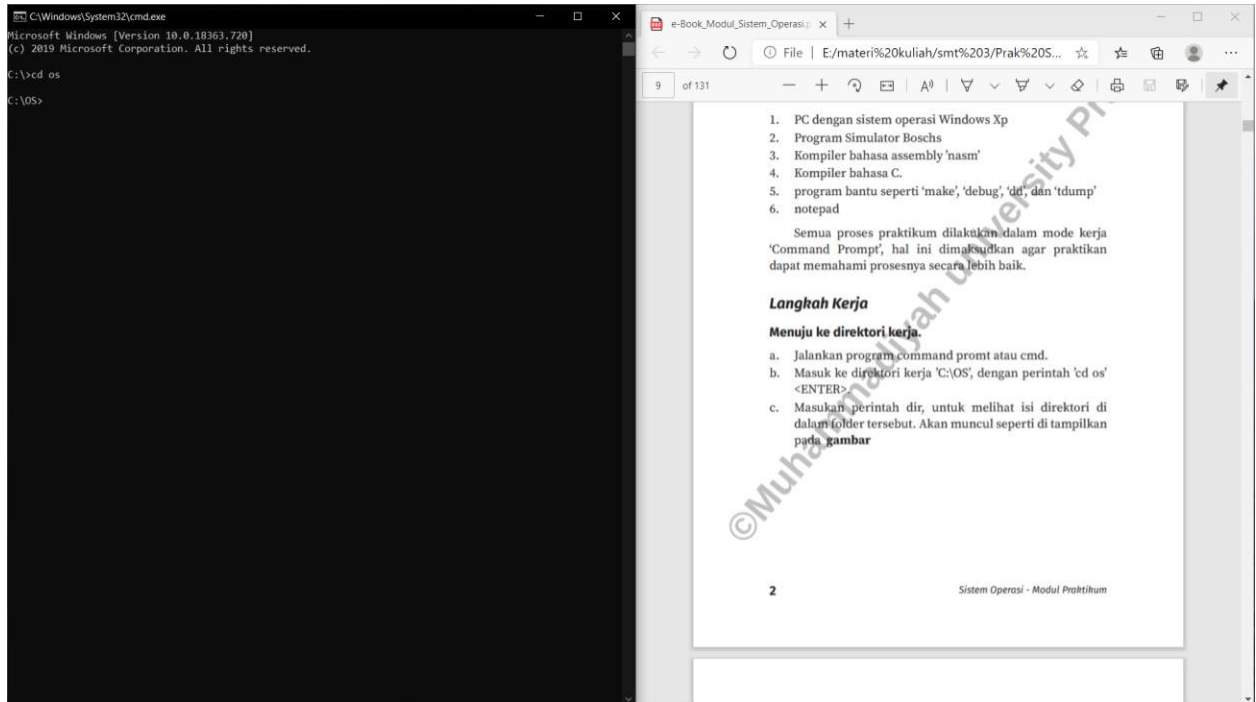


LAPORAN KEGIATAN PRAKTIKUM SISTEM OPERASI

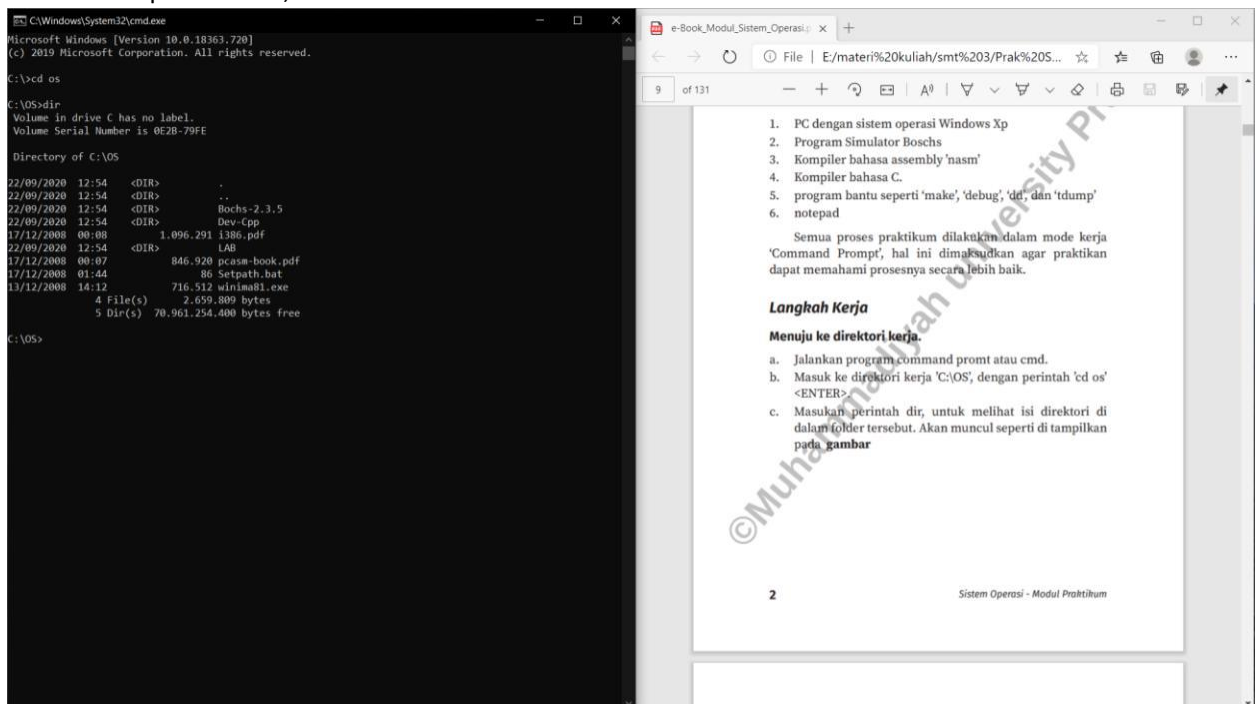
PENGENALAN SISTEM PENGEMBANG OS

NAMA	: AL FATH ABDUL AZIZ
NIM	: L20190232
KELAS	: F

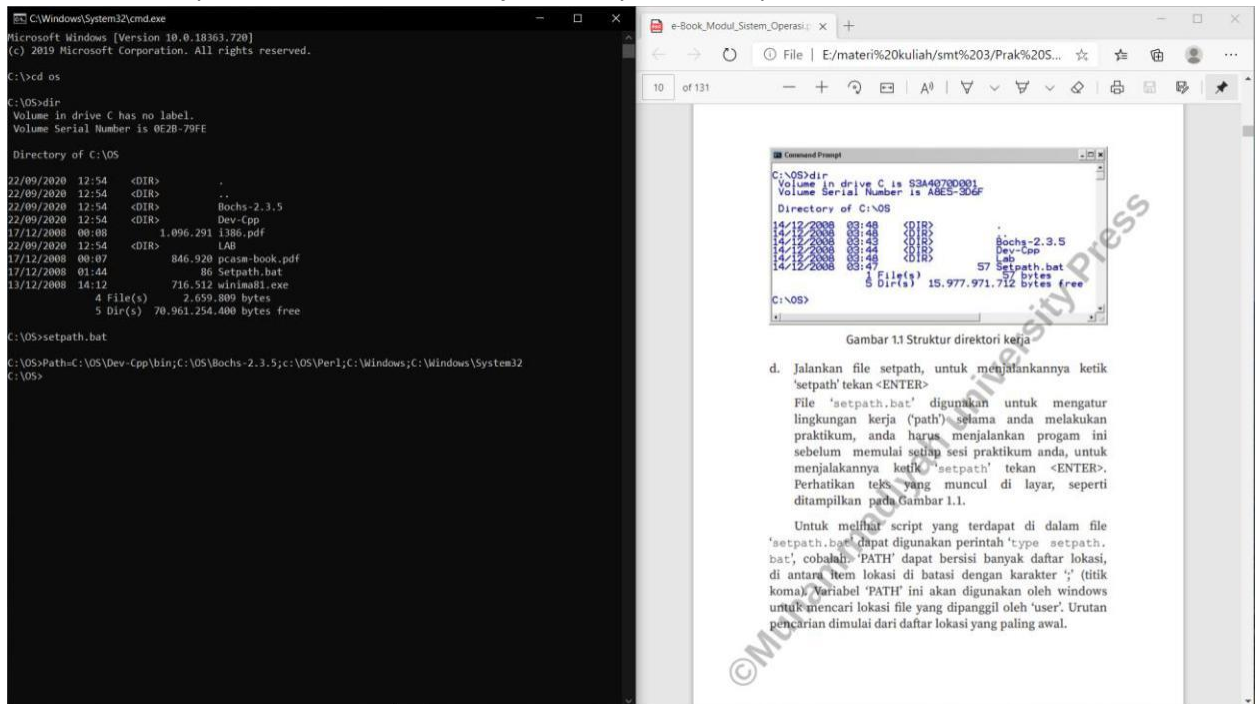
1. Menjalankan program dengan menggunakan command prompt atau cmd.
2. Masuklah ke direktori kerja 'C:\OS', dengan perintah 'cd os'. lalu<ENTER>.



