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MODUL 2

```
C:\Windows\system32\cmd.exe - himage
Microsoft Windows [Version 10.0.16299.967]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Users\acer>cd ..
C:\Users>cd ..
C:\>cd OS
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\LAB2
C:\OS\LAB\LAB2>dir
Volume in drive C is Acer
Volume Serial Number is 2064-90C8

Directory of C:\OS\LAB\LAB2

29/09/2019  19:57    <DIR>          .
29/09/2019  19:57    <DIR>          ..
15/12/2008  16:18                1.625 bochsarc.barc
15/12/2008  17:57            15.923 boot.asm
15/12/2008  13:52                78 dosfp.bat
15/12/2008  17:57            7.966 kernel.asm
15/12/2008  16:21                228 Makefile
15/12/2008  12:20                44 s.bat
               6 File(s)          25.864 bytes
               2 Dir(s)  417.886.488.704 bytes free

C:\OS\LAB\LAB2>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] 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] 1.44
```

```
C:\Windows\system32\cmd.exe - himage
29/09/2019  19:57    <DIR>          .
29/09/2019  19:57    <DIR>          ..
15/12/2008  16:18                1.625 bochsarc.barc
15/12/2008  17:57            15.923 boot.asm
15/12/2008  13:52                78 dosfp.bat
15/12/2008  17:57            7.966 kernel.asm
15/12/2008  16:21                228 Makefile
15/12/2008  12:20                44 s.bat
               6 File(s)          25.864 bytes
               2 Dir(s)  417.886.488.704 bytes free

C:\OS\LAB\LAB2>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] 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] 1.44
I will create a floppy image with
  cyl=80
  heads=2
  sectors per track=18
  total sectors=3888
  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:\Windows\system32\cmd.exe
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] 1.44
I will create a floppy image with
  cyl=80
  heads=2
  sectors per track=18
  total sectors=3888
  total bytes=1474560
What should I name the image?
[a.img] floppy.a.img
Writing: [] Done.
I wrote 1474560 bytes to floppy.a.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\LAB\LAB2>dir
Volume in drive C is Acer
Volume Serial Number is 20E4-96C8

Directory of C:\OS\LAB\LAB2

29/09/2019  20:05    <DIR>          .
29/09/2019  20:05    <DIR>          ..
15/12/2008  16:18                1,625 bochsrc.bsrc
15/12/2008  17:57                15,923 boot.asm
15/12/2008  13:52                 78 dosfp.bat
29/09/2019  20:05            1,474,560 floppy.a.img
15/12/2008  17:57                7,966 kernel.asm
15/12/2008  16:21                 228 Makefile
15/12/2008  12:20                  44 s.bat
               7 File(s)      1,500,424 bytes
               2 Dir(s)      417,884,647,424 bytes free

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

```
Bochs for Windows - Console
[a.img] floppy.a.img
Writing: [] Done.
I wrote 1474560 bytes to floppy.a.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\LAB\LAB2>dir
Volume in drive C is Acer
Volume Serial Number is 20E4-96C8

