UJIAN TENGAH SEMESTER

PRAKTIKUM SISTEM OPERASI

Disusun oleh:

AFIFAH GHAISANI IMANA

L200190198

PROGRAM STUDI TEKNIK INFORMATIKA

FAKULTAS KOMUNIKASI DAN INFORMATIKA

UNIVERSITAS MUHAMMADIYAH SURAKARTA

TAHUN 2019/2020

1. Buatlah file image floppy baru dengan menggunakan program aplikasi bximage.exe. kemudian lanjutkan hingga menghasilkan output seperti di bawah ini! (20 point)

- Buka folder LAB1, kemudian make fp.disk, lalu buka bximage, pilih fd, 1.44 dan ketik nama image "floppya.img"

```
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>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
1+0 records in
1+0 records out

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

The disk image 'floppya.img' already exists.  Are you sure you want to replace i
t?
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
```
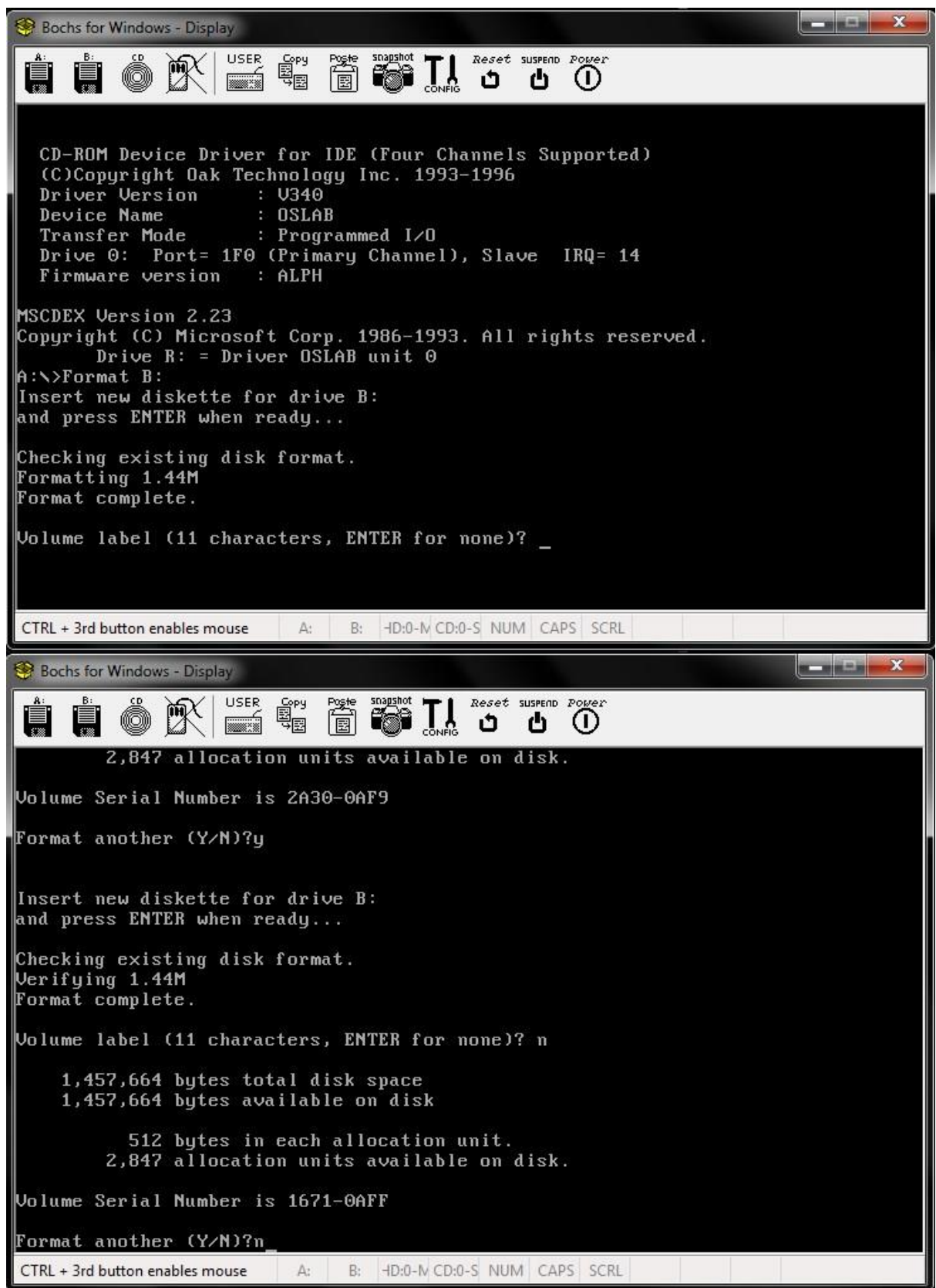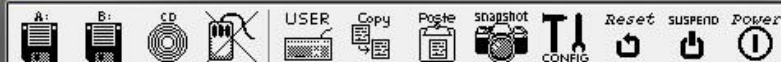
- Ketik Format B: untuk memformat drive B

