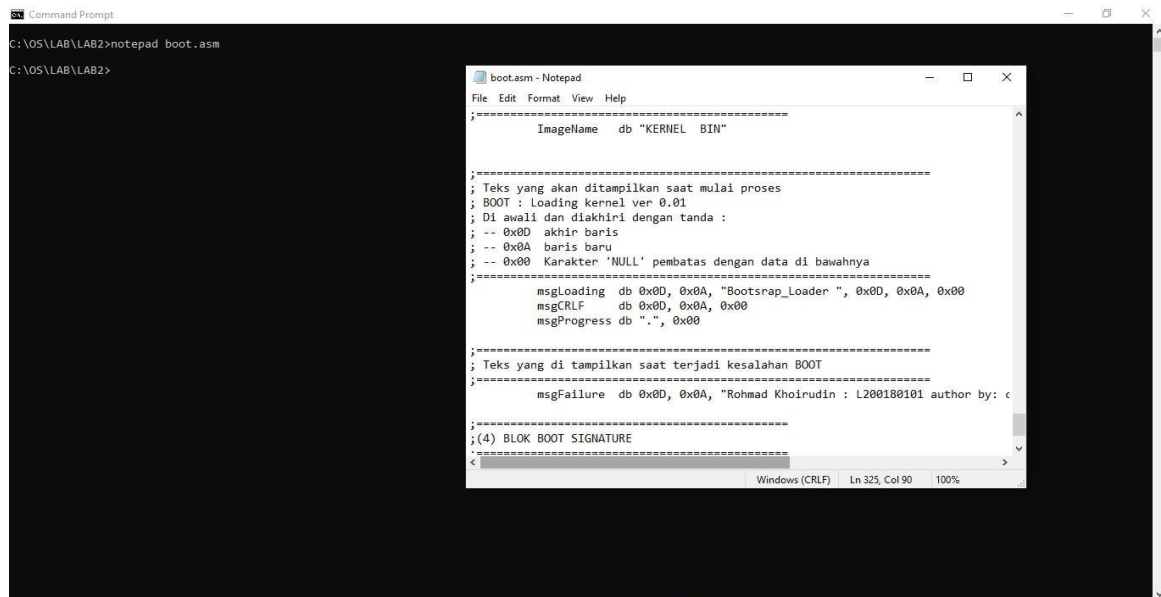
Bochs VBE Display Adapter enabled
Bochs BIOS - build: 09/10/07
$Revision: 1.183 $ $Date: 2007/09/10 20:00:29 $
Options: apmbios pcibios eltorito rombios32

Booting from Floppy...
Loading kernel ver 0.01
.....
ERROR : Press Any Key to Reboot_

CTRL + Lbutton + Rbutton enables mo A: NUM CAPS SCRL
```

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

21. Sunting baris “Loading kernel ver 0.01” menjadi dengan “Belajar membuat BOOTSTRAP\_LOADER”
22. Sunting juga baris “ERROR: Press Any Key to Reboot” dengan cara yang sama dengan nama “msgFailure”
23. Simpan file “boot.asm” dengan CTRL+S

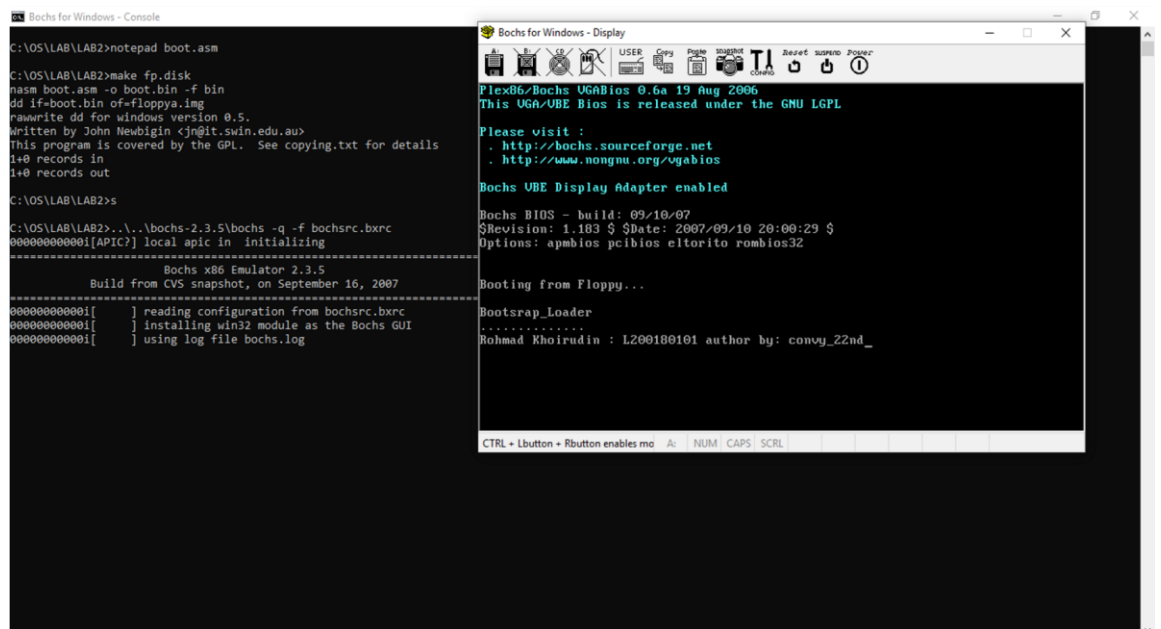