Directory of C:\OS\LAB\LAB2

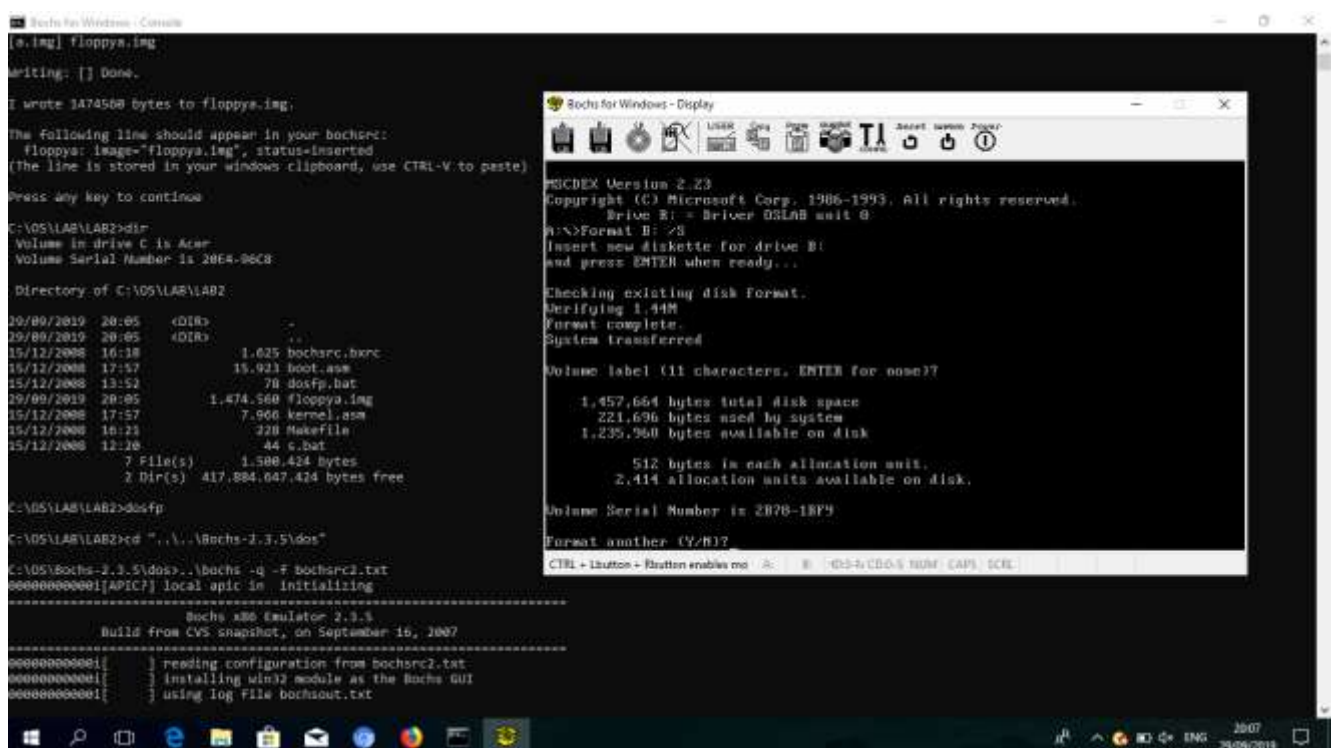
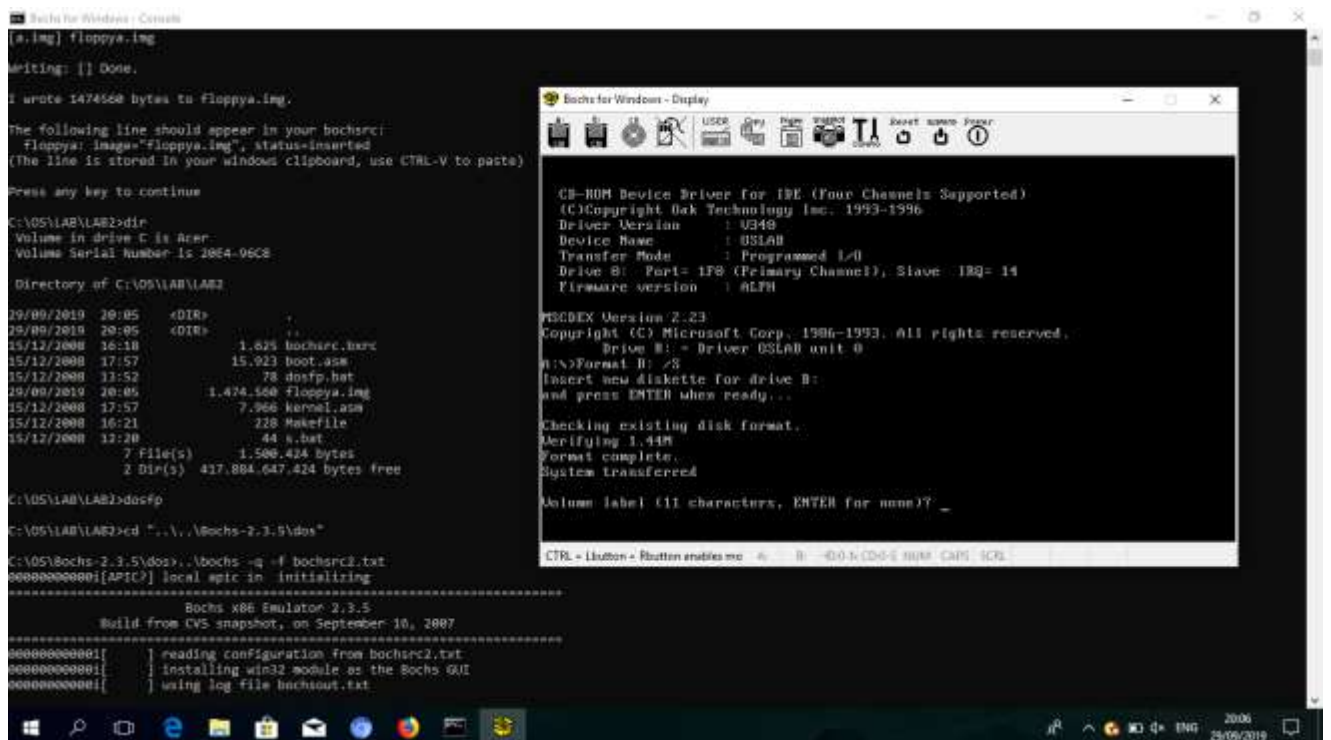
29/09/2019  20:05    <DIR>          .
29/09/2019  20:05    <DIR>          ..
15/12/2008  16:18                1,625 bochsrc.bsrc
15/12/2008  17:57                15,923 boot.asm
15/12/2008  13:52                 78 dosfp.bat
29/09/2019  20:05            1,474,560 floppy.a.img
15/12/2008  17:57                7,966 kernel.asm
15/12/2008  16:21                 228 Makefile
15/12/2008  12:20                  44 s.bat
               7 File(s)      1,500,424 bytes
               2 Dir(s)      417,884,647,424 bytes free

