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1. Ketik “cd C:/OS” dan jalankan perintah “setpath”, terakhir ketik “cd LAB/LAB2” dilanjutkan dengan perintah “dir”
2. Ketik “del floppy.img” untuk mengilangkan file floppy.img, lalu ketik “dir” untuk memastikan apakah file floppy sudah terhapus atau belum

```
Microsoft Windows [Version 10.0.14393]
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C:\Users\USER>cd C:/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 is 10_OS
Volume Serial Number is B642-AA5B

Directory of C:\OS\LAB\LAB2

25/09/2018 15:28 <DIR>      .
25/09/2018 15:28 <DIR>      ..
25/09/2018 15:51             10.156 bochs.log
15/12/2008 23:18             1.625 bochsrc.bxrc
25/09/2018 15:40             15.940 boot.asm
25/09/2018 15:50             512 boot.bin
16/09/2007 23:22            18.432 bximage.exe
27/02/2007 03:50            342.016 dd.exe
15/12/2008 20:52              78 dosfp.bat
25/09/2018 15:50          1.474.560 floppy.img
19/09/2018 12:09             7.966 kernel.asm
22/09/2018 15:33             611 kernel.bin
25/09/2018 15:29 <DIR>      LAB2
15/12/2008 23:21             228 Makefile
15/12/2008 19:20              44 s.bat
                12 File(s)      1.872.168 bytes
                 3 Dir(s) 41.223.753.728 bytes free

C:\OS\LAB\LAB2>del floppy.img
C:\OS\LAB\LAB2>dir
Volume in drive C is 10_OS
Volume Serial Number is B642-AA5B

Directory of C:\OS\LAB\LAB2

25/09/2018 22:06 <DIR>      .
25/09/2018 22:06 <DIR>      ..
25/09/2018 15:51             10.156 bochs.log
15/12/2008 23:18             1.625 bochsrc.bxrc
25/09/2018 15:40             15.940 boot.asm
```

```
Directory of C:\OS\LAB\LAB2

25/09/2018 15:28 <DIR>      .
25/09/2018 15:28 <DIR>      ..
25/09/2018 15:51             10.156 bochs.log
15/12/2008 23:18             1.625 bochsrc.bxrc
25/09/2018 15:40             15.940 boot.asm
25/09/2018 15:50             512 boot.bin
16/09/2007 23:22            18.432 bximage.exe
27/02/2007 03:50            342.016 dd.exe
15/12/2008 20:52              78 dosfp.bat
25/09/2018 15:50          1.474.560 floppy.img
19/09/2018 12:09             7.966 kernel.asm
22/09/2018 15:33             611 kernel.bin
25/09/2018 15:29 <DIR>      LAB2
15/12/2008 23:21             228 Makefile
15/12/2008 19:20              44 s.bat
                12 File(s)      1.872.168 bytes
                 3 Dir(s) 41.223.753.728 bytes free

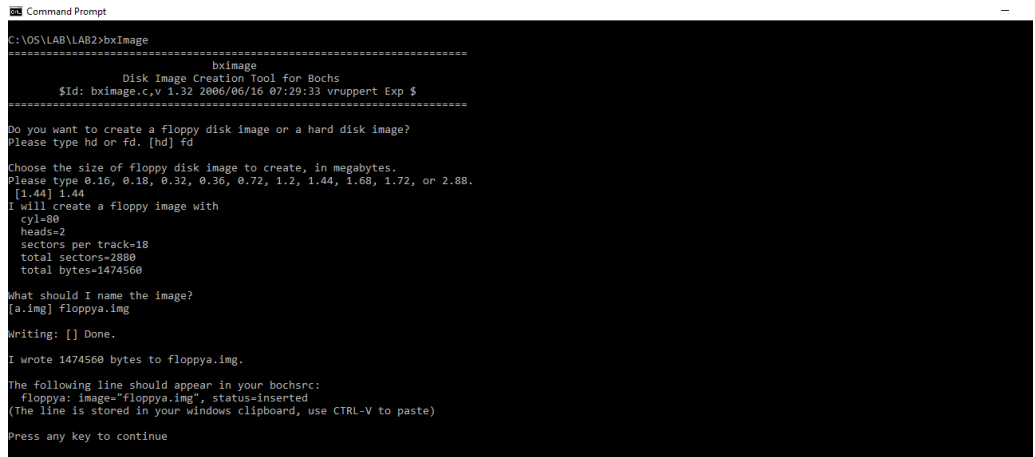
C:\OS\LAB\LAB2>del floppy.img
C:\OS\LAB\LAB2>dir
Volume in drive C is 10_OS
Volume Serial Number is B642-AA5B

Directory of C:\OS\LAB\LAB2

25/09/2018 22:06 <DIR>      .
25/09/2018 22:06 <DIR>      ..
25/09/2018 15:51             10.156 bochs.log
15/12/2008 23:18             1.625 bochsrc.bxrc
25/09/2018 15:40             15.940 boot.asm
25/09/2018 15:50             512 boot.bin
16/09/2007 23:22            18.432 bximage.exe
27/02/2007 03:50            342.016 dd.exe
15/12/2008 20:52              78 dosfp.bat
19/09/2018 12:09             7.966 kernel.asm
22/09/2018 15:33             611 kernel.bin
25/09/2018 15:29 <DIR>      LAB2
15/12/2008 23:21             228 Makefile
15/12/2008 19:20              44 s.bat
                11 File(s)      397.688 bytes
                 3 Dir(s) 41.224.806.400 bytes free

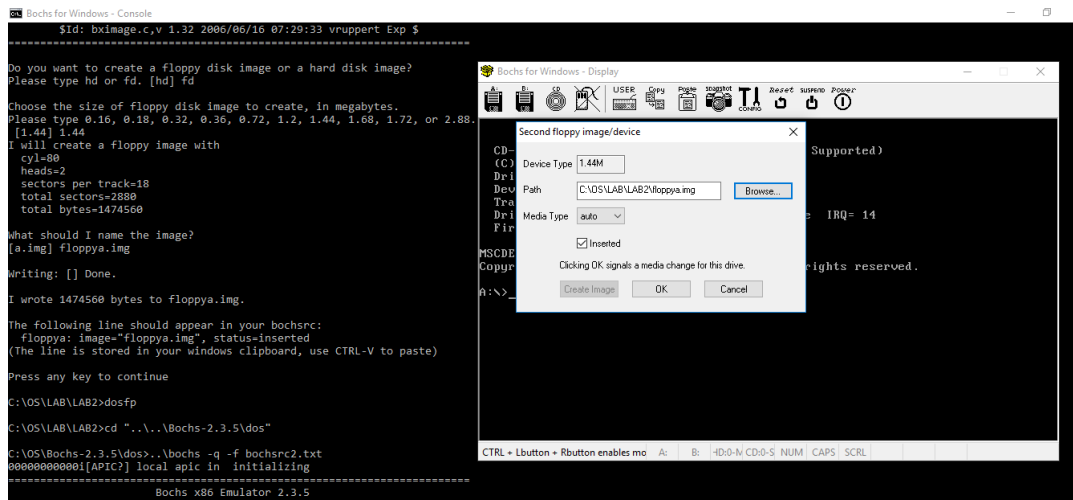
C:\OS\LAB\LAB2>bxImage
```