```

boot.asm - Notepad
File Edit Format View Help
;=====
; ImageName db "KERNEL BIN"
;=====
; Teks yang akan ditampilkan saat mulai proses
; BOOT : Loading kernel ver 0.01
; Di awal dan diakhir dengan tanda :
; -- 0x00 akhir baris
; -- 0x0A baris baru
; -- 0x00 Karakter 'NULL' pembatas dengan data di bawahnya
;=====
; msgLoading db 0x00, 0x0A, "Bootstrap_Loader ", 0x00, 0x0A, 0x00
; msgCRLF db 0x0D, 0x0A, 0x00
; msgProgress db ".", 0x00
;=====
; Teks yang di tampilkan saat terjadi kesalahan BOOT
;=====
; msgFailure db 0x00, 0x0A, "Rohmad Khoirudin : L200180101 author by: c
;=====
; (4) BLOK BOOT SIGNATURE
;=====

```

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



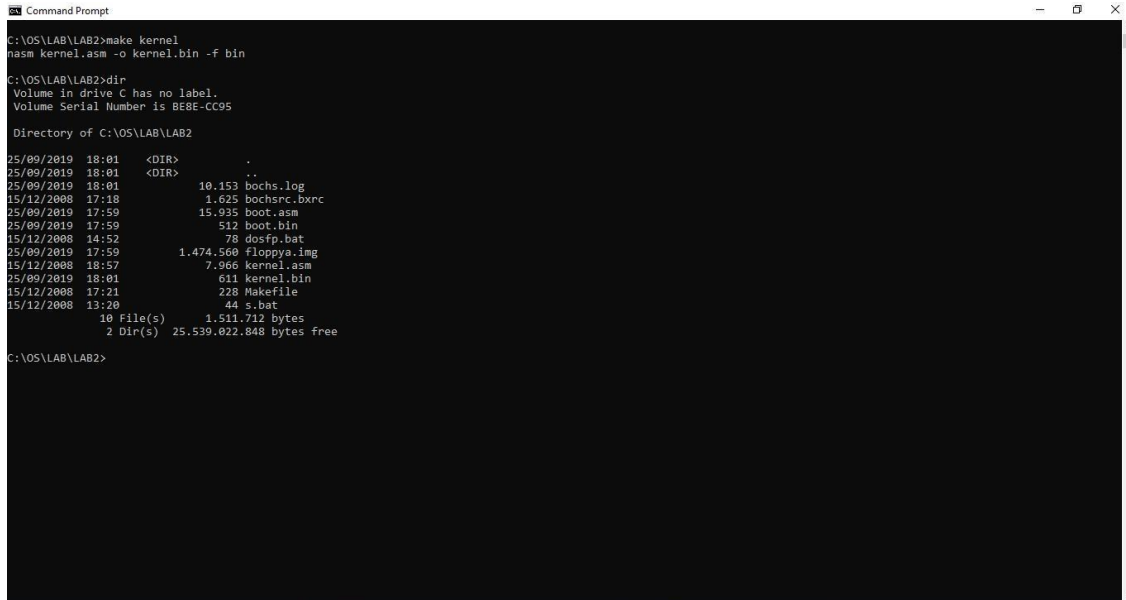
```