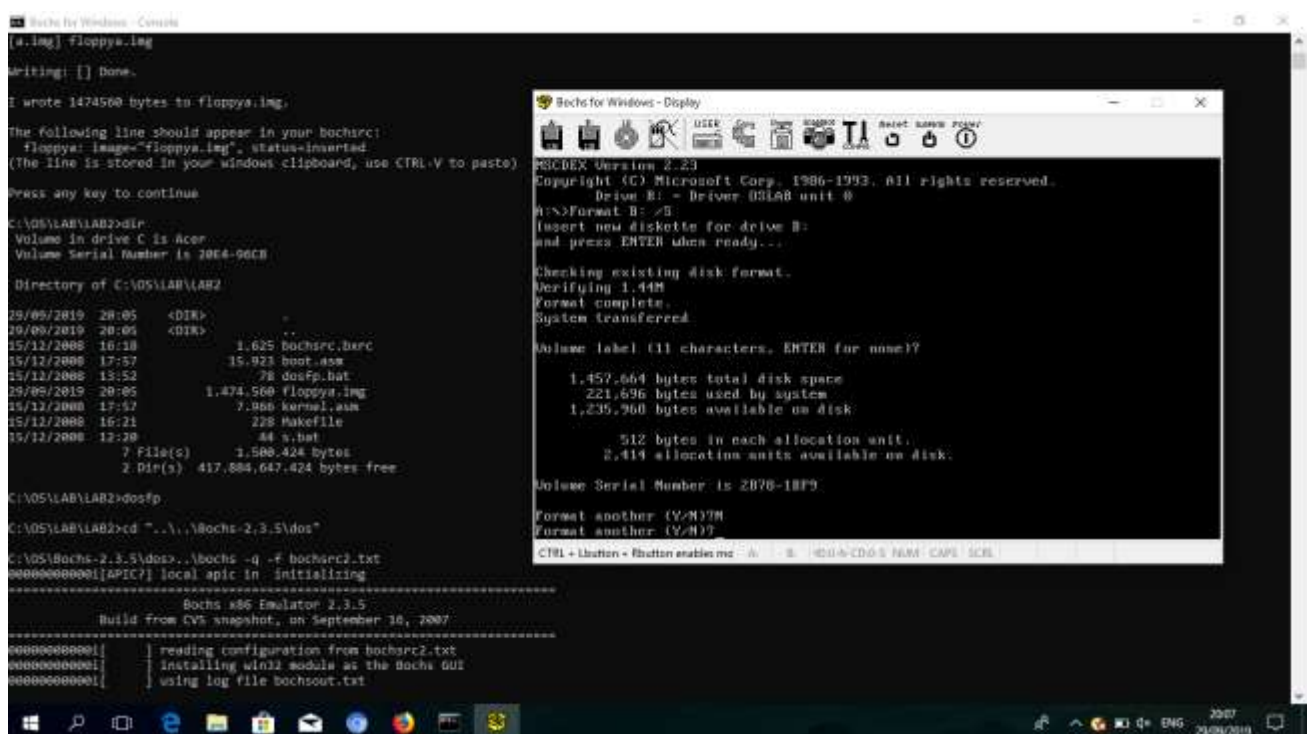
C:\OS\LAB\LAB2>dosfp
C:\OS\LAB\LAB2>cd "..\..\Bochs-2.3.5\dos"
C:\OS\Bochs-2.3.5\dos>.\bochs -q -f bochsrc2.txt
0000000000[APIC] local apic in initializing
*****
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 10, 2007
*****
0000000000[ ] reading configuration from bochsrc2.txt
0000000000[ ] installing win32 module as the Bochs GUI
0000000000[ ] using log file bochsout.txt