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

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 0B F0 09 00  12 00 02 00 00 00 00 00  ...@............
000020: 00 00 00 00 00 00 29 E7  0F 15 2C 4E 4F 20 4E 41  ......)...,NO NA
000030: 4D 45 20 20 20 20 46 41  54 31 32 20 20 20 33 C9  ME    FAT12   3.
000040: 8E D1 BC FC 7B 16 07 BD  78 00 C5 76 00 1E 56 16  ....{...x..v..V.
000050: 55 BF 22 05 89 7E 00 89  4E 02 B1 0B FC F3 A4 06  U."..~..N.......
000060: 1F BD 00 7C C6 45 FE 0F  38 4E 24 7D 20 8B C1 99  ...|.E..8N$} ...
000070: E8 7E 01 83 EB 3A 66 A1  1C 7C 66 3B 07 8A 57 FC  .~...:f..|f;..W.
000080: 75 06 80 CA 02 88 56 02  80 C3 10 73 ED 33 C9 FE  u.....V....s.3..
000090: 06 D8 7D 8A 46 10 98 F7  66 16 03 46 1C 13 56 1E  ..}.F...f..F..V.
0000A0: 03 46 0E 13 D1 8B 76 11  60 89 46 FC 89 56 FE B8  .F....v.`.F..V..
0000B0: 20 00 F7 E6 8B 5E 0B 03  C3 48 F7 F3 01 46 FC 11   ....^...H...F..
0000C0: 4E FE 61 BF 00 07 E8 28  01 72 3E 38 2D 74 17 60  N.a....(.r>8-t.`
0000D0: B1 0B BE D8 7D F3 A6 61  74 3D 4E 74 09 83 C7 20  ....}..at=Nt...
0000E0: 3B FB 72 E7 EB DD FE 0E  D8 7D 7B A7 BE 7F 7D AC  ;.r......}{...}.
0000F0: 98 03 F0 AC 98 40 74 0C  48 74 13 B4 0E BB 07 00  .....@t.Ht......
000100: CD 10 EB EF BE 82 7D EB  E6 BE 80 7D EB E1 CD 16  ......}....}....
000110: 5E 1F 66 8F 04 CD 19 BE  81 7D 8B 7D 1A 8D 45 FE  ^.f......}.}..E.
000120: 8A 4E 0D F7 E1 03 46 FC  13 56 FE B1 04 E8 C2 00  .N....F..V......
000130: 72 D7 EA 00 02 70 00 52  50 06 53 6A 01 6A 10 91  r....p.RP.Sj.j..
000140: 8B 46 18 A2 26 05 96 92  33 D2 F7 F6 91 F7 F6 42  .F..&...3......B
000150: 87 CA F7 76 1A 8A F2 8A  E8 C0 CC 02 0A CC B8 01  ...v...........
000160: 02 80 7E 02 0E 75 04 B4  42 8B F4 8A 56 24 CD 13  ..~..u..B...V$..
000170: 61 61 72 0A 40 75 01 42  03 5E 0B 49 75 77 C3 03  aar.@u.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 6B  FF 0D 0A 44 69 73 6B 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 6B 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 6B 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 BB 00 07 60 66 6A  00 E9 3B FF 00 00 55 AA  .A...`fj..;...U.
```

Bochs for Windows - Display

A: B: CD   USER Copy Paste snapshot   Reset SUSPEND Power
                                              CONFIG

```
  CD-ROM Device Driver for IDE (Four Channels Supported)
  (C)Copyright Oak Technology Inc. 1993-1996
  Driver Version     : V340
  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:/S
Insert new diskette for drive B:
and press ENTER when ready...

