

**LAPORAN PRAKTIKUM  
MODUL 1  
SISTEM INFORMASI**



**Joko Laksono  
L200190146  
Kelas D**

**PRODI INFORMATIKA  
FAKULTAS KOMUNIKASI DAN INFORMATIKA  
UNIVERSITAS MUHAMMADIYAH SURAKARTA  
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```
Command Prompt
Microsoft Windows [Version 10.0.18363.1082]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\Acer>cd..
C:\Users>cd..
C:\>cd OS
C:\OS>
```

```
Command Prompt
09/22/2020 10:36 AM <DIR> .
09/22/2020 10:36 AM <DIR> ..
09/22/2020 10:36 AM <DIR> Bochs-2.3.5
09/12/2019 04:11 PM <DIR> Dev-Cpp
12/17/2008 12:08 AM 1,096,291 i386.pdf
09/22/2020 10:36 AM <DIR> LAB
12/17/2008 12:07 AM 846,920 pcasm-book.pdf
12/17/2008 01:44 AM 86 Setpath.bat
12/13/2008 02:12 PM 716,512 winima81.exe
4 File(s) 2,659,809 bytes
5 Dir(s) 80,944,754,688 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\Sys
tem32
C:\OS>type setpath
The system cannot find the file specified.

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>
```

```
bootasm - 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 db 0x01
ReservedSectors dw 0x0001
TotalFATs       db 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        db 0xFFFFFFFF
VolumeLabel     db "QUASI BOOT"
```

```
Command Prompt
09/22/2020 10:36 AM <DIR>      Bochs-2.3.5
09/12/2019 04:11 PM <DIR>      Dev-Cpp
12/17/2008 12:08 AM      1,096,291 i386.pdf
09/22/2020 10:36 AM <DIR>      LAB
12/17/2008 12:07 AM      846,920 pcasm-book.pdf
12/17/2008 01:44 AM      86 Setpath.bat
12/13/2008 02:12 PM      716,512 winima81.exe
4 File(s)      2,659,809 bytes
5 Dir(s)      80,922,820,608 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\Sys
tem32
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
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
140 records in
140 records out

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\LAB>cd LAB1

C:\OS\LAB\LAB1>del floppya.img /P
C:\OS\LAB\LAB1>floppya.img, Delete (Y/N)? y

C:\OS\LAB\LAB1>dir
Volume in drive C is Windows
Volume Serial Number is 2EC4-55CB

Directory of C:\OS\LAB\LAB1

09/22/2020 11:58 AM <DIR>      .
09/22/2020 11:58 AM <DIR>      ..
09/10/2019 04:19 PM      10,235 bochsout.txt
12/15/2008 04:17 PM      1,628 bochsrc.bxrc
12/14/2008 12:02 PM      14,365 boot.asm
12/15/2008 12:47 AM      78 dosfp.bat
12/14/2008 11:45 AM      7,966 kernel.asm
12/15/2008 04:21 PM      227 Makefile
12/15/2008 12:20 PM      44 s.bat
7 File(s)      34,543 bytes
2 Dir(s)      80,905,318,400 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
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

Writing: [] Done.

I wrote 1474560 bytes to floppy.img.

The following line should appear in your bochsrc:
floppya: 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 2EC4-55CB

Directory of C:\OS\LAB\LAB1

09/22/2020 12:05 PM <DIR>      .
09/22/2020 12:05 PM <DIR>      ..
09/10/2019 04:19 PM          10,235 bochsout.txt
12/15/2008 04:17 PM          1,628 bochsrc.bxrc
12/14/2008 12:02 PM          14,365 boot.asm
12/15/2008 12:47 AM           78 dosfp.bat
09/22/2020 12:05 PM      1,474,560 floppy.img
12/14/2008 11:45 AM       7,966 kernel.asm
12/15/2008 04:21 PM       227 Makefile
12/15/2008 12:20 PM         44 s.bat
               8 File(s)      1,509,103 bytes
               2 Dir(s)      80,901,222,400 bytes free
```

```
Bochs for Windows - Console
Writing: [] Done.

I wrote 1474560 bytes to floppy.img.

The following line should appear in your bochsrc:
floppya: 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 2EC4-55CB

Directory of C:\OS\LAB\LAB1

09/22/2020 12:05 PM <DIR>      .
09/22/2020 12:05 PM <DIR>      ..
09/10/2019 04:19 PM          10,235 bochsout.txt
12/15/2008 04:17 PM          1,628 bochsrc.bxrc
12/14/2008 12:02 PM          14,365 boot.asm
12/15/2008 12:47 AM           78 dosfp.bat
09/22/2020 12:05 PM      1,474,560 floppy.img
12/14/2008 11:45 AM       7,966 kernel.asm
12/15/2008 04:21 PM       227 Makefile
12/15/2008 12:20 PM         44 s.bat
               8 File(s)      1,509,103 bytes
               2 Dir(s)      80,901,222,400 bytes free

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
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
```

```
Bochs for Windows - Display
CD-ROM Device Driver for IDE (Four Channels Supported)
(C)Copyright Oak Technology Inc. 1993-1996
Driver Version : U340
Device Name : OSLAB
Transfer Mode : Programmed I/O
Drive 0: Port= 1F0 (Primary Channel), Slave IRQ= 14
Firmware version : ALPH

MSCDEx Version 2.23
Copyright (C) Microsoft Corp. 1986-1993. All rights reserved.
Drive R: = Driver OSLAB unit 0
A:\>Format B:
Insert new diskette for drive B:
and press ENTER when ready...