3. Ketik “bxlImage” untuk menentukan size file

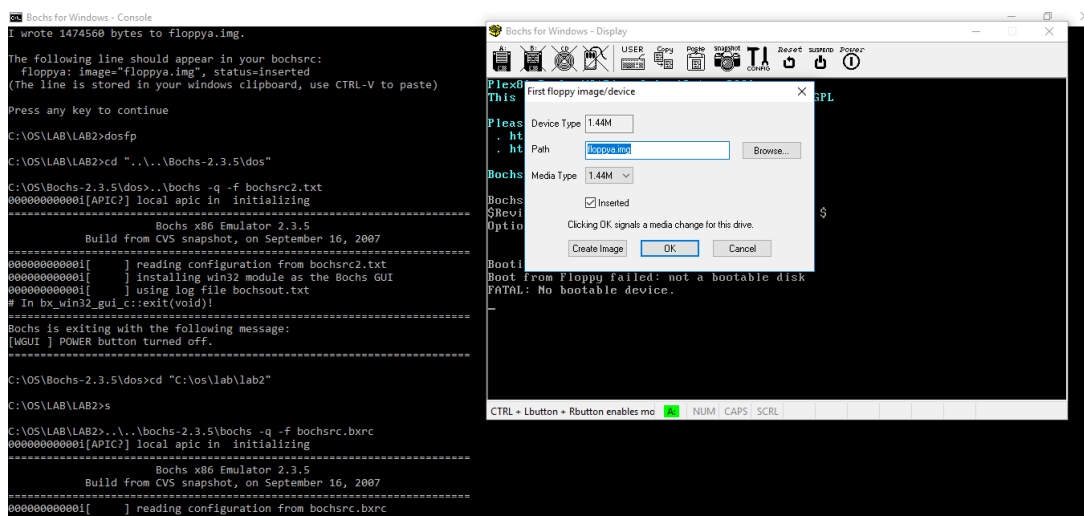


size

4. Ketik “dosfp” untuk memformat floppy.img dan mengisinya dengan sistem operasi DOS versi 7, dengan mengeklik gambar floppy disk nomor dua dari kanan