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

Volume label (11 characters, ENTER for none)? _
```
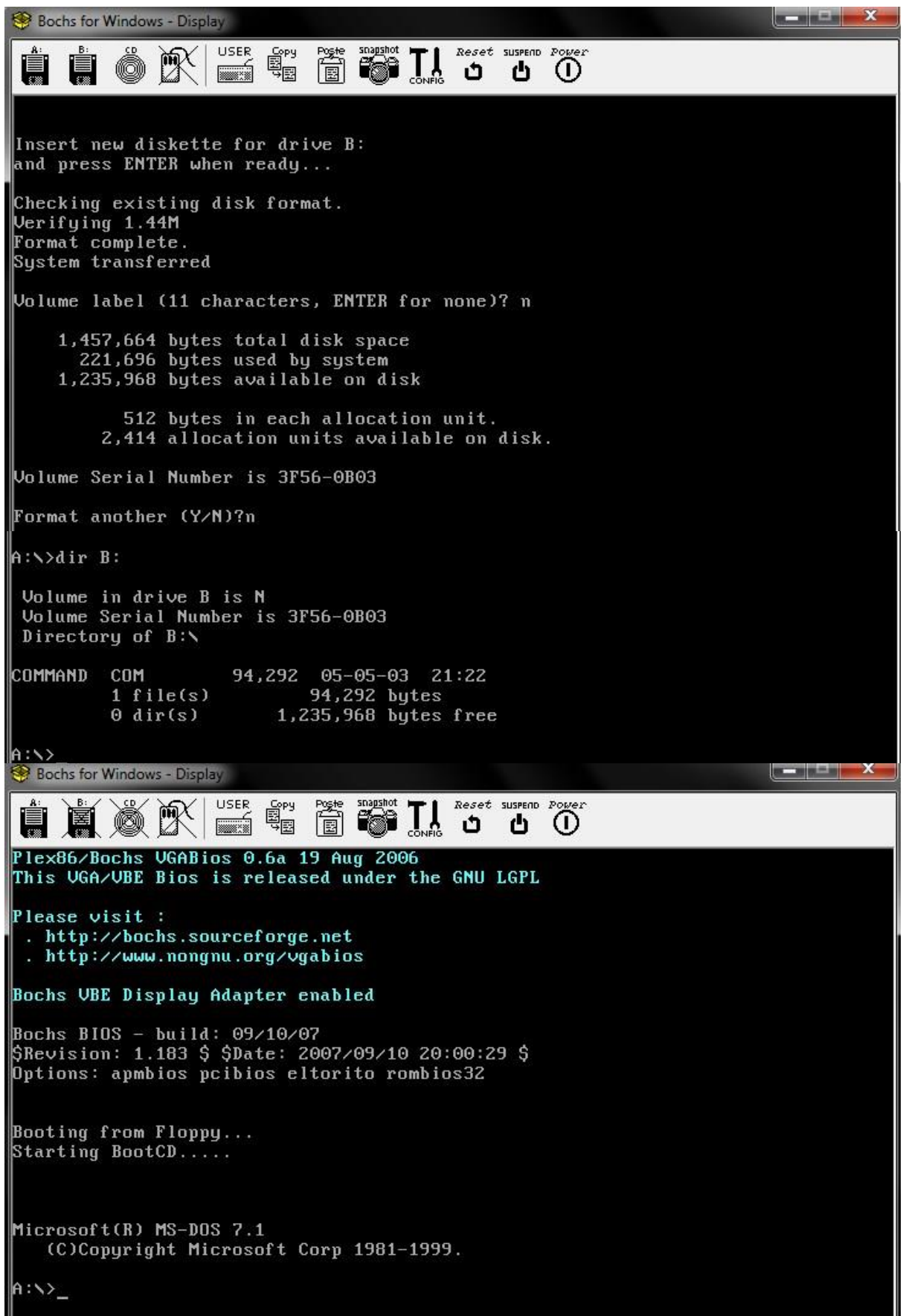
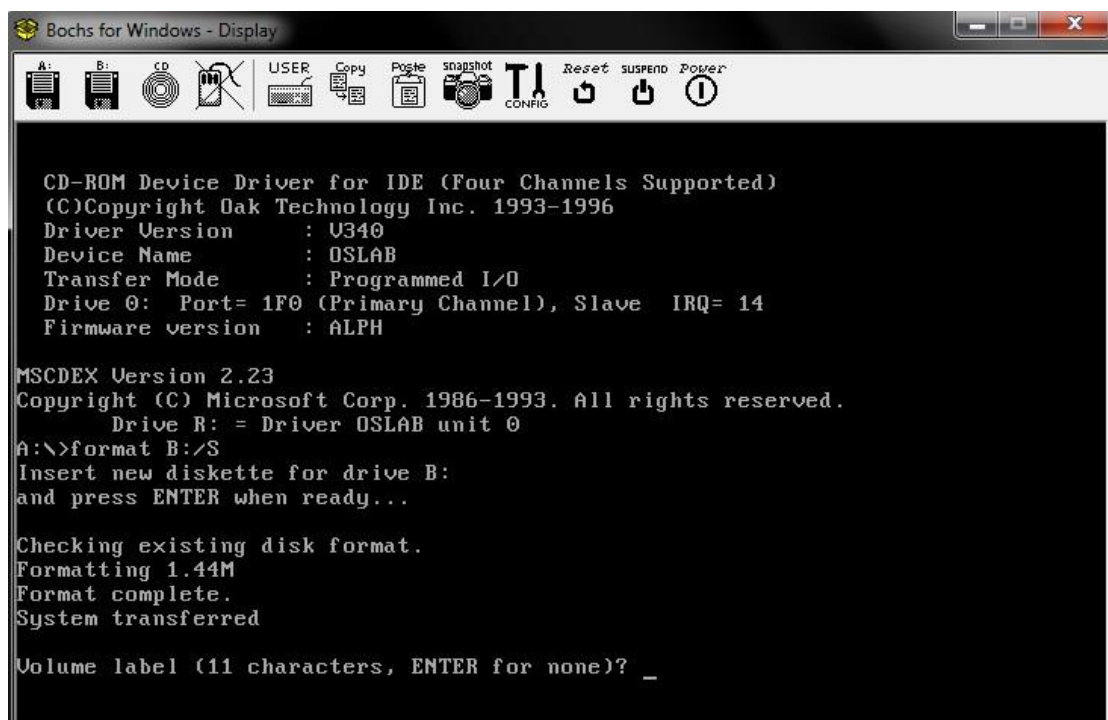CTRL + 3rd button enables mouse   A: B: HD:0-M CD:0-S NUM CAPS SCRL

Bochs for Windows - Display

```
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)? n

    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 3F56-0B03

Format another (Y/N)?n

A:\>dir B:

 Volume in drive B is N
 Volume Serial Number is 3F56-0B03
 Directory of B:\

COMMAND  COM         94,292  05-05-03  21:22
         1 file(s)          94,292 bytes
         0 dir(s)        1,235,968 bytes free

A:\>
```

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...
Starting BootCD.....




Microsoft(R) MS-DOS 7.1
   (C)Copyright Microsoft Corp 1981-1999.

A:\>_
```

2. Lakukan proses untuk mengubah file pada boot.asm dan kernel.asm sehingga muncul nama dan nimnya masing-masing dan paling bawah muncul tulisan universitas muhammadiyah surakarta!

- Membuat floppiya.img dengan bximage.exe

- Memasukkan floppya.img dari folder LAB2.

- Ubah tulisan menjadi nama dan nim pada notepad.asm.

- Setelah mengedit notepad, make fp.disk lagi, lalu make kernel, kemudian buka winImage dan masukkan file floppya.img dari folder LAB2, kemudian pilih kernel.bin dan save.

