

**LAPORAN PRAKTIKUM  
PRAKTIKUM SISTEM OPERASI  
MODUL 1**



**Oleh:**

**Putra Agung Khoiron Rafi'i  
L200190145**

**PRODI INFORMATIKA FAKULTAS KOMUNIKASI DAN  
INFORMATIKA**

```
Microsoft Windows [Version 10.0.18363.1082]
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C:\Users\HP>cd..

C:\Users>cd..

C:\>cd OS

C:\OS>
```

```
Command Prompt
Directory of C:\OS
2/09/2019 16:11 <DIR> .
2/09/2019 16:11 <DIR> ..
2/09/2019 16:11 <DIR> Bochs-2.3.5
2/09/2019 16:11 <DIR> Dev-Cpp
7/12/2008 00:08 1.096.291 i386.pdf
2/09/2019 16:11 <DIR> LAB
7/12/2008 00:07 846.920 pcasm-book.pdf
7/12/2008 01:44 86 Setpath.bat
3/12/2008 14:12 716.512 winima81.exe
4 File(s) 2.659.809 bytes
5 Dir(s) 82.636.500.992 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>type setpath.bat
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>
```

```
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
DriveNumber      db 0x00
Flags            db 0x00
Signature        db 0x29
VolumeID         dd 0xFFFFFFFF
VolumeLabel      db "QUASI BOOT"

```

```
Command Prompt
C:\Users>cd..
C:\>cd OS
C:\OS>dir
Volume in drive C is Windows
Volume Serial Number is 1F9B-1390

Directory of C:\OS
12/09/2019 16:11 <DIR> .
12/09/2019 16:11 <DIR> ..
12/09/2019 16:11 <DIR> Bochs-2.3.5
12/09/2019 16:11 <DIR> Dev-Cpp
17/12/2008 00:08 1.096.291 i386.pdf
12/09/2019 16:11 <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) 82.624.696.320 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 Makefile
C:\OS\LAB\LAB1>make fp.disk
nasm boot.asm -o boot.bin -f bin
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

C:\OS\LAB\LAB1>
```

```
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