5. Ketik “S” untuk melakukan proses boot dengan disk boot yang berasal dari file floppy.img yang diletakan pada dirve A



- Kompilasi source code boot.asm dan memindah hasilnya ke bootsector floppya.img. pindah ke directory kerja LAB2 , lalu Ketik “make fp.disk”
- Lalu ketik “S” untuk menjalankan booting

```

C:\OS\LAB\LAB2>cd "C:\os\lab\lab2"
C:\OS\LAB\LAB2>
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:
[WGUI ] POWER button turned off.
-----
C:\OS\LAB\LAB2>make fp.disk
nasm boot.asm -o boot.bin -f bin
dd if=boot.bin of=floppya.img
+write 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>
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 is exiting with the following message:
[WGUI ] POWER button turned off.
-----
C:\OS\LAB\LAB2>notepad boot.asm
C:\OS\LAB\LAB2>
  
```

- Lalu ketik “Notepad boot.asm”, cari loading kernel dan ganti dengan belajar membuat BOOTSTRAP-LOADER

```

C:\OS\LAB\LAB2>cd "C:\os\lab\lab2"
C:\OS\LAB\LAB2>
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:
[WGUI ] POWER button turned off.
-----
C:\OS\LAB\LAB2>make fp.disk
nasm boot.asm -o boot.bin -f bin
dd if=boot.bin of=floppya.img
+write 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>
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 is exiting with the following message:
[WGUI ] POWER button turned off.
-----
C:\OS\LAB\LAB2>notepad boot.asm
C:\OS\LAB\LAB2>
  