Checking existing disk format.
Formatting 1.44M
Format complete.

Volume label (11 characters, ENTER for none)? _

CTRL + 3rd button enables mouse A: B: HD:0-N CD:0-S NUM CAPS SCRL
```

```
Command Prompt
C:\OS\LAB\LAB1>tdump boots.bin
Turbo Dump Version 5.0.16.12 Copyright (c) 1988, 2000 Inprise Corporation
Display of File BOOTS.BIN

000000: EB 3C 90 4D 53 57 49 4E 34 2E 31 00 02 01 01 00 <.MSWIN4.1....
000010: 02 E0 00 40 08 F0 09 00 12 00 02 00 00 00 00 00 ...@.....
000020: 00 00 00 00 00 00 29 03 11 79 0C 4E 4F 20 4E 41 .....).y.NO NA
000030: 4D 45 20 20 20 20 46 41 54 31 32 20 20 33 C9 ME FAT12 3.
000040: 8E D1 BC FC 70 16 07 BD 70 00 C5 76 00 1E 56 16 {...x.v.v.v.
000050: 55 BF 22 05 89 7E 00 89 4E 02 B1 08 FC F3 A4 06 U...w.W.....
000060: 1F BD 00 7C C6 45 FE 0F 38 4E 24 70 20 88 C1 99 ...|E..8NS}...
000070: E8 7E 01 83 E8 3A 66 A1 1C 7C 66 38 07 8A 57 FC ~...f...|f;..W.
000080: 75 06 80 CA 02 88 56 02 80 C3 10 73 ED 33 C9 FE u...V...s.3..
000090: 06 D8 7D 8A 46 10 98 F7 66 16 03 46 1C 13 56 1E ..}.F...f..F.V.
0000A0: 03 46 0E 13 D1 88 76 11 60 89 46 FC 89 56 FE B8 .F...v..F.V..
0000B0: 20 00 F7 E6 88 5E 00 03 C3 48 F7 F3 01 46 FC 11 ....^...H...F..
0000C0: 4E FE 61 BF 00 07 E8 28 01 72 3E 38 2D 74 17 60 N.a....(r>8-t..
0000D0: B1 0B BE D8 7D F3 A6 61 74 3D 4E 74 09 83 C7 20 ...}.at=NT...
0000E0: 38 F8 72 E7 E8 DD FE 0E D8 7D 7B A7 BE 7F 7D AC ;r.....}{...}.
0000F0: 98 03 F0 AC 98 40 74 0C 48 74 13 B4 0E B8 07 00 ....@t.Ht.....
000100: CD 18 EB EF BE 82 7D EB E6 BE 88 7D E9 E1 CD 16 .....).).).).
000110: 5E 1F 66 8F 04 CD 19 BE 81 7D 88 7D 1A 80 45 FE ^f.....).}.E.
000120: 8A 4E 00 F7 E1 03 46 FC 13 56 FE B1 04 E8 C2 00 .W...F.V.....
000130: 72 D7 EA 00 02 70 00 52 50 06 53 6A 01 6A 10 91 n...p.RP.Sj.j..
000140: 88 46 18 A2 26 05 96 92 33 D2 F7 F6 91 F7 F6 42 .F.&...3.....B
000150: 87 CA F7 76 1A 8A F2 8A E8 C0 CC 02 0A CC B8 01 ..v.....
000160: 02 80 7E 02 0E 75 04 B4 42 8B F4 8A 56 24 CD 13 ..u..B...V5..
000170: 61 61 72 0A 40 75 01 42 03 5E 08 49 75 77 C3 03 aar.@.B.^Iuw..
000180: 18 01 27 0D 0A 49 6E 76 61 6C 69 64 20 73 79 73 ..'.Invalid sys
000190: 74 65 6D 20 64 69 73 68 FF 0D 0A 44 69 73 68 20 tem disk...Disk
0001A0: 49 2F 4F 20 65 72 72 6F 72 FF 0D 0A 52 65 70 6C I/O error...Repl
0001B0: 61 63 65 20 74 68 65 20 64 69 73 68 2C 20 61 6E ace the disk, an
0001C0: 64 20 74 68 65 6E 20 70 72 65 73 73 20 61 6E 79 d then press any
0001D0: 20 68 65 79 0D 0A 00 00 49 4F 20 20 20 20 20 20 key...IO
0001E0: 53 59 53 4D 53 44 4F 53 20 20 20 53 59 53 7F 01 SYSMSDOS SYS..
0001F0: 00 41 B8 00 07 60 66 6A 00 E9 3B FF 00 00 55 AA .A...`fj...u..

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

```
Bochs for Windows - Console
C:\OS\LAB\LAB1>type s.bat
..\bochs-2.3.5\bochs -q -f bochssrc.bxrc

C:\OS\LAB\LAB1>s
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

Bochs for Windows - Display
Plex86/Bochs UGABios 0.6a 19 Aug 2006
This UGA/VE Bios is released under the GNU LGPL

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

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...

Invalid system disk
Replace the disk, and then press any key

CTRL + 3rd button enables mouse A: NUM CAPS SCRL
```