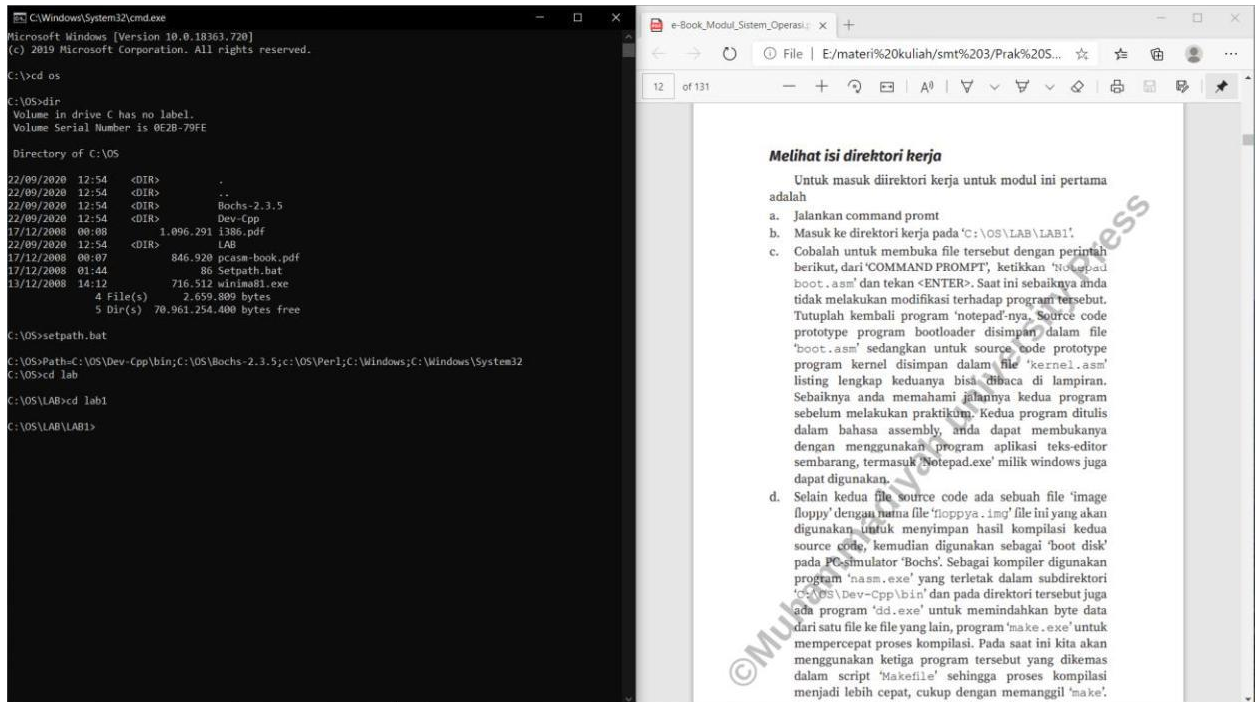
3. Masukanlah perintah dir, untuk melihat isi direktori di dalam folder tersebut



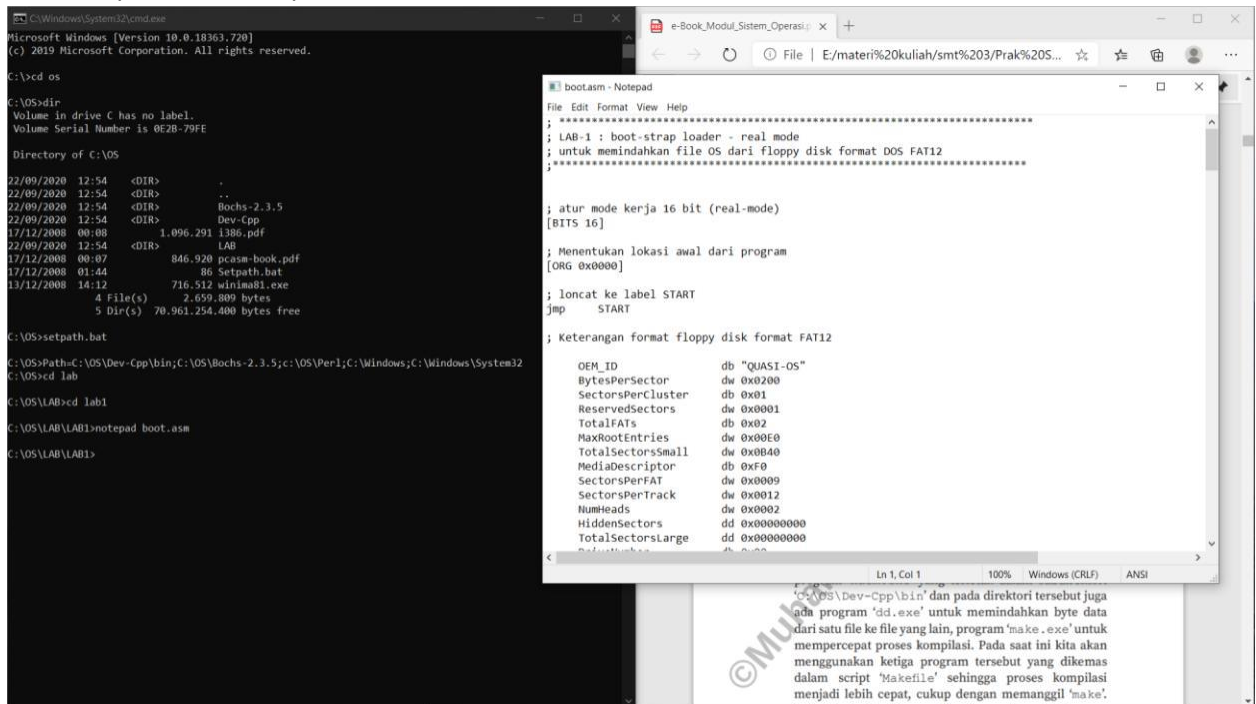
4. Jalankan file setpath tersebut, untuk menjalankannya ketik 'setpath' tekan<ENTER>



5. Masuk ke direktori kerja pada 'C:\OS\LAB\LAB1'



6. Ketiklah perintah 'Notepad boot.asm' dan tekan <ENTER>



The screenshot shows a Windows command prompt window with the following commands and output:

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.18363.720]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\>cd os

C:\OS>dir
Volume in drive C has no label.
Volume Serial Number is 0E2B-79FE

Directory of C:\OS

22/09/2020 12:54 <DIR> .
22/09/2020 12:54 <DIR> ..
22/09/2020 12:54 <DIR>   Bochs-2.3.5
22/09/2020 12:54 <DIR>   Dev-Cpp
17/12/2008 00:00     1.096.291 1386.pdf
22/09/2020 12:54 <DIR>   LAB
17/12/2008 00:07    846.920 pcasm-book.pdf
17/12/2008 01:44         86 Setpath.bat
13/12/2008 14:12    716.512 winima81.exe
               4 File(s)      2.659.809 bytes
               5 Dir(s)      70.961.254.400 bytes free

C:\OS>setpath.bat

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

C:\OS\LAB>cd lab1

C:\OS\LAB\LAB1>notepad boot.asm
C:\OS\LAB\LAB1>
```

The Notepad window shows the contents of boot.asm:

```
boot.asm - Notepad
File Edit Format View Help
; *****
; LAB-1 : boot-strap loader - real mode
; untuk memindahkan file OS dari floppy disk format DOS FAT12
; *****

; atur mode kerja 16 bit (real-mode)
[BITS 16]

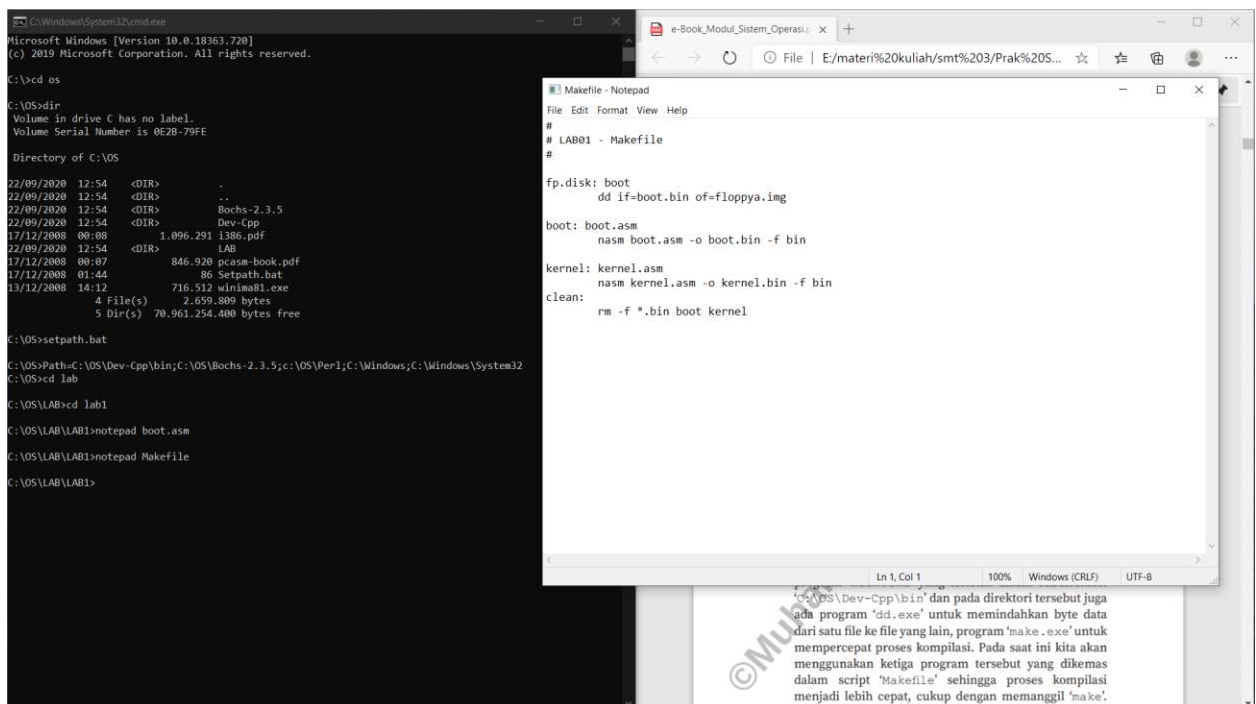
; Menentukan lokasi awal dari program
[ORG 0x0000]

; loncat ke label START
jmp     START

; Keterangan format floppy disk format FAT12

OEM_ID      db "QUASI-OS"
BytesPerSector dw 0x0200
SectorsPerCluster dw 0x01
ReservedSectors dw 0x0001
TotalFATS     dw 0x02
MaxRootEntries dw 0x00E0
TotalSectorsSmall dw 0x0B40
MediaDescriptor db 0xF0
SectorsPerFAT  dw 0x0009
SectorsPerTrack dw 0x0012
NumHeads       dw 0x0002
HiddenSectors  dd 0x00000000
TotalSectorsLarge dd 0x00000000
```

7. Mengetik perintah 'Notepad M' tekan tombol 'TAB' sehingga muncul 'Notepad Makefile' dan tekan <ENTER>



The screenshot shows a Windows command prompt window with the following commands and output:

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.18363.720]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\>cd os

C:\OS>dir
Volume in drive C has no label.
Volume Serial Number is 0E2B-79FE

Directory of C:\OS

22/09/2020 12:54 <DIR> .
22/09/2020 12:54 <DIR> ..
22/09/2020 12:54 <DIR>   Bochs-2.3.5
22/09/2020 12:54 <DIR>   Dev-Cpp
17/12/2008 00:00     1.096.291 1386.pdf
22/09/2020 12:54 <DIR>   LAB
17/12/2008 00:07    846.920 pcasm-book.pdf
17/12/2008 01:44         86 Setpath.bat
13/12/2008 14:12    716.512 winima81.exe
               4 File(s)      2.659.809 bytes
               5 Dir(s)      70.961.254.400 bytes free

C:\OS>setpath.bat

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

C:\OS\LAB>cd lab1

C:\OS\LAB\LAB1>notepad boot.asm
C:\OS\LAB\LAB1>notepad Makefile
C:\OS\LAB\LAB1>
```