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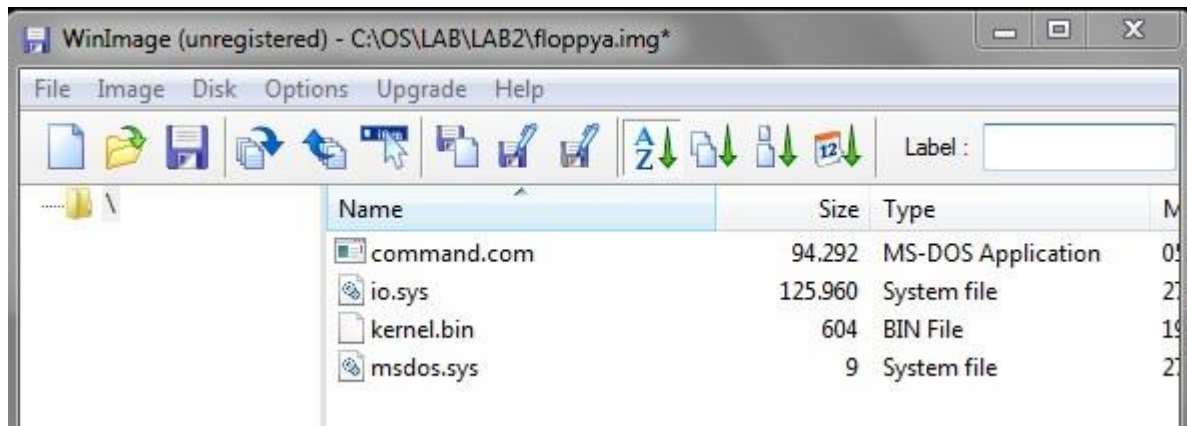

- Buka notepad kernel.asm untuk merubah tulisan dibawah menjadi "Universitas Muhammadiyah Surakarta"

```
C:\OS\LAB\LAB2>notepad kernel.asm
```
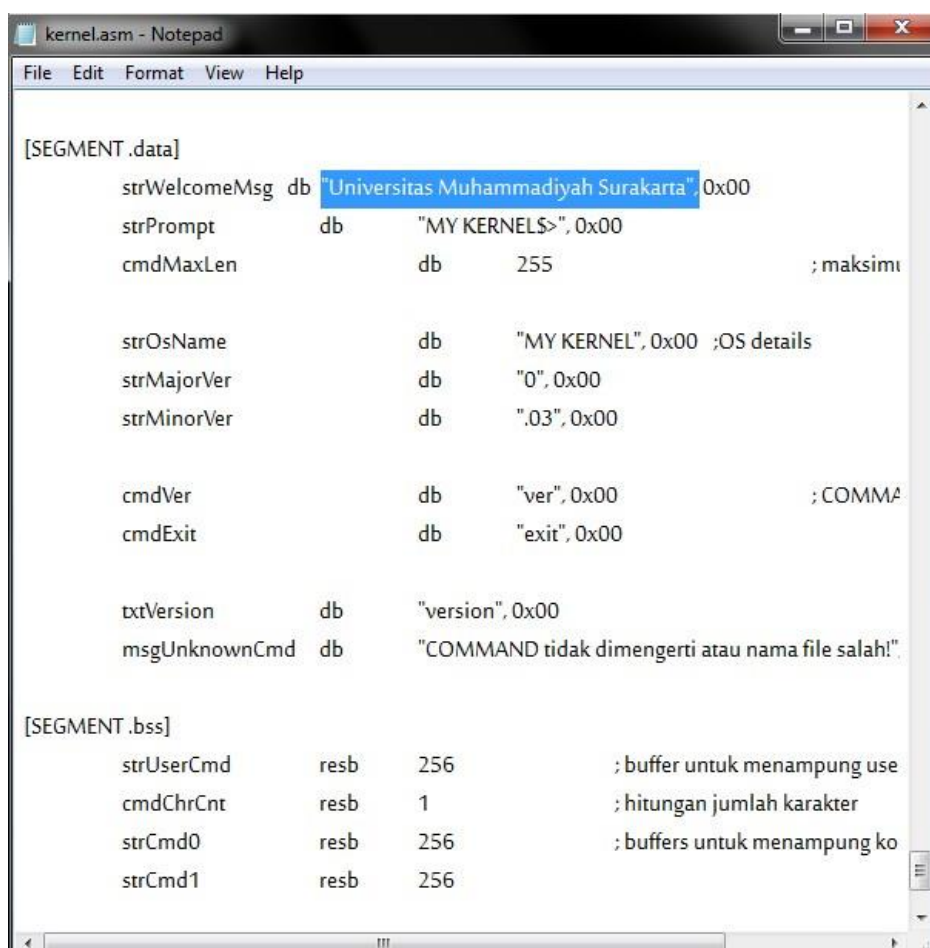
- Make kernel lagi, buka winImage lagi, dan masukkan floppya.img dan kernel.bin lagi, kemudian tekan s untuk melihat tulisan pada window bochs yang telah dirubah.

