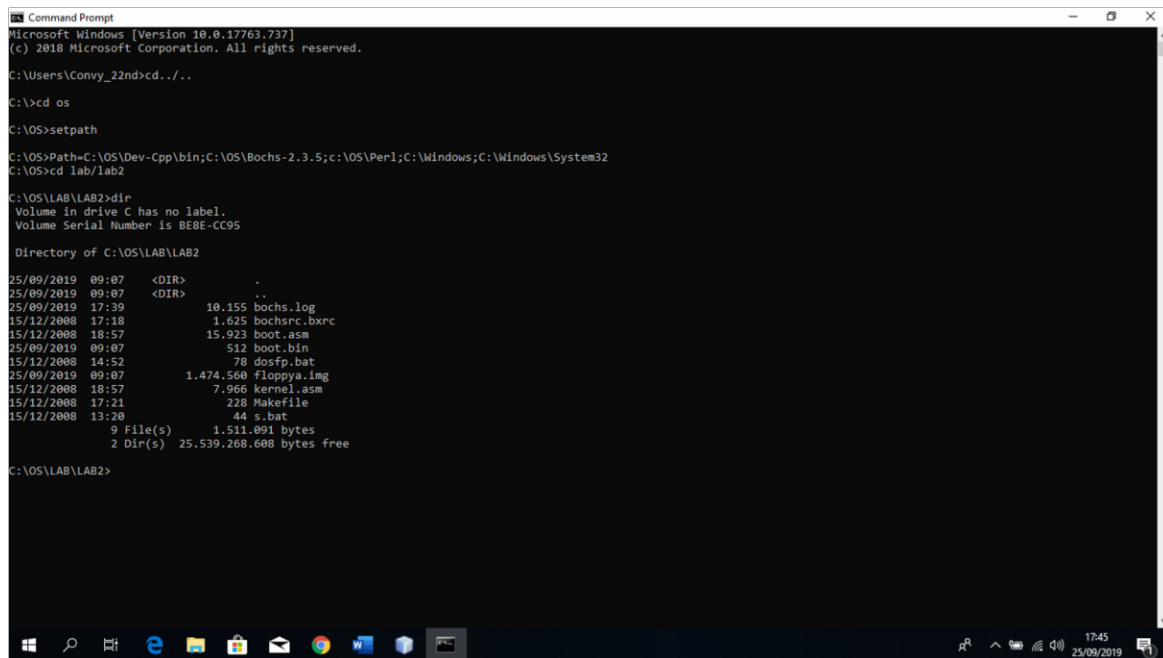


Nama : Angga Pratama  
Nim : L200180109  
Kelas : C

## Modul 2

- Menuju 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 “floppya.img”



```
Microsoft Windows [Version 10.0.17763.737]
(c) 2018 Microsoft Corporation. All rights reserved.

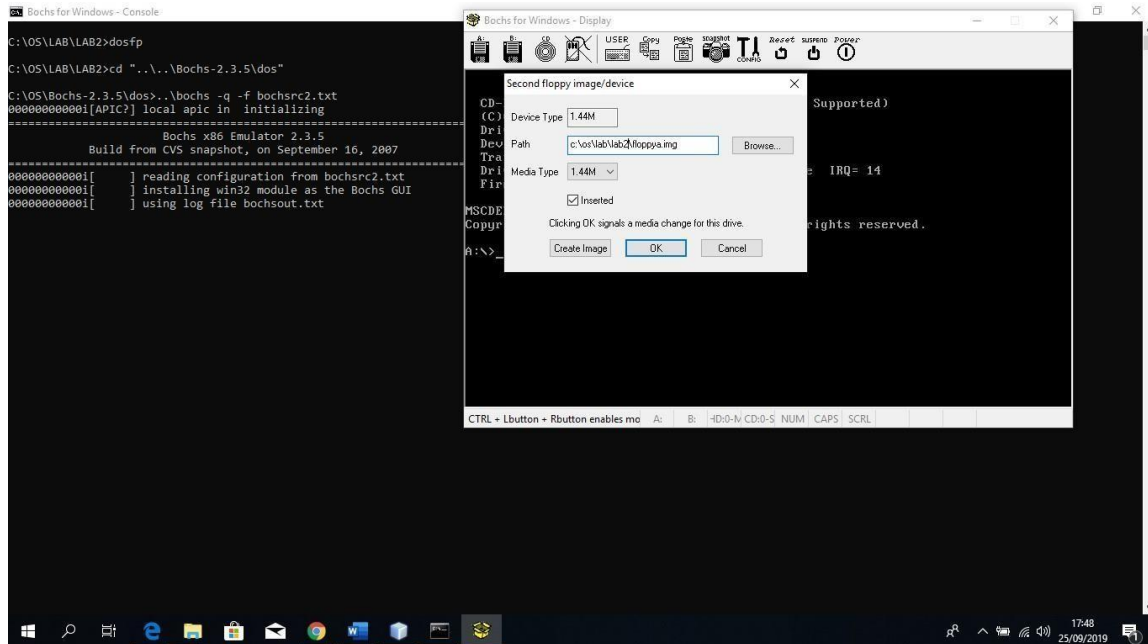
C:\Users\Convy_22nd>cd ../..
C:\>cd os
C:\OS>setpath
C:\OS>Path=C:\OS\Dev-Cpp\bin;C:\OS\Bochs-2.3.5;c:\OS\Perl;c:\Windows;c:\Windows\System32
C:\OS>cd lab/lab2
C:\OS\LAB\LAB2>dir
Volume in drive C has no label.
Volume Serial Number is BEBE-CC95

Directory of C:\OS\LAB\LAB2

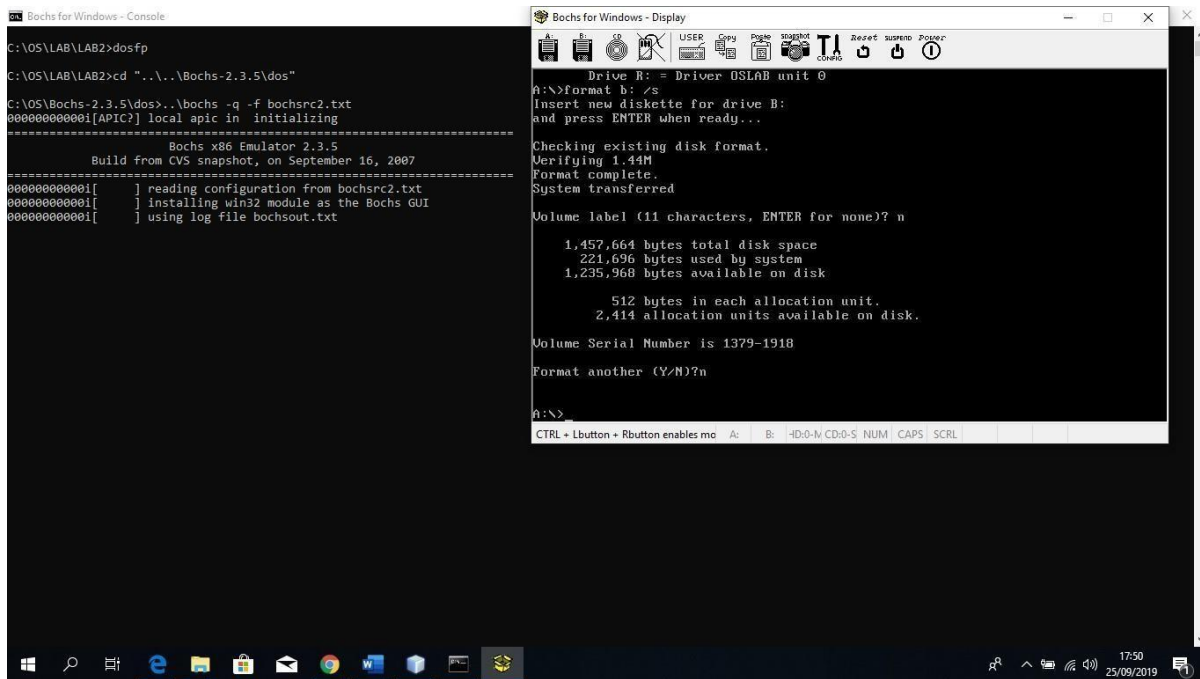
25/09/2019  09:07    <DIR>      .
25/09/2019  09:07    <DIR>      ..
25/09/2019  17:39             10.155 bochs.log
15/12/2008  17:18             1.625 bochssrc.bxrc
15/12/2008  18:57             15.923 boot.asm
25/09/2019  09:07              512 boot.bin
15/12/2008  14:52              78 dosfp.bat
25/09/2019  09:07      1.474.560 floppya.img
15/12/2008  18:57             7.966 kernel.asm
15/12/2008  17:21             228 Makefile
15/12/2008  13:20              44 s.bat
               9 File(s)      1.511.091 bytes
               2 Dir(s)      25.539.268.608 bytes free

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

- Memformat file “floppya.img” dan mengisi dengan system Operasi DOS versi 7
- alankan perintah “dosfp”
- Pada Bochs klik menu gambar floppy disk nomor dua dari kanan atau B
- Atur lokasi file image sehingga menunjukkan file “floppya.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:\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
00000000000i[APIC?] local apic in  initializing
=====
                Bochs x86 Emulator 2.3.5
                Build from CVS 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\dos>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”