The Notepad window shows the contents of Makefile:

```
Makefile - Notepad
File Edit Format View Help
#
# LAB01 - Makefile
#

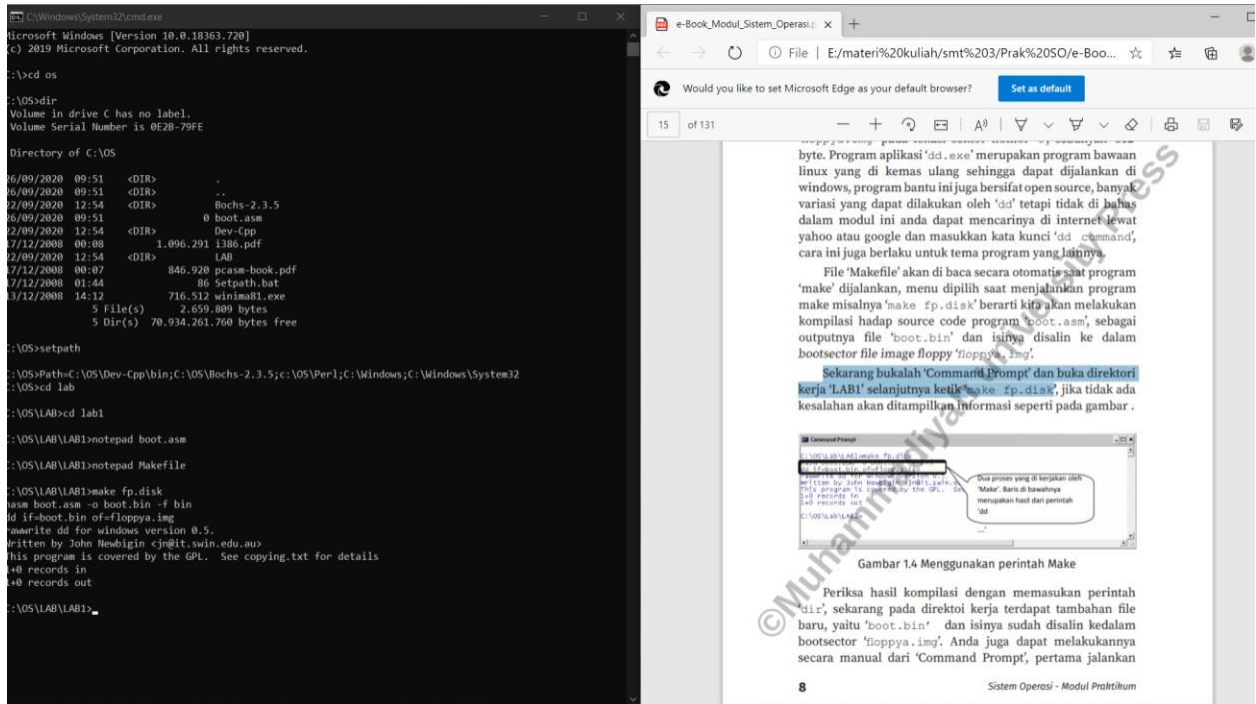
fp.disk: boot
    dd if=boot.bin of=floppya.img

boot: boot.asm
    nasm boot.asm -o boot.bin -f bin

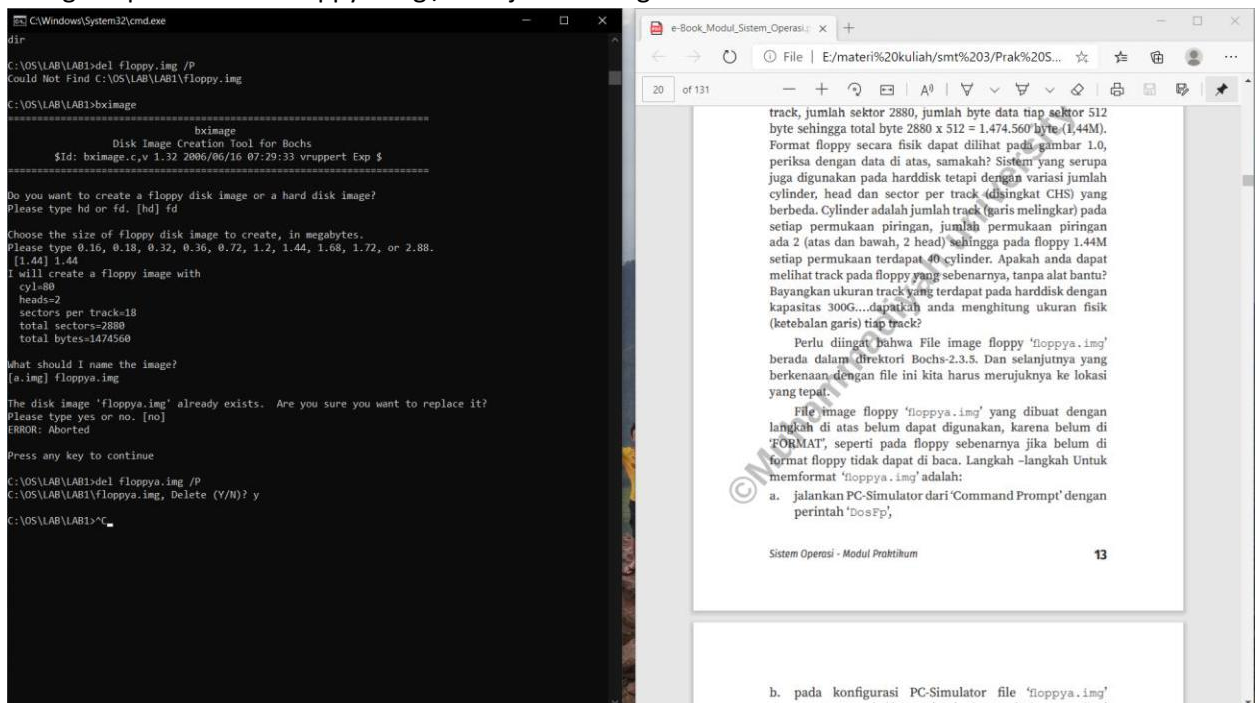
kernel: kernel.asm
    nasm kernel.asm -o kernel.bin -f bin

clean:
    rm -f *.bin boot kernel
```

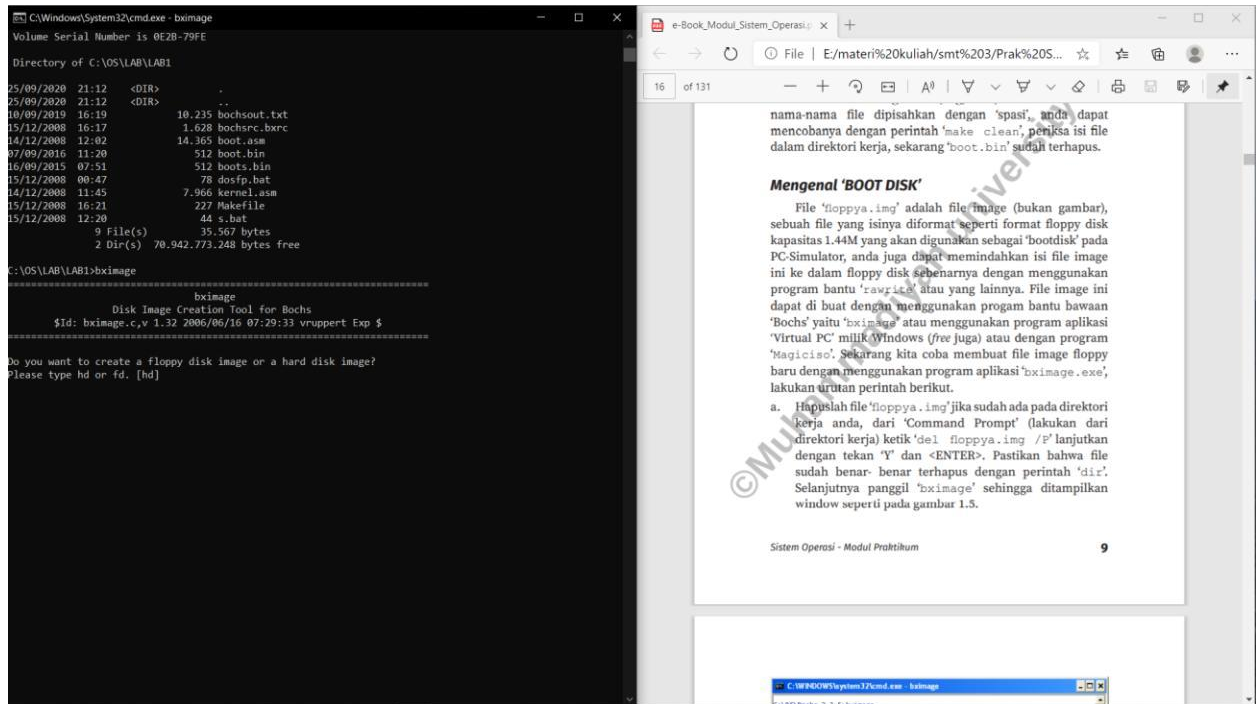
8. Lalu, membuka 'Command Prompt' dan buka direktori kerja 'LAB1' selanjutnya ketik 'make fp.disk'