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

C:\OS\LAB\LAB2>s

C:\OS\LAB\LAB2>..\..\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 bochs.log
# In bx_win32_gui_c::exit(void)!
========================================================================
Bochs is exiting with the following message:
[WGUI ] POWER button turned off.
========================================================================
```
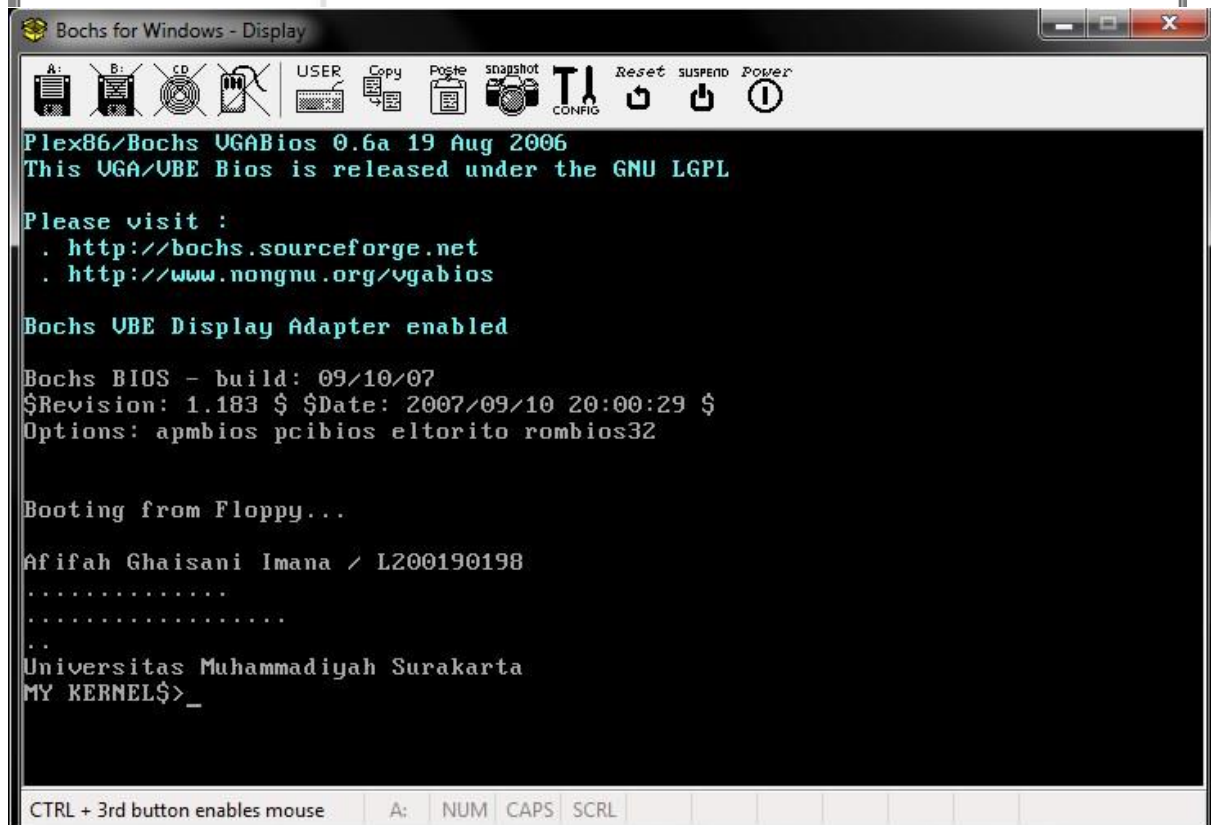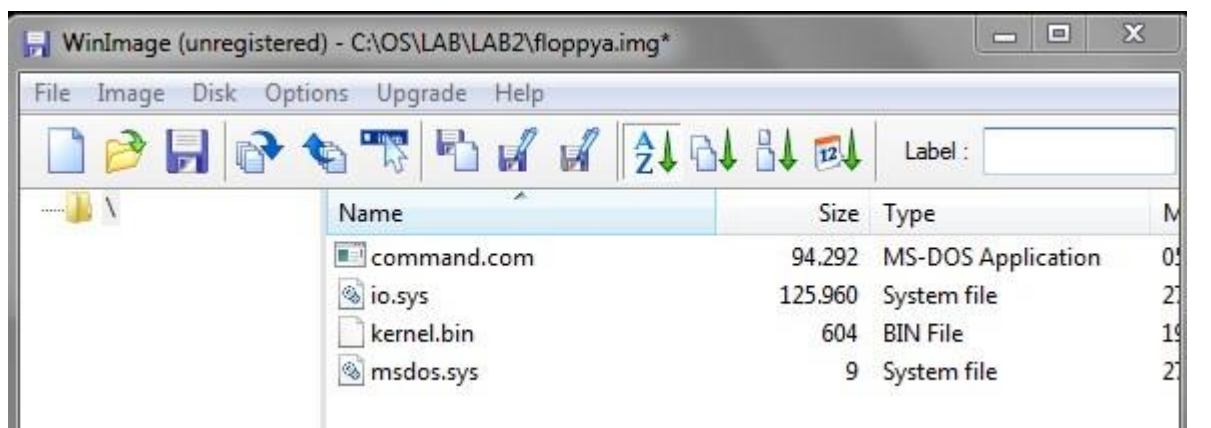
WinImage (unregistered) - C:\OS\LAB\LAB2\floppya.img*

File Image Disk Options Upgrade Help

Label :

Name	Size	Type	M
command.com	94.292	MS-DOS Application	0!
io.sys	125.960	System file	2!
kernel.bin	604	BIN File	1!
msdos.sys	9	System file	2!

Bochs for Windows - Display

A: B: CD USER Copy Paste snapshot CONFIG Reset SUSPEND Power

```
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...

