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```
Bochs for Windows - Console
Microsoft Windows [Version 10.0.17134.885]
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C:\Users\VACER>cd..
C:\Users>cd..
C:\>cd os..
C:\OS>dir
Volume in drive C has no label.
Volume Serial Number is 72B0-B1E6

Directory of C:\OS

03/09/2015  13.42  <DIR>      .
03/09/2015  13.42  <DIR>      ..
07/09/2016  11.34  <DIR>      Bochs-2.3.5
03/09/2015  13.42  <DIR>      Dev-Cpp
17/12/2008   00.08      1,096,291  i386.pdf
03/09/2015  13.42  <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)      87,164,936 bytes free

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
C:\OS\LAB>cd lab1
C:\OS\LAB\LAB1>notepad boot.asm
C:\OS\LAB\LAB1>notepad Makefile
C:\OS\LAB\LAB1>nasm boot.asm -o boot.bin -f bin
C:\OS\LAB\LAB1>dd command
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
```

```
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        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         dd 0xFFFFFFFF
VolumeLabel      db "QUASI  BOOT"
SystemID         db "FAT12  "
```

```
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
```

```
Bochs for Windows - Console
C:\OS\LAB\LAB1>dd command
rawwrite dd for windows version 0.5.
Written by John Newbigin <jn@it.swin.edu.au>
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Unknown command command
dd [bs=SIZE] [count=BLOCKS] [if=FILE] [of=FILE] [seek=BLOCKS] [skip=BLOCKS] [--size] [--list] [--progress]
SIZE and BLOCKS may have one of the following suffix:
k = 1024
M = 1048576
G = 1073741824
default block size (bs) is 512 bytes
skip specifies the starting offset of the input file (if)
seek specifies the starting offset of the output file (of)

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
1+0 records in
1+0 records out

C:\OS\LAB\LAB1>dir
Volume in drive C has no label.
Volume Serial Number is 72B0-B1E6

Directory of C:\OS\LAB\LAB1

07/09/2016 11.41 <DIR>      .
07/09/2016 11.41 <DIR>      ..
16/12/2008 16.09          10.237 bochsout.txt
15/12/2008 16.17          1.628 bochsrc.bxrc
14/12/2008 12.02          14.365 boot.asm
11/09/2019 10.18          512 boot.bin
16/09/2015 07.51          512 boots.bin
15/12/2008 00.47           78 dosfp.bat
11/09/2019 10.18        1.474.560 floppya.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)          1.510.129 bytes
    2 Dir(s)    87.164.596.224 bytes free
```

```
Bochs for Windows - Console
C:\OS\LAB\LAB1>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\LAB1>del floppya.img

C:\OS\LAB\LAB1>dir
Volume in drive C has no label.
Volume Serial Number is 72B0-B1E6

Directory of C:\OS\LAB\LAB1

11/09/2019  10.19  <DIR>      .
11/09/2019  10.19  <DIR>      ..
16/12/2008  16.09             10.237 bochsout.txt
15/12/2008  16.17             1.628 bochsrc.bxrc
14/12/2008  12.02             14.365 boot.asm
11/09/2019  10.18             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)      35,569 bytes
               2 Dir(s)      87,166,070,784 bytes free

C:\OS\LAB\LAB1>cd..

C:\OS\LAB>cd..

C:\OS>cd Bochs-2.3.5

C:\OS\Bochs-2.3.5>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] fd
```

```
Bochs for Windows - Console
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] 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] floppya.img

The disk image 'floppya.img' already exists. Are you sure you want to replace it?
Please type yes or no. [no] yes

Writing: [] Done.

I wrote 1474560 bytes to floppya.img.

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

Press any key to continue

C:\OS\Bochs-2.3.5>cd..

C:\OS>cd lab..

C:\OS\LAB>cd lab1

C:\OS\LAB\LAB1>dir
Volume in drive C has no label.
Volume Serial Number is 72B0-B1E6

Directory of C:\OS\LAB\LAB1

11/09/2019  10.19  <DIR>      .
11/09/2019  10.19  <DIR>      ..
16/12/2008  16.09             10.237 bochsout.txt
15/12/2008  16.17             1.628 bochsrc.bxrc
14/12/2008  12.02             14.365 boot.asm
11/09/2019  10.18             512 boot.bin
```

```
Bochs for Windows - Console
C:\OS>cd lab..
C:\OS\LAB>cd lab1
C:\OS\LAB\LAB1>dir
Volume in drive C has no label.
Volume Serial Number is 72B0-B1E6

Directory of C:\OS\LAB\LAB1

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15/12/2008  12.20             44 s.bat
               9 File(s)          35.569 bytes
               2 Dir(s)  87.166.070.784 bytes free

C:\OS\LAB\LAB1>s
C:\OS\LAB\LAB1>..\..\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 bochsout.txt
```

```
Bochs for Windows - Console
C:\OS>cd lab..
C:\OS\LAB>cd lab1
C:\OS\LAB\LAB1>dir
Volume in drive C has no label.
Volume Serial Number is 72B0-B1E6

Directory of C:\OS\LAB\LAB1

11/09/2019  10.19  <DIR>          .
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11/09/2019  10.18             512 boot.bin
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15/12/2008  00.47             78 dosfp.bat
14/12/2008  11.45             7.966 kernel.asm
15/12/2008  16.21             227 Makefile
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               9 File(s)          35.569 bytes
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C:\OS\LAB\LAB1>s
C:\OS\LAB\LAB1>..\..\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 bochsout.txt

Bochs for Windows - Display
PANIC
This program has encountered a fatal error.
Please report this problem to the developer.
Device: [BIOS]
Message: No bootable device.
Continue
Continue and don't ask again
Abort (dump core)
OK
Cancel
CTRL + Lbutton + Rbutton enables mo A: NUM CAPS SCRL
```