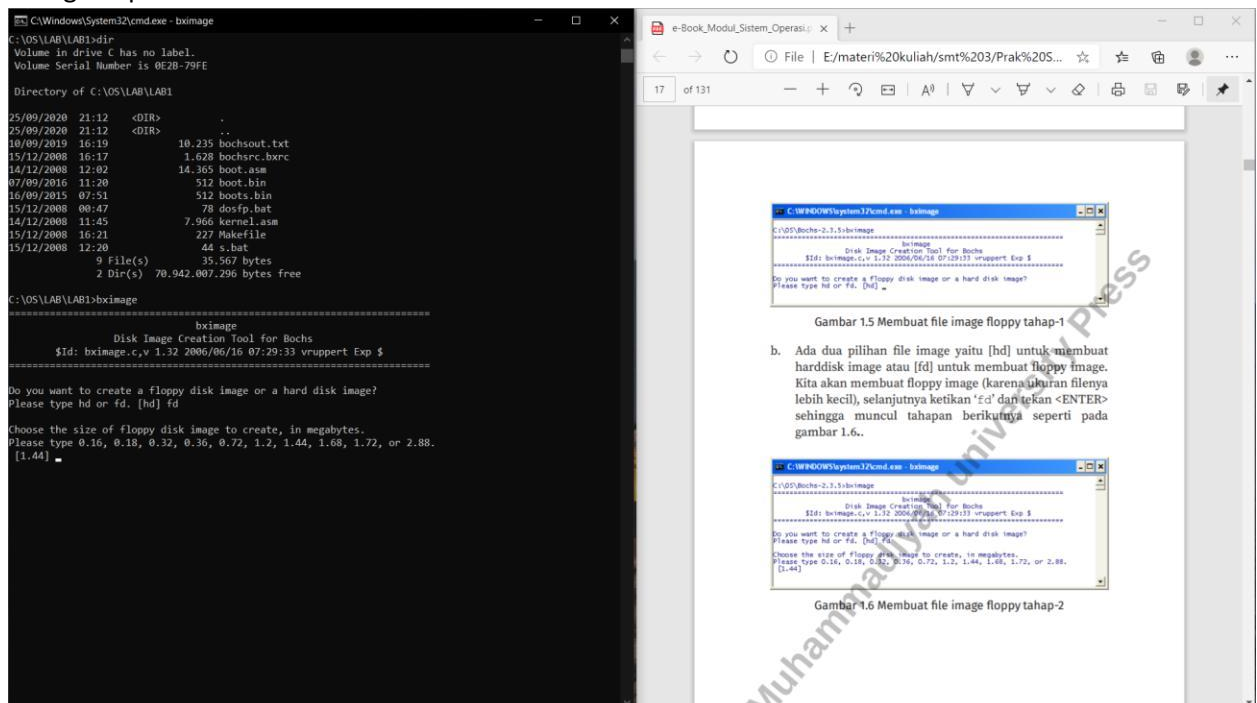
9. Mengetik perintah 'del floppya.img /P' lanjutan dengan tekan 'Y' dan <ENTER>



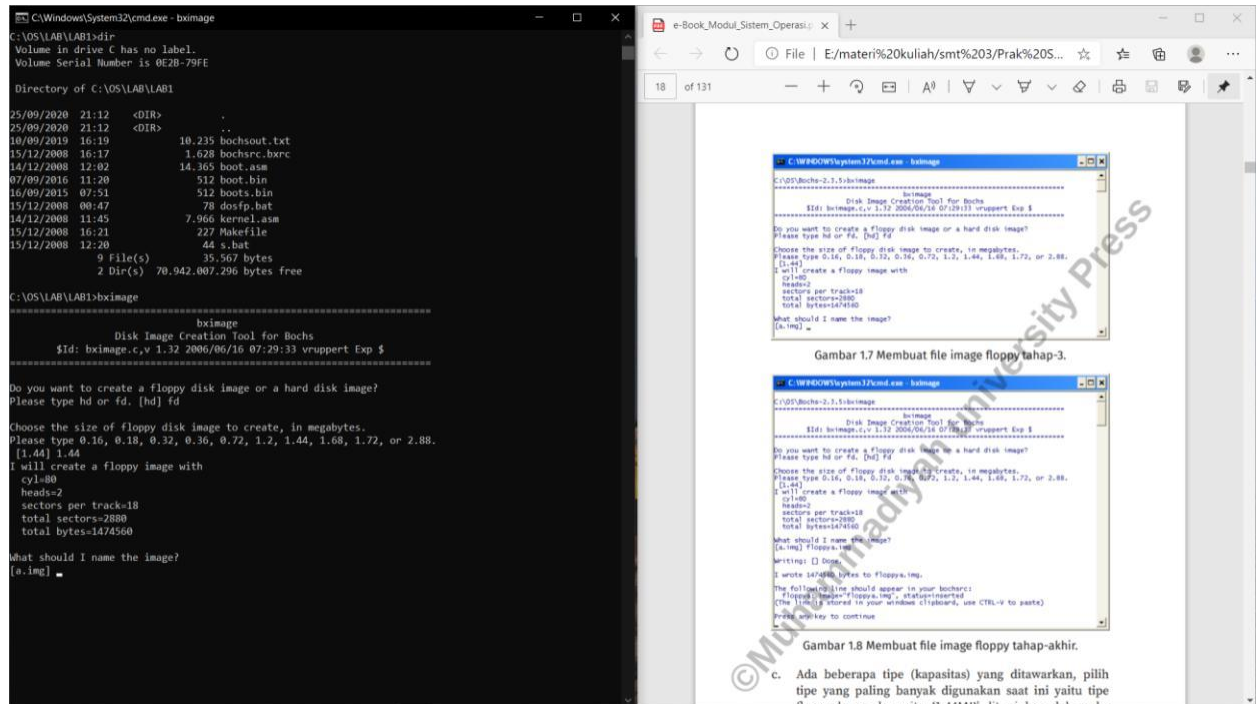
10. ketiklah perintah 'dir'. Selanjutnya panggil 'bimage'



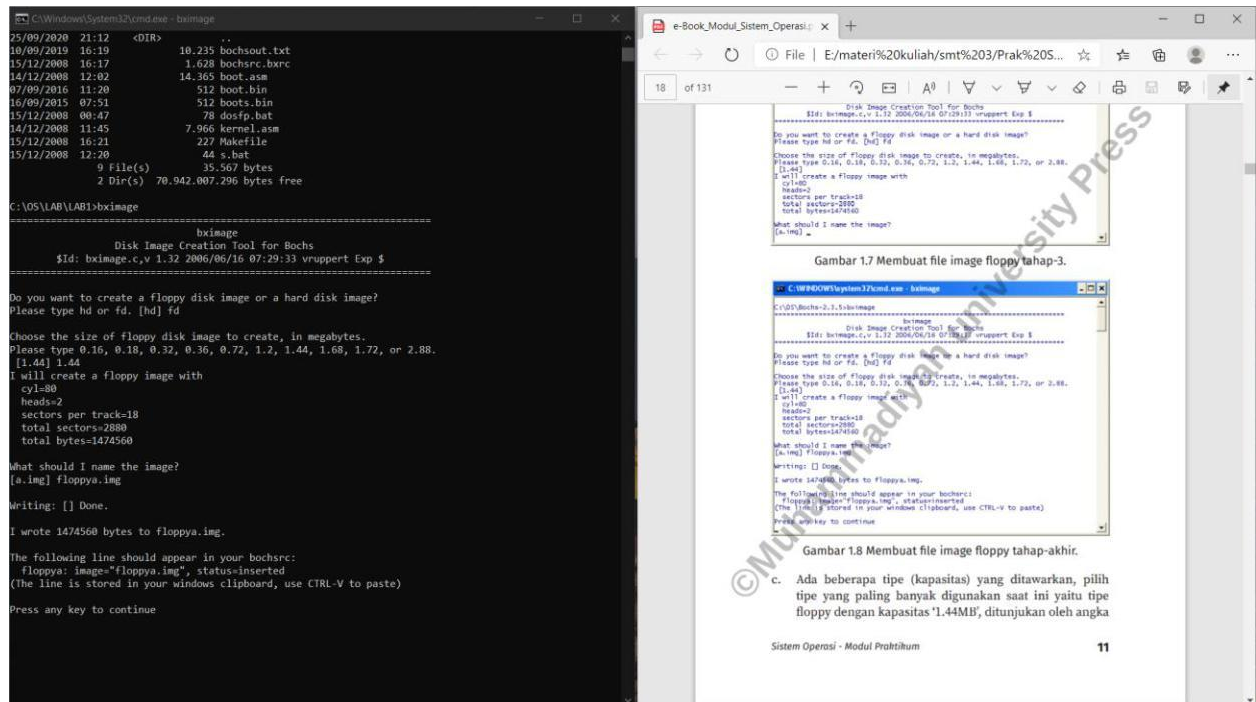
11. Mengetik perintah 'fd' dan tekan <ENTER>