Bochs for Windows - Display
CS-ROM Device Driver for IDE (Four Channels Supported)
(C)Copyright Oak Technology Inc. 1993-1996
Driver Version      : 0348
Device Name         : OSLAB
Transfer Mode       : Programmed I/O
Drive B: Port: 1F8 (Primary Channel), Slave IRQ= 14
Firmware version    : 0L7M

MSCDIX Version 2.23
Copyright (C) Microsoft Corp. 1986-1993. All rights reserved.
Drive B: - Driver OSLAB unit 0

H:\>_
CTRL = Lbutton + Rbutton enables mo  B: -0-0-N-CD-R-S-BURN CAPS SCRL
```






```
C:\Windows\system32\cmd.exe
000000000001|      reading configuration from bochart.barc
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:
[BIOS ] No bootable device.
=====

C:\OS\LAB\LAB2>S

C:\OS\LAB\LAB2>.\..\bochs-2.3.5\bochs -q -f bochs.rc.barc
000000000001[APIC?] local apic in  initializing
=====
Bochs x86 emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
000000000001|      reading configuration from bochart.barc
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:
[BIOS ] No bootable device.
=====

C:\OS\LAB\LAB2>S

C:\OS\LAB\LAB2>.\..\bochs-2.3.5\bochs -q -f bochs.rc.barc
000000000001[APIC?] local apic in  initializing
=====
Bochs x86 emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
000000000001|      reading configuration from bochart.barc
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:
[MOJI ] POWER button turned off.
=====

