PRACTICUM REPORT
OPERATION SYSTEM

JUNIAR DARMA YATI

L200194159

MUHAMMADIYAH UNIVERCITY OF SURAKARTA
FACULTY OF COMMUNICATION AND INFORMATICS
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```
Command Prompt                                                                    —  □  ×
Microsoft Windows [Version 10.0.18363.1082]
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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/LAB1

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 is OS
 Volume Serial Number is 4420-3B2C

 Directory of C:\OS\LAB\LAB1

24/09/2020  16:48    <DIR>          .
24/09/2020  16:48    <DIR>          ..
24/09/2020  16:54            10.222 bochsout.txt
15/12/2008  16:17             1.628 bochsrc.bxrc
14/12/2008  12:02            14.365 boot.asm
24/09/2020  18:33               512 boot.bin
16/09/2015  07:51               512 boots.bin
15/12/2008  00:47                78 dosfp.bat
24/09/2020  18:33         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)      1.510.114 bytes
               2 Dir(s)  78.870.523.904 bytes free

C:\OS\LAB\LAB1>del floppya.img
```

1. cd C:\OS = The first step to enter the working directory of C:\OS.

2. setpath = Set the work environment ('path'), which this session must be before starting practicum.

3. cd LAB/LAB1 = Step to enter the directory of LAB/LAB1.

4. make fp.disk = Create files to speed up the complication procces, by using 'make.exe' that is 'fp.disk'.

5. dir = See and make sure the contents of the file 'make fp.disk'.

6. del floppya.img = Delete the file named 'floppya.img'.


```
Command Prompt                                                                    —  □  ×
C:\OS\LAB\LAB1>del floppya.img

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] 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=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\LAB1>dir
 Volume in drive C is OS
 Volume Serial Number is 4420-3B2C

 Directory of C:\OS\LAB\LAB1
```

7. bximage > fd > 1.44 > floppya.img = Is a continuation of 'del floppya.img', which is when we've deleted the file named 'floppya.img', then we call bximage to make file fd (floppya image) with 1.44MB capacity and named 'floppya.img'.


```
Command Prompt                                                                    —    □    ✕
C:\OS\LAB\LAB1>dir
 Volume in drive C is OS
 Volume Serial Number is 4420-3B2C

 Directory of C:\OS\LAB\LAB1

24/09/2020  18:33    <DIR>          .
24/09/2020  18:33    <DIR>          ..
24/09/2020  16:54           10.222 bochsout.txt
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24/09/2020  18:33        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)      1.510.114 bytes
               2 Dir(s)  78.870.523.904 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
# In bx_win32_gui_c::exit(void)!
========================================================================
Bochs is exiting with the following message:
[WGUI ] POWER button turned off.
========================================================================

C:\OS\Bochs-2.3.5\dos>cd "C:\os\lab\lab1"
```

8. dir = Ensure the file of 'floppya.img', which already in directory of C:\OS.

9. dosfp = Copy files to move to another location.

10. format B: > n > power = The name of the location chosen to accommodate the file that has been moved by 'dosfp'. Then enter the answer 'n' to make sure no other format is chosen again. And close it by clicking the power button.

11. tdump boots.bin = Move the data from 'boots.bin' to 'tdump', according to the data address to be display from file floppya.img'.

```
Command Prompt                                                                    —  □  ×

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
00000000000i[APIC?] local apic in  initializing
========================================================================
                    Bochs x86 Emulator 2.3.5
          Build from CVS snapshot, on September 16, 2007
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00000000000i[      ] reading configuration from bochsrc.bxrc
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# In bx_win32_gui_c::exit(void)!
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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
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# In bx_win32_gui_c::exit(void)!
========================================================================
Bochs is exiting with the following message:
[WGUI ] POWER button turned off.
========================================================================
```

12. type s.bat = Calling the PC-Simulator 'bochs' with the configuration file name 'bochsrc.bxrc'.

13. s = Command to do the boot process, but file because diskboot was not found in the configuration file 'bochsrc.bxrc'.

Bochs for Windows - Display

```
Plex86/Bochs VGABios 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: 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
Booting from Floppy...