Bochs for Windows - Console
C:\OS\LAB\LAB2>notepad 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>s
C:\OS\LAB\LAB2>..\bochs-2.3.5\bochs -q -f bochsrc.bxrc
000000000000[APIC?] local apic in initializing
-----
Bochs X86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
-----
000000000000[ ] reading configuration from bochsrc.bxrc
000000000000[ ] installing win32 module as the Bochs GUI
000000000000[ ] using log file bochs.log
-----
Bochs BIOS - build: 09/10/07
$Revision: 1.183 $ $Date: 2007/09/10 20:00:29 $
Options: apmbios pcibios eltorito rombios32
Booting from Floppy...
Bootstrap_Loader
-----
Rohmad Khoirudin : L200180101 author by: convy_22nd_
CTRL + Lbutton + Rbutton enables mo NUM, CAPS, SCRL

```

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

27. Lakukan proses kompilasi untuk menghasilkan file “kernel.bin”
28. Lalu jalankan perintah “make kernel”
29. Apabila tidak ada kesalahan, berarti proses kompilasi berhasil pada direktori kerja dan terdapat file baru yaitu “kernel.bin”
30. Ketik perintah “dir” untuk melihat isi file didalamnya



```

C:\OS\LAB\LAB2>make kernel
nasm kernel.asm -o kernel.bin -f bin

C:\OS\LAB\LAB2>dir
Volume in drive C has no label.
Volume Serial Number is BE8E-CC95

Directory of C:\OS\LAB\LAB2

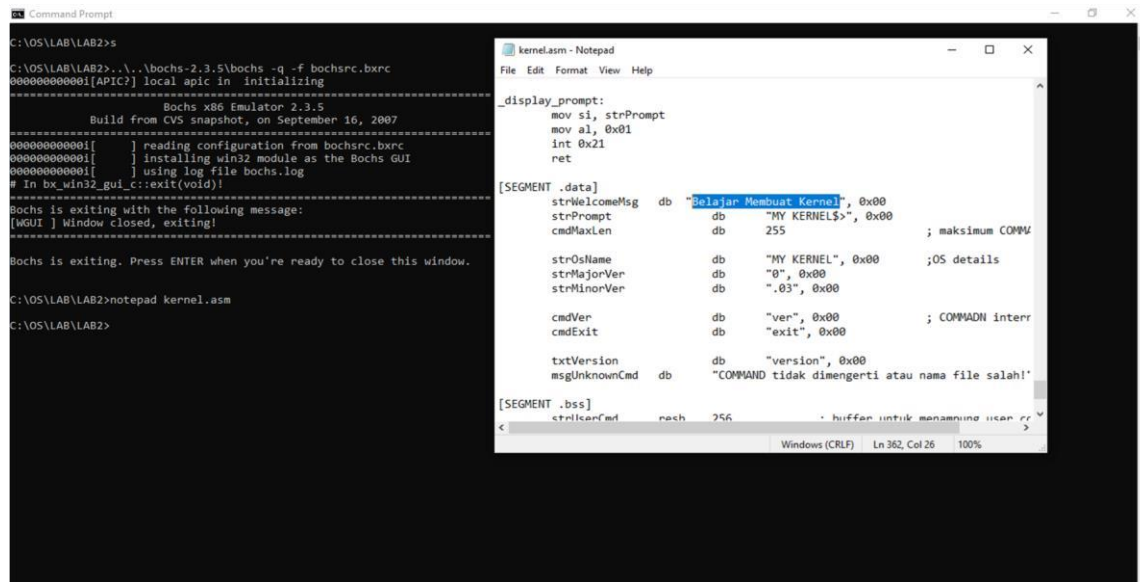
25/09/2019  18:01    <DIR>          .
25/09/2019  18:01    <DIR>          ..
25/09/2019  18:01                10.153 bochs.log
15/12/2008  17:18                1.625 bochssrc.bxrc
25/09/2019  17:59                15.935 boot.asm
25/09/2019  17:59                 512 boot.bin
15/12/2008  14:52                 78 dosfp.bat
25/09/2019  17:59            1.474.568 floppy.img
15/12/2008  18:57                 7.966 kernel.asm
25/09/2019  18:01                 611 kernel.bin
15/12/2008  17:21                 228 Makefile
15/12/2008  13:28                  44 s.bat
                10 File(s)      1.511.712 bytes
                2 Dir(s)  25.539.022.848 bytes free