```

```
Command Prompt - bximage

C:\OS>Path=C:\OS\Dev-Cpp\bin;c:\OS\Bochs-2.3.5;c:\OS\Perl;c:\Windows;C:\Windows\System32
C:\OS>type setpath.bat
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>del floppy.img /P
C:\OS\LAB\LAB1>floppy.img, Delete (Y/N)? Y
C:\OS\LAB\LAB1>dir
Volume in drive C is Windows
Volume Serial Number is 1F9B-1390

Directory of C:\OS\LAB\LAB1

28/09/2020  01:09    <DIR>          .
28/09/2020  01:09    <DIR>          ..
10/09/2019  16:19                10,235 bochsout.txt
15/12/2008  16:17                1,628 bochsrc.bxrc
14/12/2008  12:02                14,365 boot.asm
28/09/2020  01:04                512 boot.bin
16/09/2015  07:51                512 boots.bin
15/12/2008  00:47                78 dosfp.bat
14/12/2008  11:45                7,966 kernel.asm
15/12/2008  16:21                227 Makefile
15/12/2008  12:20                44 s.bat
               9 File(s)              35,567 bytes
               2 Dir(s)  82,631,630,848 bytes free

C:\OS\LAB\LAB1>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] _
```

```
Command Prompt

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

Writing: [] Done.

I wrote 1474560 bytes to floppy.img.

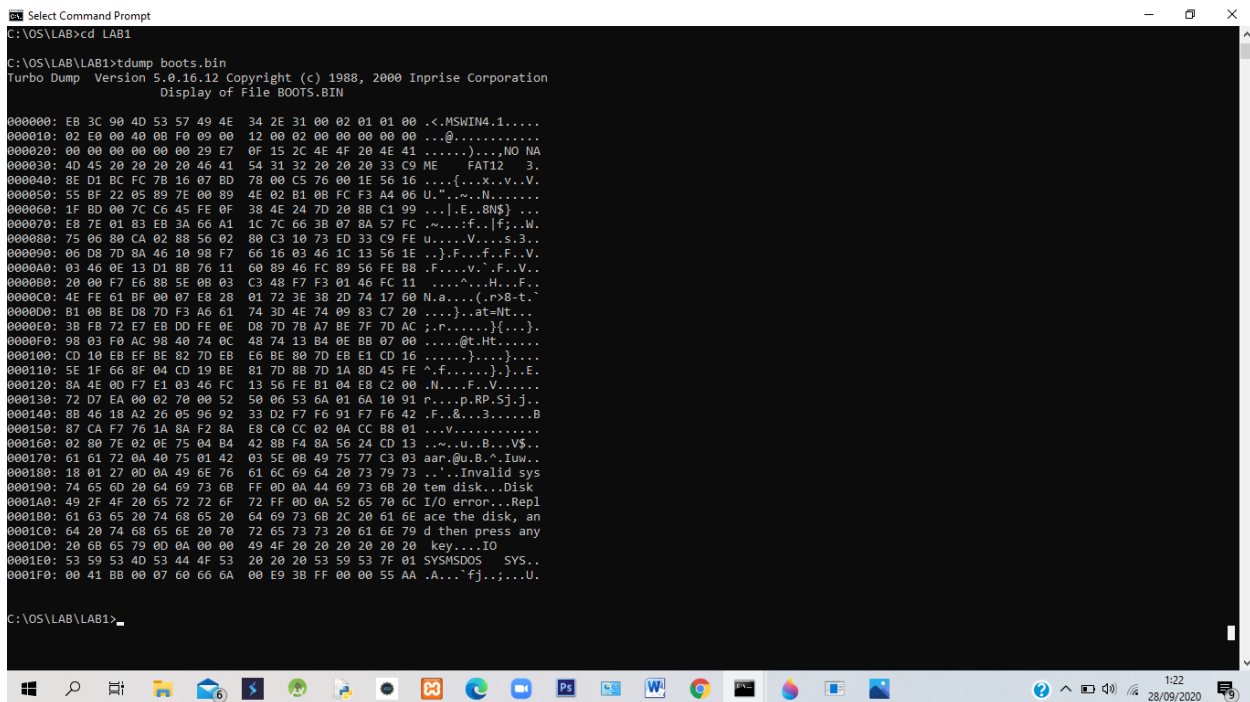
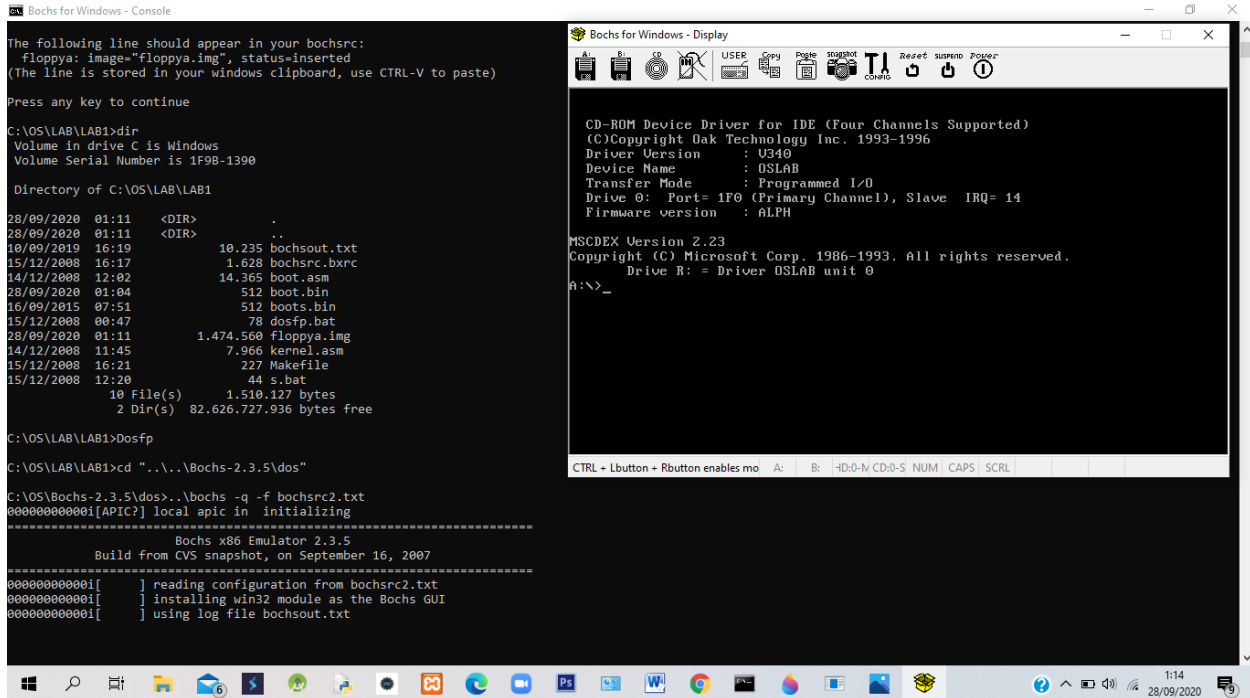
The following line should appear in your bochsrc:
  floppy: image="floppy.img", status=inserted
(The line is stored in your windows clipboard, use CTRL-V to paste)

Press any key to continue

C:\OS\LAB\LAB1>dir
Volume in drive C is Windows
Volume Serial Number is 1F9B-1390

Directory of C:\OS\LAB\LAB1

28/09/2020  01:11    <DIR>          .
28/09/2020  01:11    <DIR>          ..
10/09/2019  16:19                10,235 bochsout.txt
15/12/2008  16:17                1,628 bochsrc.bxrc
14/12/2008  12:02                14,365 boot.asm
28/09/2020  01:04                512 boot.bin
16/09/2015  07:51                512 boots.bin
15/12/2008  00:47                78 dosfp.bat