Afifah Ghaisani Imana / L200190198
.............
.................
..
Universitas Muhammadiyah Surakarta
MY KERNEL$>_
```
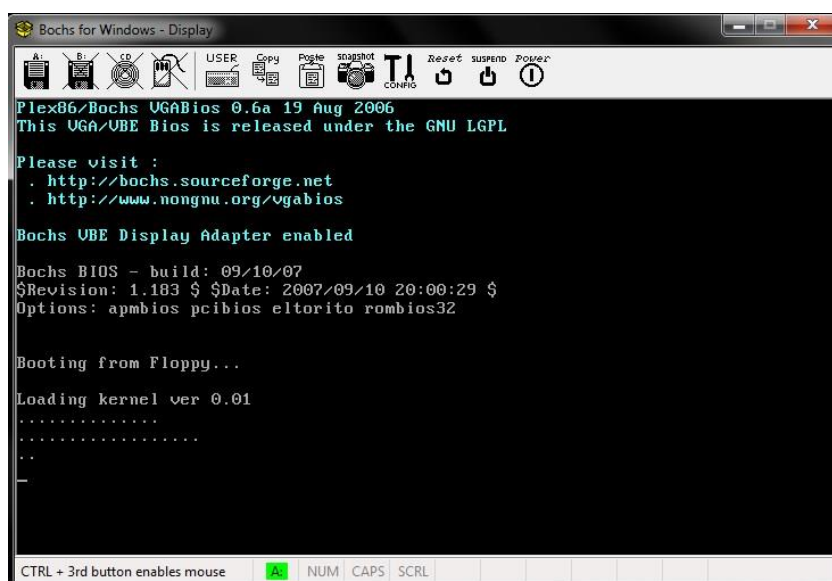
CTRL + 3rd button enables mouse   A: NUM CAPS SCRL

3. Program kernel.bin akan terjadi pada alamat '0100:0000'. Lakukanlah break-point pada alamat tersebut(Lakukan dari t=2945013 sampai t=2945020)

4. Dengan menggunakan cmd perintah apa yang digunakan untuk :

a. Membuat directory → md

b. Melihat isi pada directory → dir

c. Menghapus directory → del (file)

d. Melihat ip address komputer → ipconfig

e. Melihat calender → date

f. Melihat versi windows yang digunakan → ver

g. Menyediakan informasi bantuan untuk perintah-perintah windows → help

h. Menampilkan secara grafis struktur direktori dari sebuah drive → tree (:drive)

i. Meng copy sebuah file dari direktory kerja1 ke kerja 2 → copy (file.extensi) :kerja 2

j. Mengubah nama file → ren

```
C:\Users\Ghaisani>md baru

C:\Users\Ghaisani>dir
 Volume in drive C has no label.
 Volume Serial Number is 5046-14FD

 Directory of C:\Users\Ghaisani

19/11/2020  05:15    <DIR>          .
19/11/2020  05:15    <DIR>          ..
15/09/2020  10:43    <DIR>          .android
16/07/2020  20:55             1.745 .bash_history
24/02/2019  14:40    <DIR>          .eclipse
23/11/2019  11:16                73 .gitconfig
12/09/2019  10:53    <DIR>          .gnome2
12/09/2019  10:54             1.171 .gvrngrc
07/11/2019  19:16    <DIR>          .idlerc
24/02/2019  14:40    <DIR>          .jmc
09/03/2019  06:06    <DIR>          .LINE
12/04/2019  15:39    <DIR>          .nbi
09/03/2019  06:06    <DIR>          .QtWebEngineProcess
19/09/2019  00:47               218 .recently-used.xbel
05/11/2020  11:04    <DIR>          .VirtualBox
24/10/2020  11:27    <DIR>          .vscode
19/11/2020  05:15    <DIR>          baru
01/01/2019  07:15    <DIR>          Contacts
16/10/2020  21:50    <DIR>          Desktop
06/11/2020  08:40    <DIR>          Documents
19/11/2020  02:09    <DIR>          Downloads
01/01/2019  07:15    <DIR>          Favorites
09/05/2020  21:24    <DIR>          greenfoot
12/09/2019  10:53    <DIR>          GvR
30/09/2020  10:55               339 gvr_stderr.log
30/09/2020  10:55               450 gvr_stdout.log
03/04/2020  22:08    <DIR>          Links
24/10/2020  11:29    <DIR>          Music
05/01/2019  14:25    <DIR>          New folder
05/01/2019  15:57    <DIR>          New folder (2)
09/10/2020  06:18    <DIR>          Pictures
11/01/2019  10:36                 9 rstr2.ini
01/01/2019  07:16    <DIR>          Saved Games
01/01/2019  07:16    <DIR>          Searches
03/01/1601  21:26            73.216 uWAd.exe
06/08/2020  21:16    <DIR>          Videos
05/11/2020  10:46    <DIR>          VirtualBox VMs
               8 File(s)         77.221 bytes
              29 Dir(s)   1.369.931.776 bytes free

C:\Users\Ghaisani>del baru
C:\Users\Ghaisani\baru\*, Are you sure (Y/N)? y
```

```
C:\Users\Ghaisani>ipconfig

Windows IP Configuration


Wireless LAN adapter Wireless Network Connection 2:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Wireless Network Connection:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::a978:ff8c:463e:8fe9%14
   IPv4 Address. . . . . . . . . . . : 192.168.43.33
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.43.1

Ethernet adapter Local Area Connection:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Ethernet adapter Bluetooth Network Connection:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Ethernet adapter VirtualBox Host-Only Network:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::987d:76ae:8a70:f15a%25
   Autoconfiguration IPv4 Address. . : 169.254.241.90
   Subnet Mask . . . . . . . . . . . : 255.255.0.0
   Default Gateway . . . . . . . . . :

Tunnel adapter isatap.{AE2D8C2C-7A5A-4EF0-BEEE-3E595F430F03}:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Tunnel adapter isatap.{595AE025-C53B-4F70-80C1-61987F9767B2}:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Tunnel adapter isatap.{857A76DC-6A46-4FA7-ACDB-A72467C8A14E}:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

C:\Users\Ghaisani>date
The current date is: 19/11/2020
Enter the new date: (dd-mm-yy)
```

```
C:\Users\Ghaisani>ver

Microsoft Windows [Version 6.1.7601]