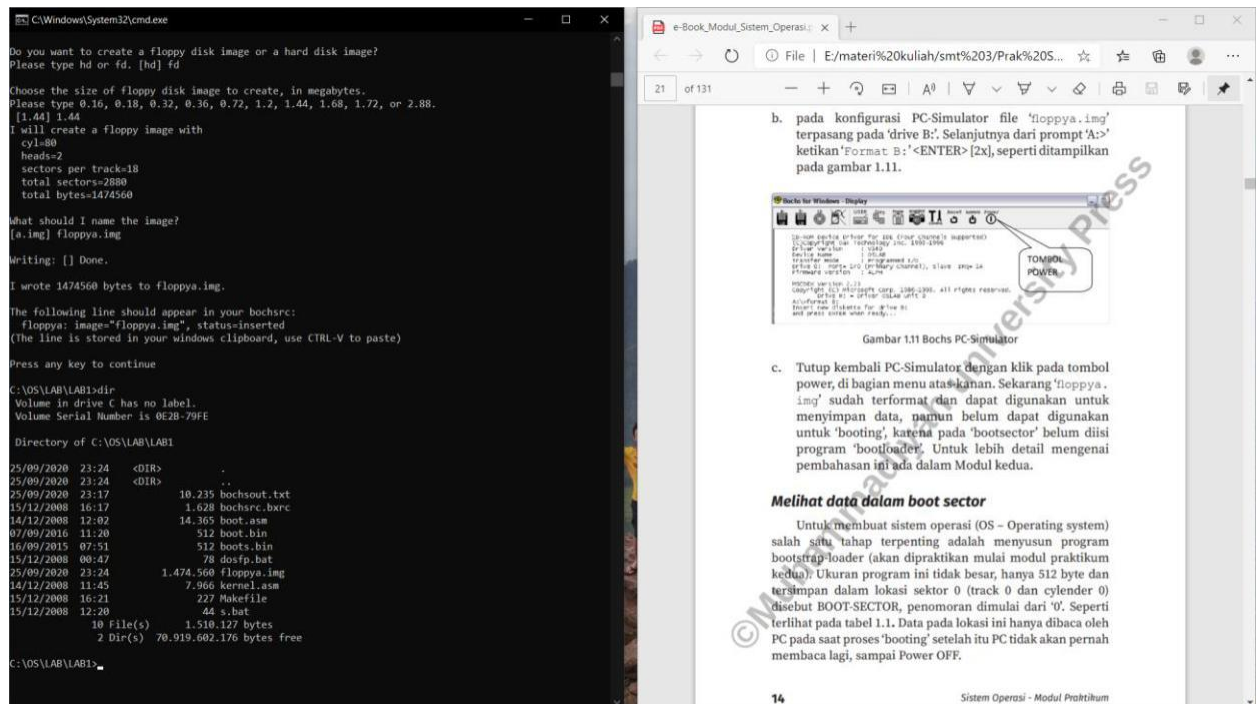
12. Memilih tipe yang paling banyak digunakan saat ini yaitu tipe floppy dengan kapasitas '1.44MB'



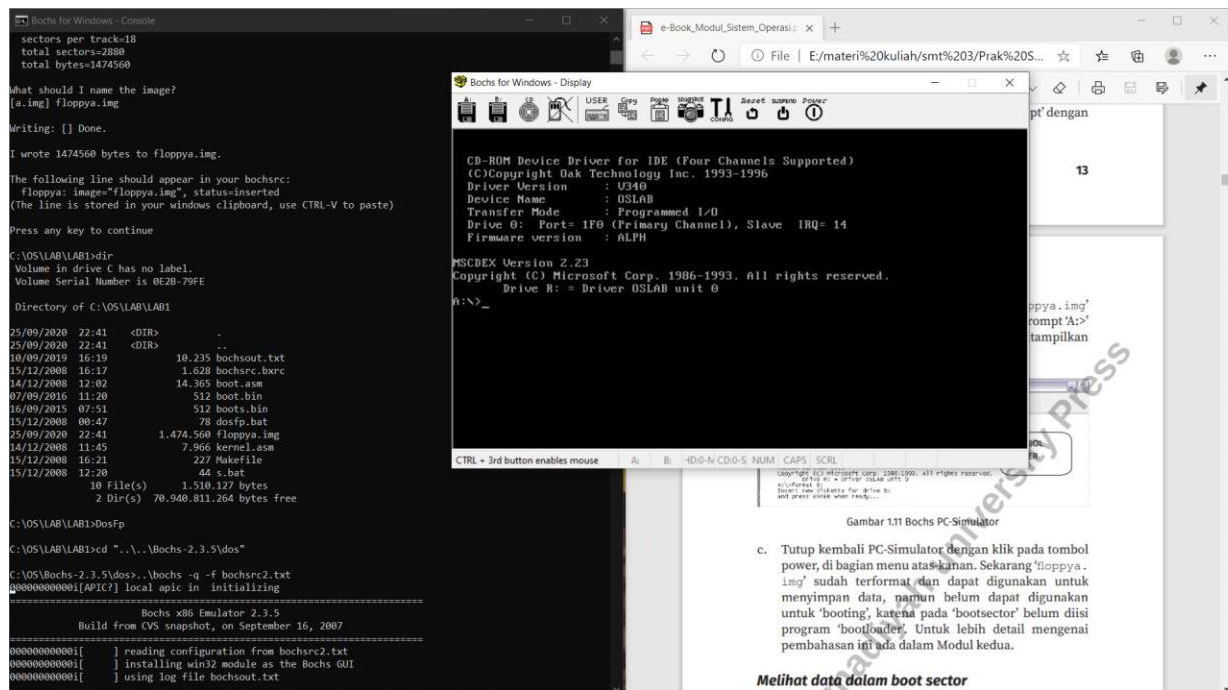
13. Terakhir memberikan nama file, ketikkan 'floppya.img' dan <ENTER>