```

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
00000000000i[APIC?] local apic in  initializing
=====
                Bochs x86 Emulator 2.3.5
                Build from CVS 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\dos>cd "C:\os\lab\lab2"
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
=====

```

Bochs for Windows - Display

```

FlexB6/Bochs UGA/Bios 0.6a 19 Aug 2006
This UGA/UE BIOS is released under the GNU LGPL

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

Bochs UBE 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) MS-DOS 7.1
(C)Copyright Microsoft Corp 1981-1999.

A:\>_
CTRL + Lbutton + Rbutton enables mo  A: | NUM | CAPS | SCRL |

```

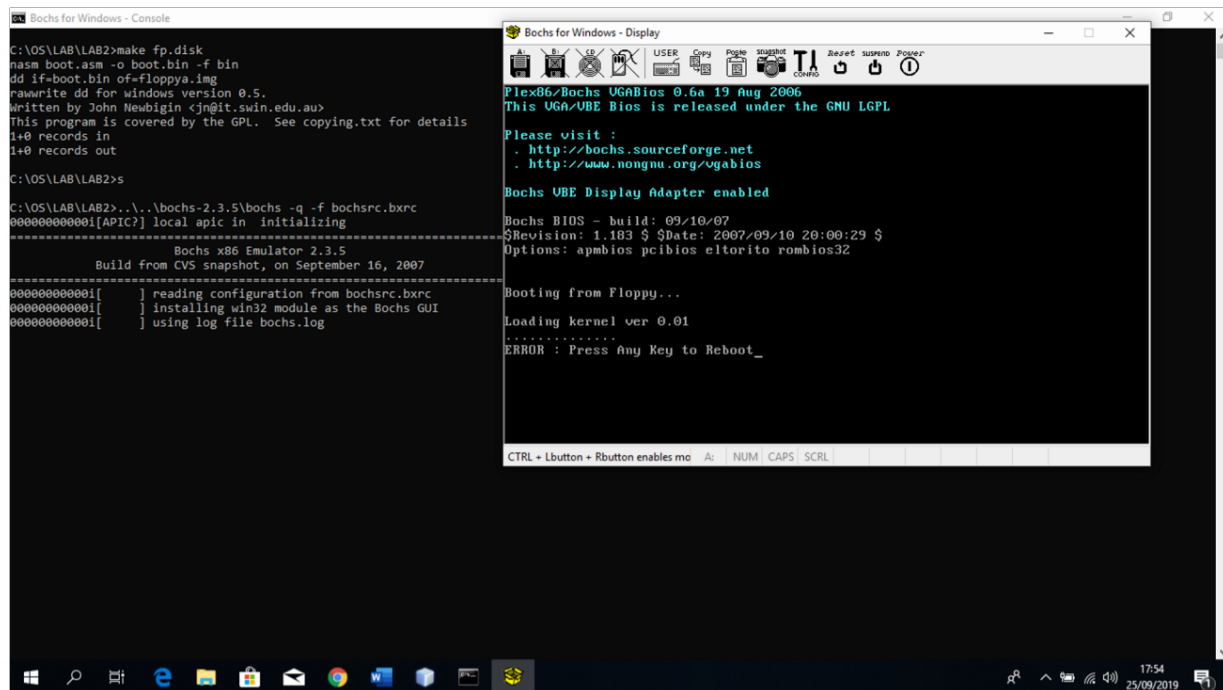
- Kompilasi source code “boot.asm” dan memindah hasil ke bootsector “floppya.img”.  
Pindah ke direktori kerja “LAB2”
- Jalankan perintah “make fp.disk”