28/09/2020  01:11            1,474,560 floppy.img
14/12/2008  11:45                7,966 kernel.asm
15/12/2008  16:21                227 Makefile
15/12/2008  12:20                44 s.bat
               10 File(s)             1,510,127 bytes
               2 Dir(s)  82,626,727,936 bytes free
```



```
Bochs for Windows - Console

Directory of C:\OS

12/09/2019 16:11 <DIR>      .
12/09/2019 16:11 <DIR>      ..
12/09/2019 16:11 <DIR>      Bochs-2.3.5
12/09/2019 16:11 <DIR>      Dev-Cpp
17/12/2008 00:08      1,096,291 1386.pdf
12/09/2019 16:11 <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)      82,551,742,464 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>type s.bat
..\..\bochs-2.3.5\bochs -q -f bochsrc.bxrc

C:\OS\LAB\LAB1>s

C:\OS\LAB\LAB1>..\..\bochs-2.3.5\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 bochsout.txt
_
```

```
Bochs for Windows - Console

C:\OS>dir
Volume in drive C is Windows
Volume Serial Number is 1F98-1390

Directory of C:\OS

12/09/2019 16:11 <DIR>      .
12/09/2019 16:11 <DIR>      ..
12/09/2019 16:11 <DIR>      Bochs-2.3.5
12/09/2019 16:11 <DIR>      Dev-Cpp
17/12/2008 00:08      1,096,291 1386.pdf
12/09/2019 16:11 <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)      82,605,899,776 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>Floppya.img

C:\OS\LAB\LAB1>DosFp

C:\OS\LAB\LAB1>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
```

```
Bochs for Windows - Display

Volume label (11 characters, ENTER for none)?

1,457,664 bytes total disk space
221,696 bytes used by system
1,235,968 bytes available on disk

512 bytes in each allocation unit.
2,414 allocation units available on disk.

Volume Serial Number is 3444-0916

Format another (Y/N)? N

A:\>dir B:

Volume in drive B has no label
Volume Serial Number is 3444-0916
Directory of B:\

COMMAND  COM      94,292  05-05-03  21:22
1 file(s)      94,292 bytes
0 dir(s)      1,235,968 bytes free

A:\>
```