C:\Users\Ghaisani>help
For more information on a specific command, type HELP command-name
ASSOC           Displays or modifies file extension associations.
ATTRIB          Displays or changes file attributes.
BREAK           Sets or clears extended CTRL+C checking.
BCDEDIT         Sets properties in boot database to control boot loading.
CACLS           Displays or modifies access control lists (ACLs) of files.
CALL            Calls one batch program from another.
CD              Displays the name of or changes the current directory.
CHCP            Displays or sets the active code page number.
CHDIR           Displays the name of or changes the current directory.
CHKDSK          Checks a disk and displays a status report.
CHKNTFS         Displays or modifies the checking of disk at boot time.
CLS             Clears the screen.
CMD             Starts a new instance of the Windows command interpreter.
COLOR           Sets the default console foreground and background colors.
COMP            Compares the contents of two files or sets of files.
COMPACT         Displays or alters the compression of files on NTFS partitions.
CONVERT         Converts FAT volumes to NTFS.  You cannot convert the
                current drive.
COPY            Copies one or more files to another location.
DATE            Displays or sets the date.
DEL             Deletes one or more files.
DIR             Displays a list of files and subdirectories in a directory.
DISKCOMP        Compares the contents of two floppy disks.
DISKCOPY        Copies the contents of one floppy disk to another.
DISKPART        Displays or configures Disk Partition properties.
DOSKEY          Edits command lines, recalls Windows commands, and
                creates macros.
DRIVERQUERY     Displays current device driver status and properties.
ECHO            Displays messages, or turns command echoing on or off.
ENDLOCAL        Ends localization of environment changes in a batch file.
ERASE           Deletes one or more files.
EXIT            Quits the CMD.EXE program (command interpreter).
FC              Compares two files or sets of files, and displays the
                differences between them.
FIND            Searches for a text string in a file or files.
FINDSTR         Searches for strings in files.
FOR             Runs a specified command for each file in a set of files.
FORMAT          Formats a disk for use with Windows.
FSUTIL          Displays or configures the file system properties.
FTYPE           Displays or modifies file types used in file extension
                associations.
GOTO            Directs the Windows command interpreter to a labeled line in
                a batch program.
GPRESULT        Displays Group Policy information for machine or user.
GRAFTABL        Enables Windows to display an extended character set in
                graphics mode.
HELP            Provides Help information for Windows commands.
ICACLS          Display, modify, backup, or restore ACLs for files and
                directories.
IF              Performs conditional processing in batch programs.
LABEL           Creates, changes, or deletes the volume label of a disk.
```

```
C:\Users\Ghaisani>tree C:
Folder PATH listing
Volume serial number is 00000002 5046:14FD
C:\USERS\GHAISANI
├───.android
├───.eclipse
│   └───com.oracle.jmc_5.5.2_1102905936_win32_win32_x86
│       └───configuration
│           ├───org.eclipse.core.runtime
│           │   └───.manager
│           ├───org.eclipse.e4.ui.css.swt.theme
│           ├───org.eclipse.equinox.app
│           │   └───.manager
│           ├───org.eclipse.equinox.launcher
│           │   └───com.jrockit.mc.rcp.application_5.5.2.174165
│           └───org.eclipse.osgi
│               ├───.manager
│               ├───10
│               │   └───0
│               │       └───.cp
│               │           └───icons
│               ├───152
│               │   └───0
│               │       └───.cp
│               │           └───icons
│               │               └───full
│               │                   └───etool16
│               ├───157
│               │   └───0
│               │       └───.cp
│               │           └───icons
│               │               └───full
│               │                   └───ovr16
│               ├───183
│               │   └───data
│               ├───223
│               │   └───data
│               │       └───1159025394
│               ├───250
│               │   └───data
│               │       └───listener_1925729951
│               ├───307
│               │   └───0
│               │       └───.cp
│               │           ├───icons
│               │           │   └───full
│               │           └───org
│               │               └───eclipse
│               │                   └───jface
│               │                       └───action
│               │                           └───images
│               ├───325
│               │   └───0
│               │       └───.cp
│               └───331
│                   └───0
│                       └───.cp
```

```
C:\Users\Ghaisani>copy Music Documents
Music\1.java
Music\malware.txt
Music\matdisk.mp3
Music\oke.mp3
Music\oke111.mp3
Music\oke222.mp3
        6 file(s) copied.

C:\Users\Ghaisani>cd Music

C:\Users\Ghaisani\Music>ren oke.mp3 oke2.mp3

C:\Users\Ghaisani\Music>
```

5. Dengan menggunakan terminal pada linux apakah perintah untuk

a. Menampilkan kalimat "UNIVERSITAS MUHAMMADIYAH SURAKARTA" --> echo UNIVERSITAS MUHAMMADIYAH SURAKARTA

b. Mengetahui siapa yang sedang login pada saat itu --> w

c. Mengetahui ip address pada jaringan --> hostname -I atau ifconfig

d. Menampilkan nama komputer --> hostname

e. Menampilkan kalender agustus 2010 --> cal Agustus 2010

f. Menampilkan history perintah --> history

g. Manmpilkan valender tahun 2017 --> cal 2017

h. Menampilkan partisi hardisk --> sudo su <enter> fdisk -l

i. Menampilkan hasil penjumlah 20 --> echo $((15+5))

j. Manampilkan isi direktory dengan lengkap --> ls /etc/