```

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>

```

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



- 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 “msgFailure”
- Simpan file “boot.asm” dengan CTRL+S

The screenshot shows a Windows desktop with a Command Prompt window open at the directory C:\OS\LAB\LAB2. The Command Prompt shows the command 'notepad boot.asm' being executed. A Notepad window titled 'boot.asm - Notepad' is open, displaying the contents of the 'boot.asm' file. The file contains assembly code for a boot sector, including a message 'Loading kernel ver 0.01' and an error message 'ERROR: Press Any Key to Reboot'. The Notepad window is showing the text 'Loading kernel ver 0.01' and the error message 'ERROR: Press Any Key to Reboot'.

- 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

The screenshot shows a PC simulator window titled 'Bochs for Windows - Console' and 'Bochs for Windows - Display'. The console window shows the command 'notepad boot.asm' being executed, followed by 'make fp.disk' and 's' to start the simulation. The display window shows the BIOS boot process, including the message 'Booting from Floppy...' and the loading of the 'Bootstrap Loader'. The display window also shows the BIOS version 'Flex86/Bochs UGABios 0.6a 19 Aug 2006' and the author 'Rohmad Khoirudin : L200180101 author by: convy\_22nd\_'.

- 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:\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 BEBE-CC95

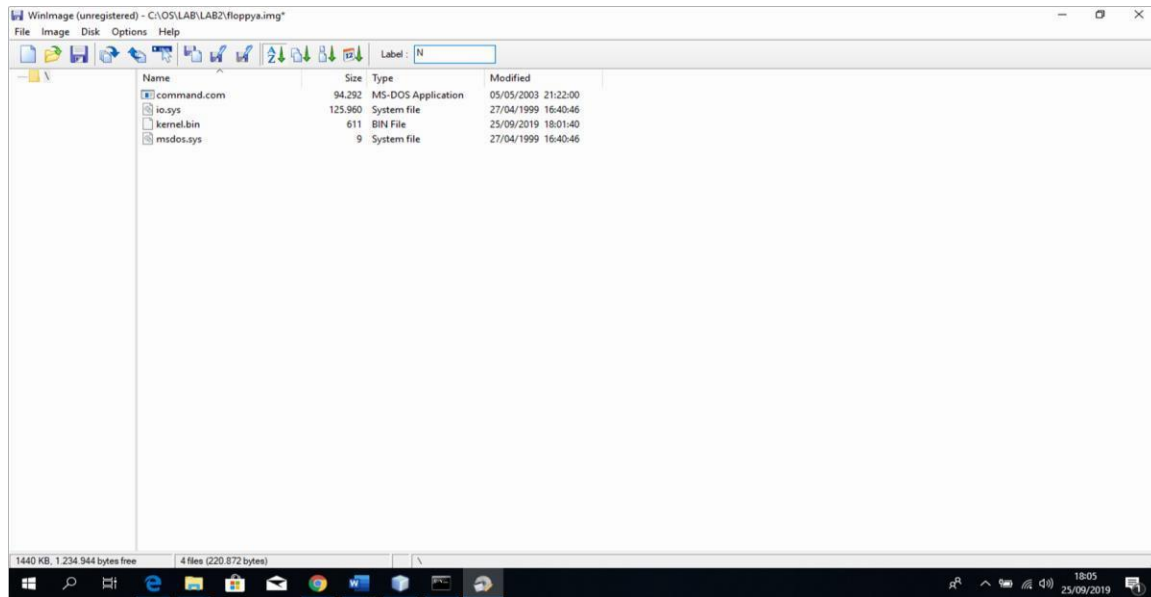
Directory of C:\OS\LAB\LAB2

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          1.474.560 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  13:20              48 s.bat
                10 File(s)      1.511.712 bytes
                2 Dir(s)      25.539.022.848 bytes free

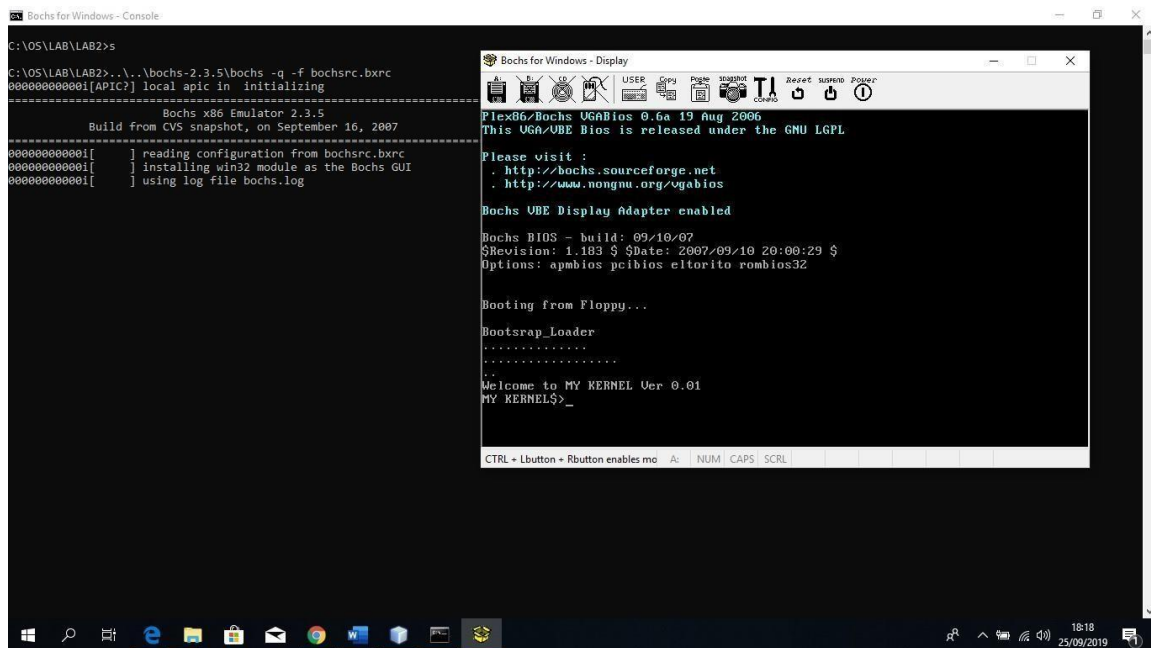
C:\OS\LAB\LAB2>