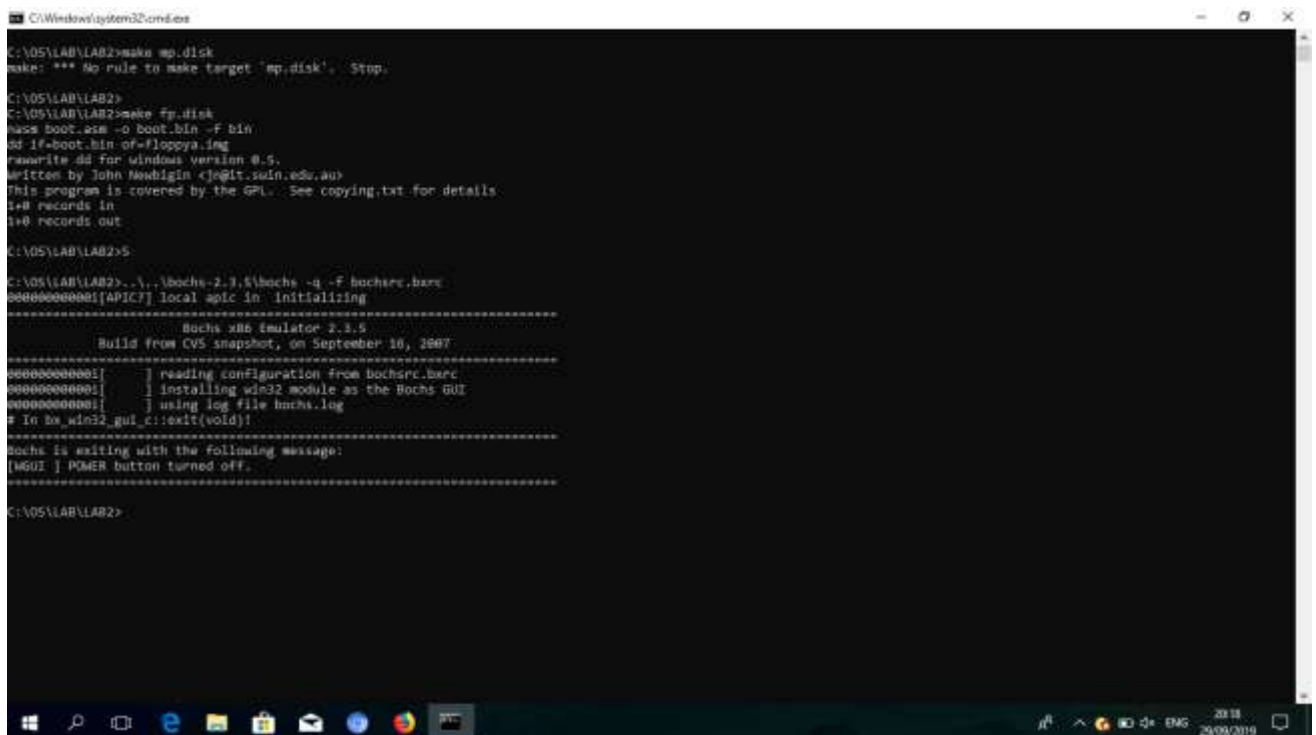
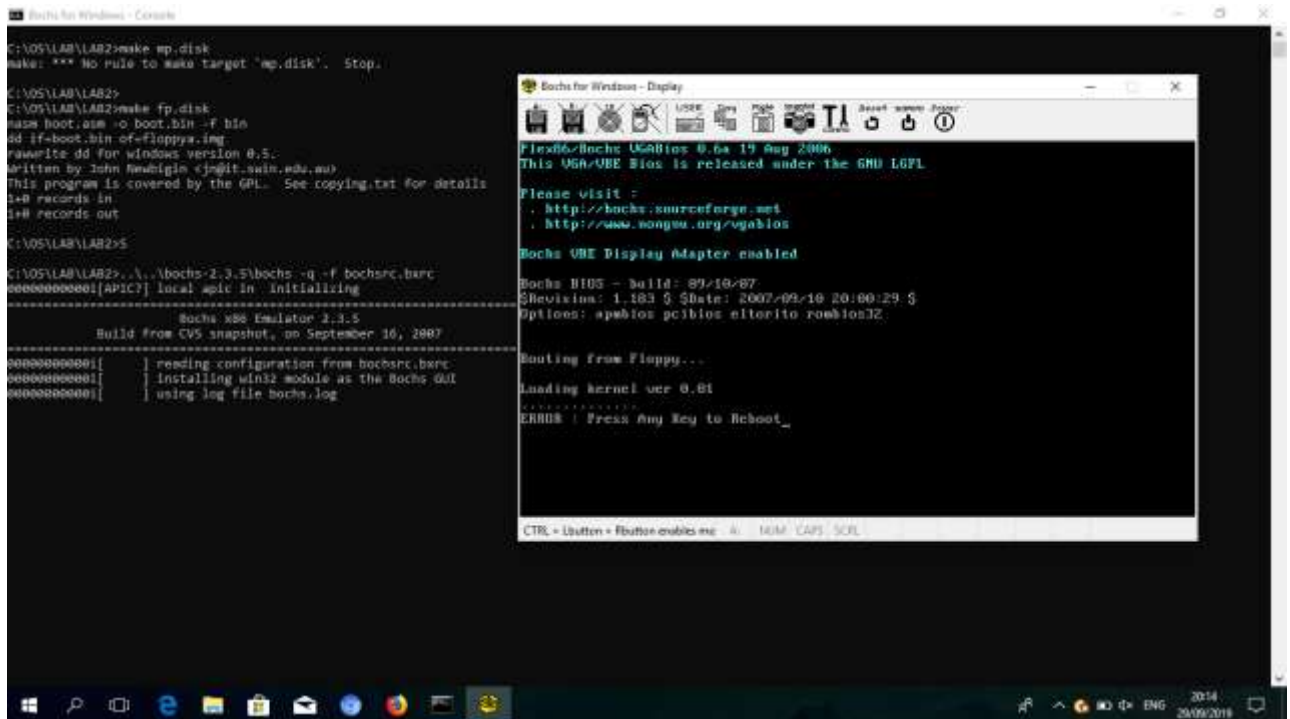
C:\OS\LAB\LAB2>
```

```
C:\Windows\system32\cmd.exe

C:\OS\LAB\LAB2>make mp.disk
make: *** No rule to make target 'mp.disk'.  Stop.