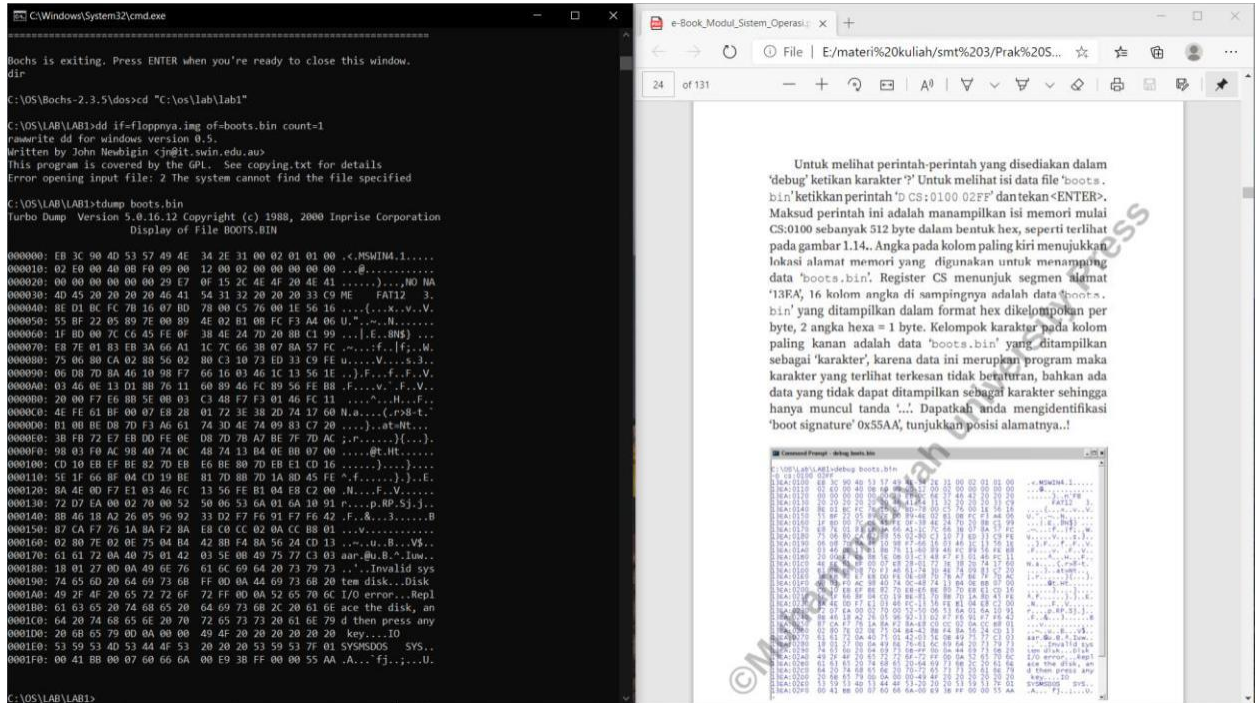
14. Memastikan keberadaan file image tersebut dengan perintah 'dir'



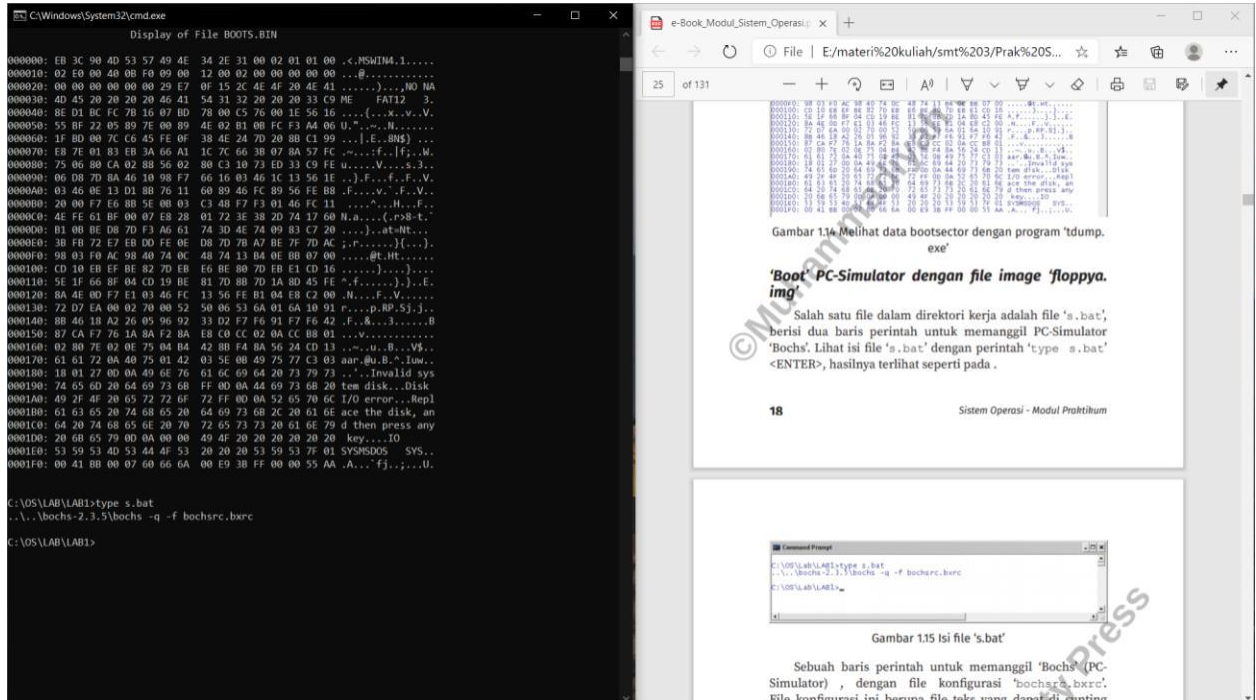
15. Menjalankan PC-Simulator dari 'Command Prompt' dengan perintah 'DosFp'



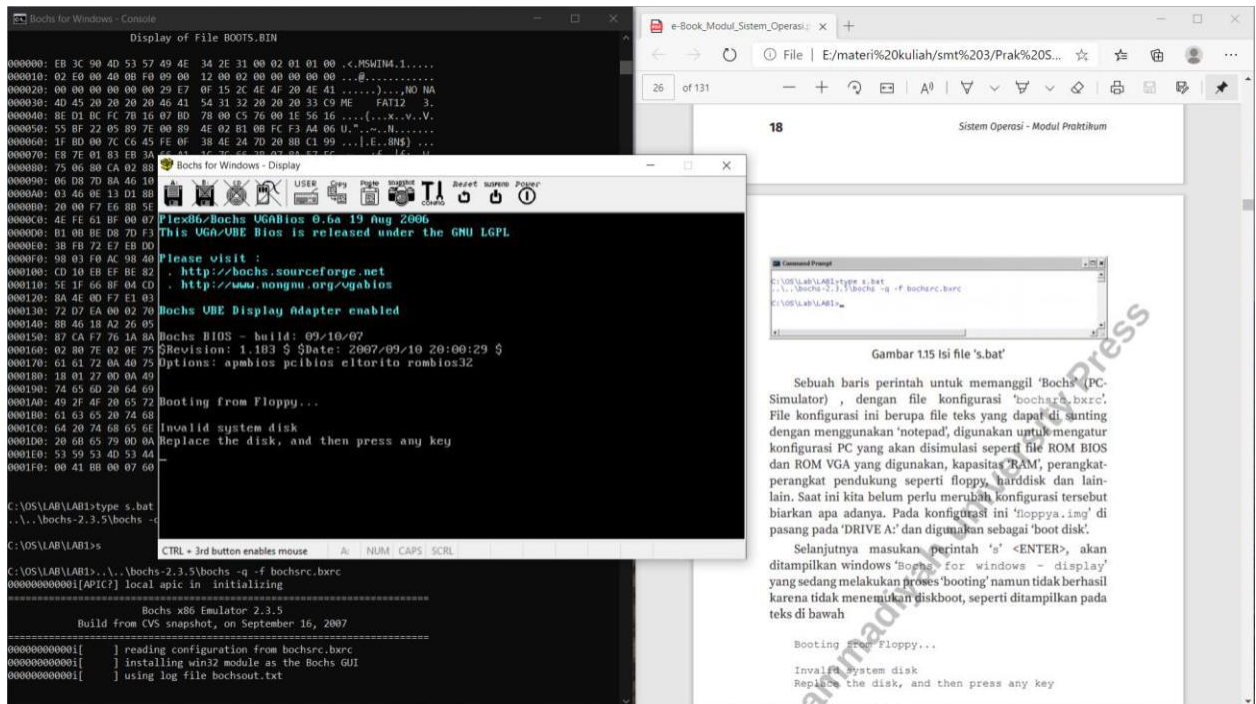
18. Mengetik perintah 'tdebug boots. bin' <ENTER>