```

- 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

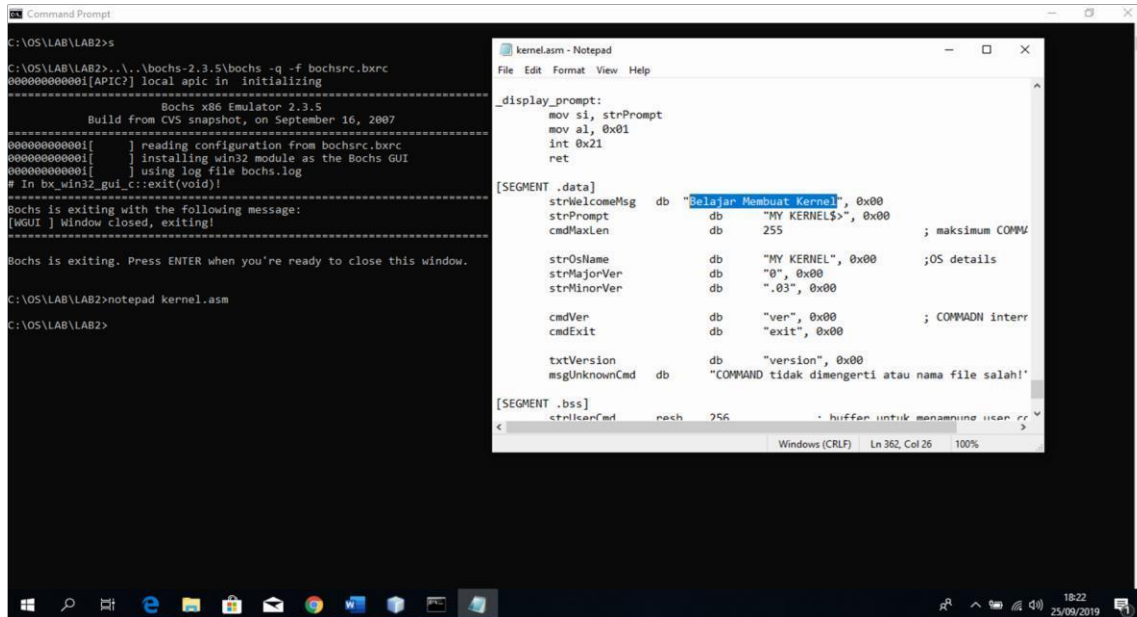


- Kembali ke Windows “Command Prompt” direktori kerja
- Jalankan PC-Simulator ketik “s” lalu “Enter” maka akan tampil seperti ini

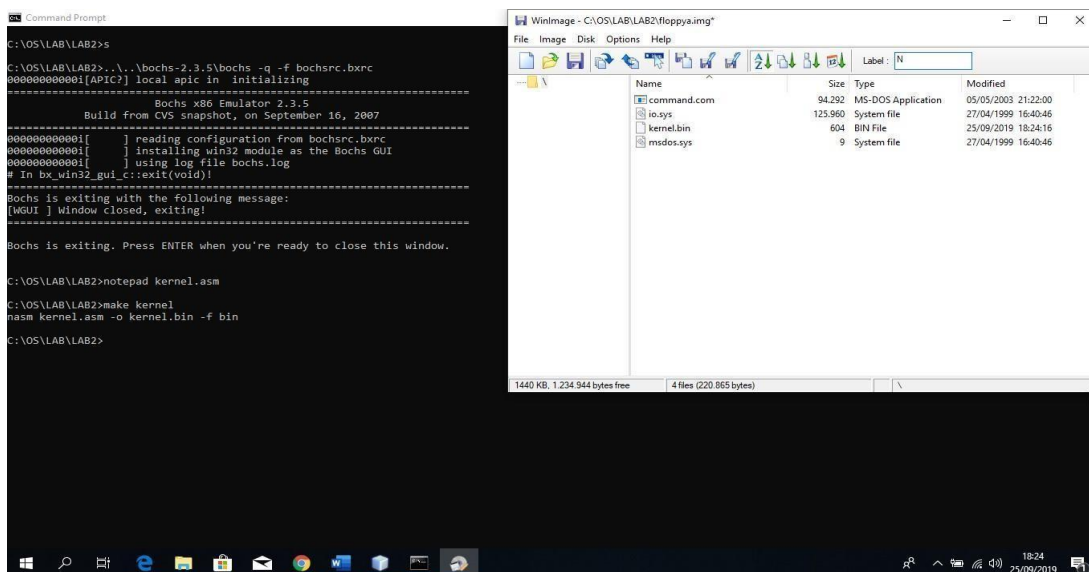




- Memodifikasi file “kernel.asm”
- Jalankan perintah “Notepad kernel.asm” lalu “Enter”. Cari teks “Welcome to MY KERNEL. . . .” ganti dengan teks “Belajar membuat KERNEL”
- Lalu simpan file “kernel.asm” tekan CTRL+S



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





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

```

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
# In bx_win32_gui_c::exit(void)!
-----
Bochs is exiting with the following message:
[MGUI ] window closed, exiting!
-----
Bochs is exiting. Press ENTER when you're ready to close this window.

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
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
-----
Flex06/Bochs UGABios 0.6a 19 Aug 2006
This UGA/UBE Bios is released under the GNU LGPL

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

Bochs UBE 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...

Bootsrap Loader
.....
..
Belajar Membuat Kernel
MY KERNEL$>
-----
CTRL = Lbutton + Rbutton enables me  NUM CAPS SCRL
  
```