C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2>make fp.disk
make boot.asm -o boot.bin -f bin
dd if=boot.bin of=floppy.img
rawrite dd for windows version 0.5.
Written by John Hewbigin <jnh@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:\Windows\system32\cmd.exe

C:\OS\LAB\LAB2> msgCRLF db 0x00, 0x0A, 0x00
'msgCRLF' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB2> msgProgress db " ", 0x00
'msgProgress' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2> Teks yang di tampilkan saat terjadi kesalahan BOOT
'Teks' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2> msgFailure db 0x00, 0x0A, "Belajar membuat BOOTSTRAP-LOADER", 0x00
'msgFailure' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2> (4) BLOK BOOT SIGNATURE
BLOK was unexpected at this time.

C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2> TIMES 510-($-$) 00 0
'TIMES' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB2> DW 0xA55
'DW' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB2> ;
'*****' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB2> Make fp.disk
nam boot.asm -o boot.bin -f bin
boot.asm:331: error: TIMES value -23 is negative
Make: *** [boot] Error 1

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

```
Bochs for Windows - Console

C:\OS\LAB\LAB2> Teks yang di tampilkan saat terjadi kesalahan BOOT
'Teks' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2> msgFailure db 0x00, 0x0A, "Belajar memb
'msgFailure' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2> (4) BLOK BOOT SIGNATURE
BLOK was unexpected at this time.

C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2> TIMES 510-($-$) 00 0
'TIMES' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB2> DW 0xA55
'DW' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB2> ;
'*****' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB2> Make fp.disk
nam boot.asm -o boot.bin -f bin
boot.asm:331: error: TIMES value -23 is negative
Make: *** [boot] Error 1

C:\OS\LAB\LAB2>S

C:\OS\LAB\LAB2>..\..\bochs-2.3.5\bochs -q -f bochsrc.bsrc
000000000000[APIC7] local apic in Initializing
-----
Bochs x86 emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
-----
000000000000[ ] reading configuration from bochsrc.bsrc
000000000000[ ] installing win32 module as the Bochs GUI
000000000000[ ] using log file bochs.log

Bochs for Windows - Display

Plex86/Bochs VGA/Bios 0.6a 19 Aug 2006
This VGA/VBE Bios is released under the GNU LGPL

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

Bochs VBE Display Adapter enabled

Bochs BIOS - build: 89/10/07
$Revision: 1.103 $ $Date: 2007/09/10 20:00:29 $
Options: apmbox pcibus alterite runbios32

Booting from Floppy...

Loading kernel ver 0.01
-----
ERROR : Press Any Key to Reboot_

CTRL + Uppert + Rightn enables exit  NEM: CAPS: NCL
```

```
C:\Windows\system32\cmd.exe
boot.asm:331: error: TIMES value -23 is negative
Make: *** [boot] Error 1

C:\OS\LAB\LAB2>
C:\OS\LAB\LAB2>..\..\bochs-2.3.5\bochs -q -f bochsrc.bsrc
*****[APIC] local apic in Initializing
*****
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
*****
000000000001[ ] reading configuration from bochsrc.bsrc
000000000001[ ] installing win32 module as the Bochs GUI
000000000001[ ] using log file bochs.log
*****
# In the win32_gui.c::exit(void)!
Bochs is exiting with the following message:
[AGUI ] POWER button turned off.
*****

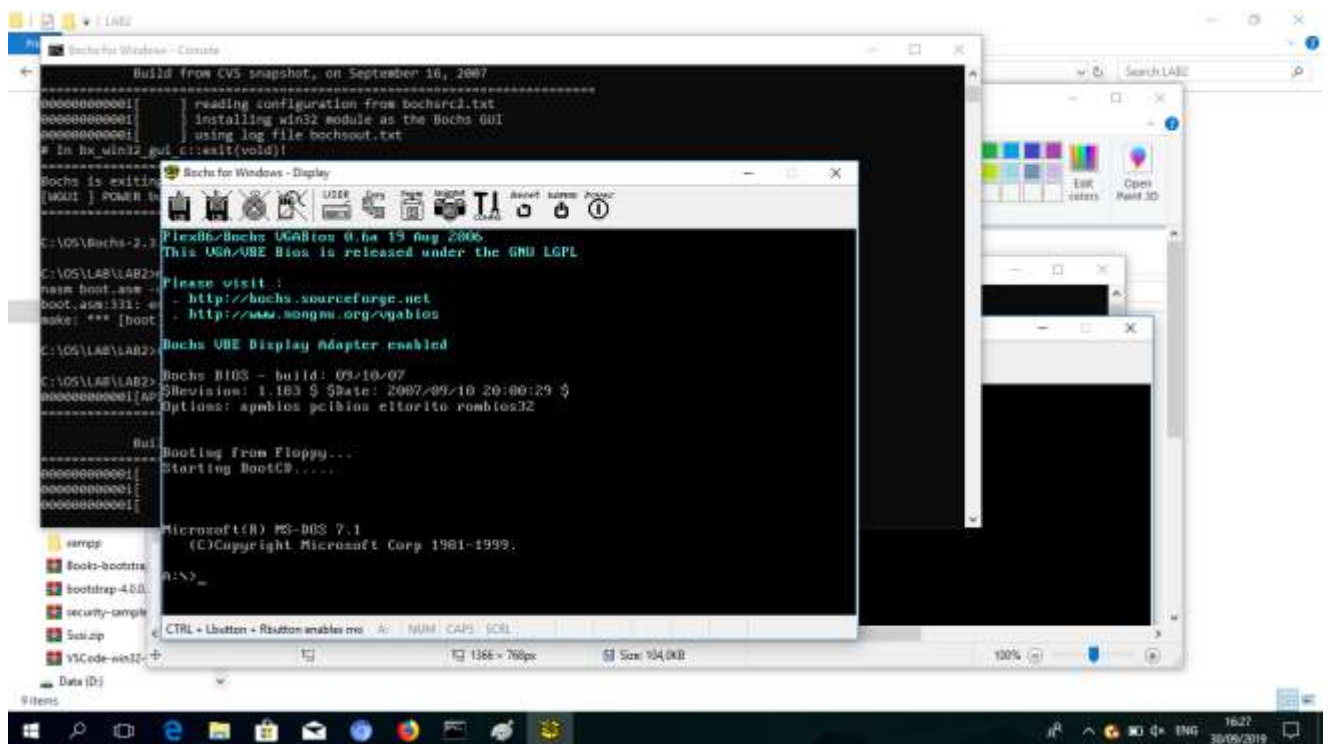
C:\OS\LAB\LAB2>make kernel
make kernel.asm -o kernel.bin -f bin

C:\OS\LAB\LAB2>dir
Volume in drive C is Acer
Volume Serial Number is 2014-98C8

Directory of C:\OS\LAB\LAB2

29/09/2019  20:40    <DIR>          .
29/09/2019  20:40    <DIR>          ..
29/09/2019  20:39             11,079 bochs.log
15/12/2008  16:18             1,425 bochsrc.bsrc
29/09/2019  20:37             15,972 boot.asm
15/12/2008  13:52              78 dosfp.bat
29/09/2019  20:14          1,474,560 floppy.a.img
15/12/2008  17:57             7,966 kernel.asm
29/09/2019  20:40              611 kernel.bin
15/12/2008  16:21              328 Makefile
15/12/2008  12:20              44 s.bat
               9 File(s)          1,512,163 bytes
               2 Dir(s)          417,878,949 bytes free

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