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

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

14. power = Because the diskboot was not found, this location is closed by clicking the power button.
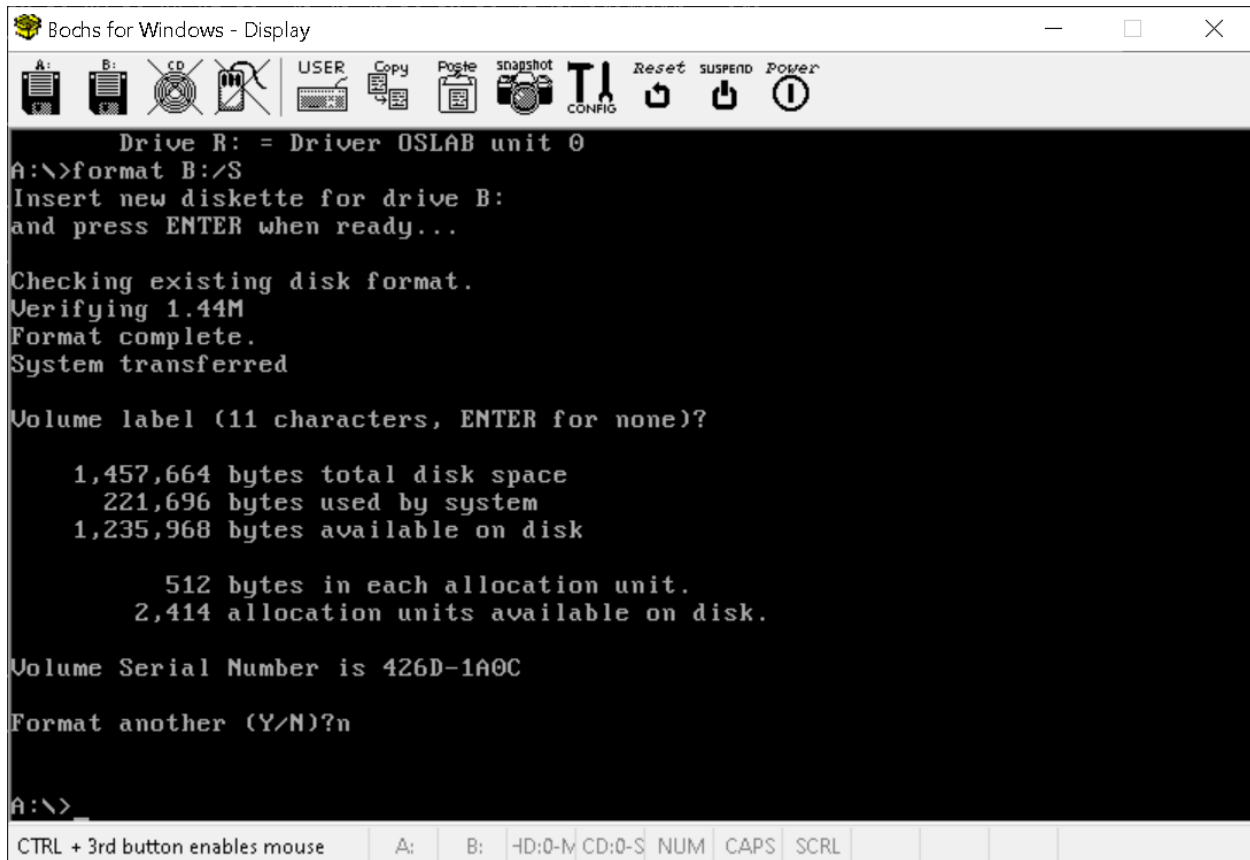


```
C:\OS\LAB\LAB1>dosfp

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
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        Build from CVS snapshot, on September 16, 2007
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0000000000i[     ] reading configuration from bochsrc2.txt
0000000000i[     ] installing win32 module as the Bochs GUI
0000000000i[     ] using log file bochsout.txt
# In bx_win32_gui_c::exit(void)!
========================================================================
Bochs is exiting with the following message:
[WGUI ] POWER button turned off.
========================================================================

C:\OS\Bochs-2.3.5\dos>cd "C:\os\lab\lab1"

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
# In bx_win32_gui_c::exit(void)!
========================================================================
Bochs is exiting with the following message:
[WGUI ] POWER button turned off.
========================================================================

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

15. dosfp = Copy files 'floppya.img' to move to another location.