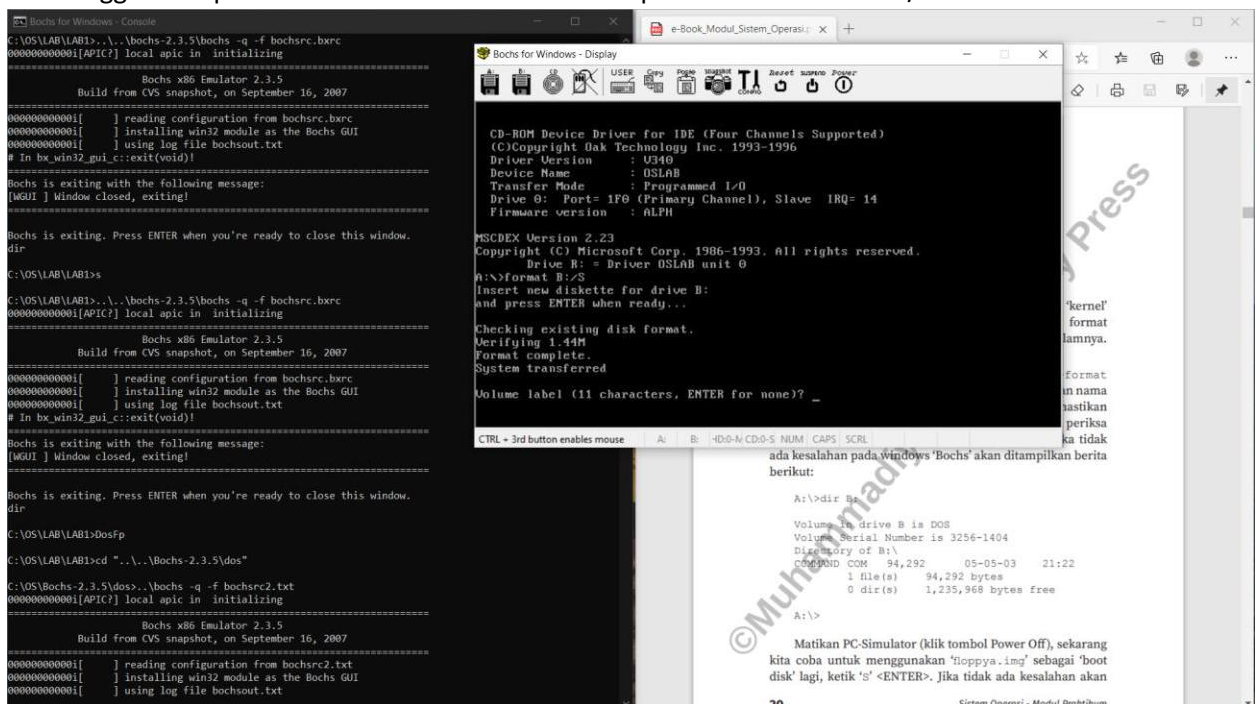
19. Melihat isi file 's.bat' dengan perintah 'type s.bat' <ENTER>



20. kemudian memasukkan perintah 's', akan ditampilkan windows 'Bochs for windows – display' yang sedang melakukan proses 'BOOTING' namun tidak berhasil karena tidak menemukan diskboot.



21. Memanggil 'DosFp'. Pada windows 'Bochs' masukan perintah 'A:>format B:/S' <ENTER>



22. Mematikan PC-Simulator (klik tombol Power Off), ketik 'S' <ENTER>

The screenshot shows the Bochs PC simulator interface. The console window displays the boot process, including BIOS initialization, booting from floppy, and the start of a DOS 7.1 environment. The GUI window shows a 'PANIC' dialog box with the message 'No bootable device.' and options to 'Continue', 'Continue and don't ask again', or 'Abort (dump core)'. The console output shows the following commands and results:

```
C:\OS\LAB\LAB1>..\bochs-2.3.5\bochs -q -f bochssrc.bxrc
000000000000[APIC?] local apic in initializing
=====
Bochs x86 Emulator 2.3.5
Bochs for Windows - Display
=====
Plexdo/Bochs UGABios 0.6a 19 Aug 2006
This UGn/UBE Bios is released under the GNU LGPL
Bochs is exiting Please visit :
[MGUI ] Window . http://bochs.sourceforge.net
. http://www.nongnu.org/ugabios
=====
Bochs is exitingBochs UBE Display Adapter enabled
dir
Bochs BIOS - build: 09/10/07
Revision: 1.1B3 $ $Date: 2007/09/10 20:00:29 $
Options: apmbios pcibios eltorito rombios32
C:\OS\LAB\LAB1>
C:\OS\LAB\LAB1>Booting from Floppy...
000000000000[APIC?] Starting BootCD....
=====
Microsoft(R) MS-DOS 7.1
(C)Copyright Microsoft Corp 1981-1999.
000000000000[
000000000000[
000000000000[ A:\>_
# in bx_win32_
Bochs is exiting
[MGUI ] POWER CTRL + 3rd button enables mouse & NUM CAPS SCRL
=====
C:\OS\Bochs-2.3.5\dos>cd "C:\os\lab\lab1"
C:\OS\LAB\LAB1>
C:\OS\LAB\LAB1>
C:\OS\LAB\LAB1>..\bochs-2.3.5\bochs -q -f bochssrc.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 bochssrc.bxrc
000000000000[ ] installing win32 module as the Bochs GUI
000000000000[ ] using log file bochsout.txt
```

The 'PANIC' dialog box shows the following details:

- Device: [BIOS]
- Message: No bootable device.
- Buttons: Continue, Continue and don't ask again, Abort (dump core), OK, Cancel.

The console output shows the following commands and results:

```
A:\>dir B:
Volume in drive B is DOS
Volume Serial Number is 3256-1404
Directory of B:\
COMPOND COM 94,292 05-05-03 21:22
1 file(s) 94,292 bytes
0 dir(s) 1,235,968 bytes free
A:\>
```

The text on the right side of the image explains the error and provides instructions:

'Floppya.img' belum terisi 'system file' atau 'kernel' sehingga proses boot gagal. Sekarang kita akan format 'floppya.img' dan menambahkan 'system file' ke dalamnya. Panggil 'dosFp' <ENTER>.

Pada windows 'Bochs' masukan perintah 'A:>format B:/S' <ENTER>, selesaikan proses format dan berikan nama label disk jika perlu. Jika sudah selesai, untuk memastikan bahwa floppy pada drive 'B' terisi dengan 'system file', periksa dengan perintah berikut 'A:>dir B:' <ENTER>, jika tidak ada kesalahan pada windows 'Bochs' akan ditampilkan berita berikut:

Matikan PC-Simulator (klik tombol Power Off), sekarang kita coba untuk menggunakan 'floppya.img' sebagai 'boot disk' lagi, ketik 'S' <ENTER>. Jika tidak ada kesalahan akan