```
Select Bochs for Windows - Console
Microsoft Windows [Version 10.0.10290.967]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Users\lasered>
C:\Users\lasered>
C:\>cd w
C:\>setpath
C:\>Path=C:\OS\Dev-Cpp\bin;C:\OS\Bochs-2.3.5\c\OS\Peri;C:\Windows\Windows\System32
C:\>cd lab1lab2
C:\OS\LAB\LAB2>dir
Volume in drive C is Acer
Volume Serial Number is 28E4-96C8

Directory of C:\OS\LAB\LAB2

10/09/2019  19:36    <DIR>        .
10/09/2019  19:36    <DIR>        ..
15/12/2008  18:18                1.625 bochsrg.hart
15/12/2008  17:57                15.923 boot.asm
15/12/2008  13:51                 70 dosfp.bat
15/12/2008  17:57                7.948 kernel.asm
15/12/2008  16:21                 220 Makefile
15/12/2008  12:20                 44 s.bat
               8 File(s)      25,884 bytes
               2 Dir(s)      417,638,904,128 bytes free

C:\OS\LAB\LAB2>hxiImage
-----
hxiImage
Disk Image Creation Tool for Bochs
SID: hxiImage-c,v 1.32 2006/06/18 07:29:53 vruppert Exp $
-----

Do you want to create a floppy disk image or a hard disk image?
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, 0.71, 1.2, 1.44, 1.68, 1.72, or 1.88.
[1.44] 1.44
```

```
Select Bochs for Windows - Console
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

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\LAB\LAB2>dir
Volume in drive C is Acer
Volume Serial Number is 28E4-96C8