```
          Drive R: = Driver OSLAB unit 0
A:\>format B:/S
Insert new diskette for drive B:
and press ENTER when ready...

Checking existing disk format.
Verifying 1.44M
Format complete.
System transferred

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 426D-1A0C

Format another (Y/N)?n


A:\>
```

16. format B:/S = The name of the location and 'system file' is chosen to accommodate the file that has been moved by 'dosfp'. Then enter the answer 'n' to make sure no other format is chosen again. And close it by clicking the power button.

17. s = Command to booting file 'floppya.img'.
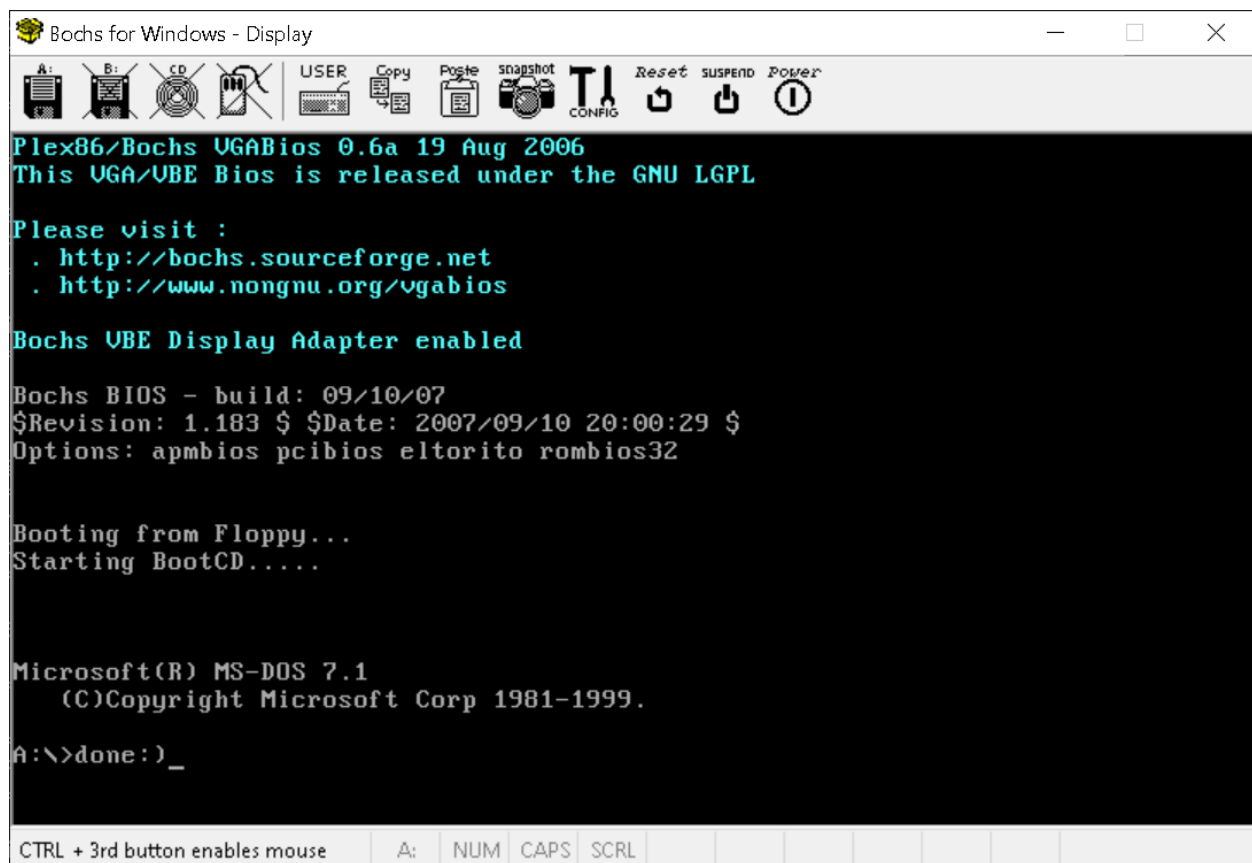
18. Done > power = When finish booting, then close it by clicking power button.