C:\OS\LAB\LAB2>

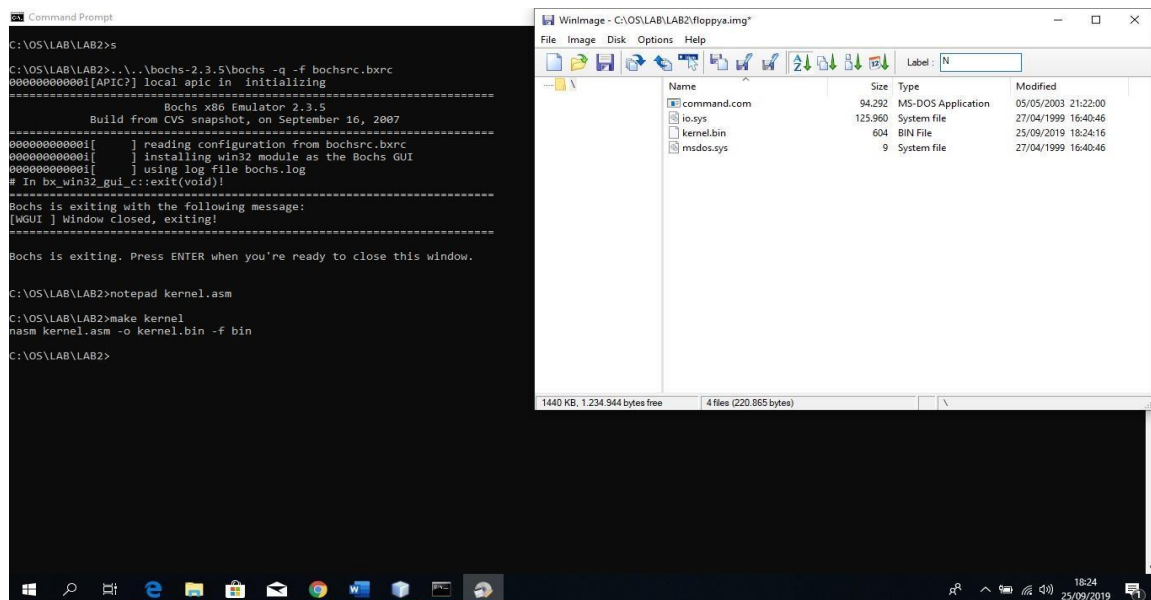
```

31. Memindahkan file “kernel.bin” ke dalam file image “floppya.img”
32. Untuk melakukan ini dengan menggunakan program shareware namanya “winimage”
33. Buka direktori kerja “C:\OS\LAB\LAB2” dengan Windows Explore
34. Klik double pada file “floppya.img” atau panggil program winimage klik “Start | All Programs| Winimage| Winimage
35. Kemudian klik open dan cari file “floppya.img” pada direktori kerja untuk memasukkan file “kernel.bin” pada Windows “Winimage” klik menu “image| inject”
36. Lalu cari file “kernel.bin” pada direktori kerja dan OK. Lalu simpan dengan “File| Save” dan keluar dari Winimage





42. Ulangi proses kompilasi dengan perintah “make kernel” lalu “Enter”
43. Lalu lakukan proses memindahkan file “kernel.bin” kedalam file “floppya.img” dengan Winimage



44. Jalankan PC-Simulator ketik “s” lalu “Enter” maka akan tampil seperti ini