Directory of C:\OS\LAB\LAB2

10/09/2019  19:40    <DIR>        .
10/09/2019  19:40    <DIR>        ..
15/12/2008  18:18                1.625 bochsrg.hart
15/12/2008  17:57                15.923 boot.asm
15/12/2008  13:52                 70 dosfp.bat
10/09/2019  19:40            1,474,560 floppya.img
15/12/2008  17:57                7.948 kernel.asm
15/12/2008  16:21                 220 Makefile
15/12/2008  12:20                 44 s.bat
               7 File(s)      1,500,434 bytes
               2 Dir(s)      417,638,548,416 bytes free

C:\OS\LAB\LAB2>dosfp
C:\OS\LAB\LAB2>cd "..\..\Bochs-2.3.5\dos"
C:\OS\Bochs-2.3.5\dos>.\bochs -q -F bochsrc2.txt
oooooooooooo[APIC] local apic in Initializing
```



```
C:\Windows\system32\cmd.exe
000000000001[      ] Installing win32 module as the bochs GUI
000000000001[      ] using log file bochsout.txt

C:\OS\Bochs-2.3.5\dos>cd "C:\os\lab\lab2"

C:\OS\LAB\LAB2>doskey

C:\OS\LAB\LAB2>cd "...\Bochs-2.3.5\dos"

C:\OS\Bochs-2.3.5\dos>.\bochs -q -f bochs2.txt
000000000001[APIC?] local apic in: initializing
-----
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
-----
000000000001[      ] reading configuration from bochs2.txt
000000000001[      ] installing win32 module as the bochs GUI
000000000001[      ] using log file bochsout.txt
# In bx_win32_gui.c:exit(void)!
-----
Bochs is exiting with the following message:
[GUI] POWER button turned off.
-----

C:\OS\Bochs-2.3.5\dos>cd "C:\os\lab\lab2"

C:\OS\LAB\LAB2>S

C:\OS\LAB\LAB2>.\..\bochs-2.3.5\bochs -q -f bochs2.barc
000000000001[APIC?] local apic in: initializing
-----
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
-----
000000000001[      ] reading configuration from bochs2.barc
000000000001[      ] installing win32 module as the bochs GUI
000000000001[      ] using log file bochs2.log
# In bx_win32_gui.c:exit(void)!
-----
Bochs is exiting with the following message:
[GUI] POWER button turned off.
-----

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

```
Bochs for Windows - Console

C:\OS\Bochs-2.3.5\dos>cd "C:\os\lab\lab2"

C:\OS\LAB\LAB2>S

C:\OS\LAB\LAB2>.\..\bochs-2.3.5\bochs -q -f bochs2.barc
000000000001[APIC?] local apic in: initializing
-----
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
-----
000000000001[      ] reading configuration from bochs2.barc
000000000001[      ] installing win32 module as the bochs GUI
000000000001[      ] using log file bochs2.log
# In bx_win32_gui.c:exit(void)!
-----
Bochs is exiting with the following message:
[GUI] POWER button turned off.
-----

C:\OS\LAB\LAB2>boot.asm

C:\OS\LAB\LAB2>make -f boot.asm
make boot.asm -o boot.bin -f bin
dd if=boot.bin of=floppya.img
rewrite dd for windows version 0.5.
Written by John Mordigan (jmdit.mun.edu.au)
This program is covered by the GPL. See copying.txt for details
140 records in
140 records out

C:\OS\LAB\LAB2>S

C:\OS\LAB\LAB2>.\..\bochs-2.3.5\bochs -q -f bochs2.barc
000000000001[APIC?] local apic in: initializing
-----
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
-----
000000000001[      ] reading configuration from bochs2.barc
000000000001[      ] installing win32 module as the bochs GUI
000000000001[      ] using log file bochs2.log
```

Bochs for Windows - Display

FlexBIO/Bochs Unitium 0.6a 19 Aug 2006
This GUI/UEFI BIOS is released under the GNU LGPL

Please visit:
- <http://bochs.sourceforge.net>
- <http://www.sungnu.org/uefibilos>

Bochs UEFI Display Adapter enabled

Bochs BIOS - build: 09-16-07
\$Revision: 1.103 \$ \$Date: 2007-09-16 20:00:29 \$
Options: apmbios pcibios eltorito reahd32

Booting from Floppy...

Relaxer memboot BOOTSTRAP-LOADER

ERROR: Press Any Key to Reboot

CTRL + Shift + Button enables any BIOS, CAPS, SCROLL