```

9. Ketik “make kernel” untuk membuat file KERNEL.BIN, lalu jalankan perintah “dir”

```
Command Prompt
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 ] POWER button turned off.
=====

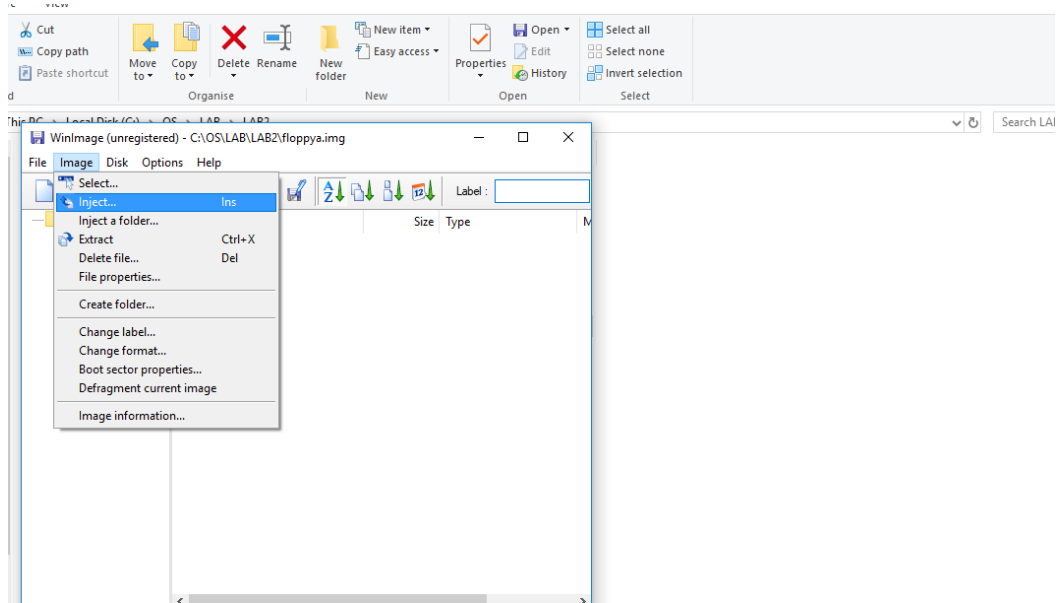
C:\OS\LAB\LAB2>make kernel
nasm kernel.asm -o kernel.bin -f bin

C:\OS\LAB\LAB2>dir
Volume in drive C has no label.
Volume Serial Number is E60E-0100

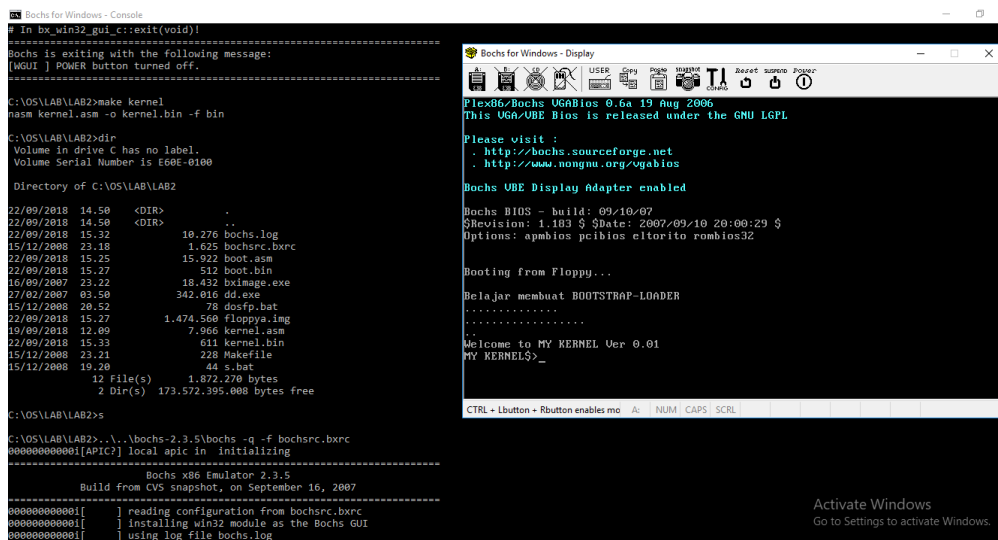
Directory of C:\OS\LAB\LAB2

22/09/2018  14.50  <DIR>          .
22/09/2018  14.50  <DIR>          ..
22/09/2018  15.32             10.276 bochs.log
15/12/2008  23.18             1.625 bochsrc.bxrc
22/09/2018  15.25             15.922 boot.asm
22/09/2018  15.27             512 boot.bin
16/09/2007  23.22             18.432 bximage.exe
27/02/2007  03.50             342.016 dd.exe
15/12/2008  20.52              78 dosfp.bat
22/09/2018  15.27          1.474.560 floppy.aimg
19/09/2018  12.09             7.966 kernel.asm
22/09/2018  15.33             611 kernel.bin
15/12/2008  23.21             228 Makefile
15/12/2008  19.20              44 s.bat
               12 File(s)          1.872.270 bytes
               2 Dir(s)        173.572.395.008 bytes free
```

10. Memindahkan file “kernel.bin” kedalam file image “floppya.img”, cari file floppy ayng terdapat pada directory C, lalu masukan kernel.bin pada window winImage klik menu inject cari kernel.bin lalu ok



11. Lalu ketik “S” untuk melihat booting



12. Lalu modifikasi kernel.asm, lalu jalankan perintah “Notepad boot.asm”, cari teks “Welcome to MY KERNEL”, diganti dengan “Belajar membuat KERNEL”, lalu save , kemudian ketik “S” untuk melihat booting

```
Bochs for Windows - Console
27/02/2007 03:50      342,016 dd.exe
15/12/2008 20:52          78 dosfstool
25/09/2018 16:38      1,474,560 Floppy-Img
19/09/2018 12:09          7,966 kernel.asm
25/09/2018 16:41          611 kernel.bin
15/12/2008 23:21          228 Makefile
15/12/2008 19:30          44 s.bat
                12 File(s)      1,872,146 bytes
                2 Dir(s)      171,509,030,912 bytes free

C:\OS\LAB\LAB2>

C:\OS\LAB\LAB2>..\..\bochs-2.3.5\bochs -q -f bochsrc.bxrc
000000000001[APIC?] local apic in initializing
-----
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
000000000001[ ] reading configuration from bochsrc.bxrc
000000000001[ ] installing win32 module as the Bochs GUI
000000000001[ ] using log file bochs.log
# In bx_win32_gui.c:exit(void)!
-----
Bochs is exiting with the following message:
[VGUI ] POWER button turned off.

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>

C:\OS\LAB\LAB2>..\..\bochs-2.3.5\bochs -q -f bochsrc.bxrc
000000000001[APIC?] local apic in initializing
-----
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
000000000001[ ] reading configuration from bochsrc.bxrc
000000000001[ ] installing win32 module as the Bochs GUI
000000000001[ ] using log file bochs.log
```