```
user@PC:~$ echo UNIVERSITAS MUHAMMADIYAH SURAKARTA
UNIVERSITAS MUHAMMADIYAH SURAKARTA
user@PC:~$ w
 13:57:06 up 29 min,  3 users,  load average: 1,40, 1,29, 1,10
USER     TTY      FROM            LOGIN@   IDLE   JCPU   PCPU WHAT
user     tty1     :0              13:28   29:36   1:50   0.06s /bin/sh /usr/bin/startkd
user     pts/0    :0              13:28   28:32   0.00s  3.92s kded5 [kdeinit5]
user     pts/1    :0              13:55    0.00s  0.05s  0.00s w
user@PC:~$ hostname -I
192.168.43.33
user@PC:~$ hostname
PC
user@PC:~$ cal Agustus 2010
    Agustus 2010
Mi Se Se Ra Ka Ju Sa
 1  2  3  4  5  6  7
 8  9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

user@PC:~$ history
    1  sudo su
    2  startx
    3  sudo libreoffice
    4  firefox
    5  libreoffice
    6  home
    7  pwd
    8  ls
    9  cd
   10  cp/4.py
   11  pwd
   12  mkdir FOSTI
   13  ls
   14  cs home/FOSTI
   15  cd home/FOSTI
   16  pwd
   17  mkdir Latihan
   18  ls
   19  cd Latihan
   20  ls
   21  mkdir aku dia mereka
   22  ls
   23  cd aku
```

```
user@PC:~$ cal 2017
                             2017
        Januari                Februari               Maret
Mi Se Se Ra Ka Ju Sa   Mi Se Se Ra Ka Ju Sa   Mi Se Se Ra Ka Ju Sa
 1  2  3  4  5  6  7             1  2  3  4             1  2  3  4
 8  9 10 11 12 13 14    5  6  7  8  9 10 11    5  6  7  8  9 10 11
15 16 17 18 19 20 21   12 13 14 15 16 17 18   12 13 14 15 16 17 18
22 23 24 25 26 27 28   19 20 21 22 23 24 25   19 20 21 22 23 24 25
29 30 31               26 27 28               26 27 28 29 30 31

        April                   Mei                   Juni
Mi Se Se Ra Ka Ju Sa   Mi Se Se Ra Ka Ju Sa   Mi Se Se Ra Ka Ju Sa
                 1       1  2  3  4  5  6                   1  2  3
 2  3  4  5  6  7  8    7  8  9 10 11 12 13    4  5  6  7  8  9 10
 9 10 11 12 13 14 15   14 15 16 17 18 19 20   11 12 13 14 15 16 17
16 17 18 19 20 21 22   21 22 23 24 25 26 27   18 19 20 21 22 23 24
23 24 25 26 27 28 29   28 29 30 31            25 26 27 28 29 30
30

        Juli                  Agustus               September
Mi Se Se Ra Ka Ju Sa   Mi Se Se Ra Ka Ju Sa   Mi Se Se Ra Ka Ju Sa
                 1       1  2  3  4  5                      1  2
 2  3  4  5  6  7  8    6  7  8  9 10 11 12    3  4  5  6  7  8  9
 9 10 11 12 13 14 15   13 14 15 16 17 18 19   10 11 12 13 14 15 16
16 17 18 19 20 21 22   20 21 22 23 24 25 26   17 18 19 20 21 22 23
23 24 25 26 27 28 29   27 28 29 30 31         24 25 26 27 28 29 30
30 31

        Oktober               November               Desember
Mi Se Se Ra Ka Ju Sa   Mi Se Se Ra Ka Ju Sa   Mi Se Se Ra Ka Ju Sa
 1  2  3  4  5  6  7             1  2  3  4                   1  2
 8  9 10 11 12 13 14    5  6  7  8  9 10 11    3  4  5  6  7  8  9
15 16 17 18 19 20 21   12 13 14 15 16 17 18   10 11 12 13 14 15 16
22 23 24 25 26 27 28   19 20 21 22 23 24 25   17 18 19 20 21 22 23
29 30 31               26 27 28 29 30         24 25 26 27 28 29 30
                                              31
```

Device	Boot	Start	End	Sectors	Size	Id	Type
/dev/sda1	*	2048	206847	204800	100M	7	HPFS/NTFS/exFAT
/dev/sda2		206848	122896383	122689536	58,5G	7	HPFS/NTFS/exFAT
/dev/sda3		122897311	1250258624	1127361314	537,6G	f	W95 Ext'd (LBA)
/dev/sda5		122897313	334264454	211367142	100,8G	7	HPFS/NTFS/exFAT
/dev/sda6		334264518	546900794	212636277	101,4G	7	HPFS/NTFS/exFAT
/dev/sda7		546900858	757271969	210371112	100,3G	7	HPFS/NTFS/exFAT
/dev/sda8		757272033	904901879	147629847	70,4G	7	HPFS/NTFS/exFAT
/dev/sda9		966341943	1112099624	145757682	69,5G	7	HPFS/NTFS/exFAT
/dev/sda10		1112099688	1250258624	138158937	65,9G	7	HPFS/NTFS/exFAT
/dev/sda11		904902656	943964159	39061504	18,6G	83	Linux
/dev/sda12		943966208	947869695	3903488	1,9G	82	Linux swap / Solaris
/dev/sda13		947871744	966340607	18468864	8,8G	83	Linux

```
Partition 3 does not start on physical sector boundary.
Partition 5 does not start on physical sector boundary.
Partition 6 does not start on physical sector boundary.
Partition 7 does not start on physical sector boundary.
Partition 8 does not start on physical sector boundary.
Partition 9 does not start on physical sector boundary.
Partition table entries are not in disk order.
```

```
user@PC:~$ echo $((15+5))
20
user@PC:~$ ls /etc/
acpi                      ImageMagick-6           profile
adduser.conf              init                    profile.d
alternatives             init.d                  protocols
anacrontab               initramfs-tools         pulse
apache2                  inputrc                 python
apm                      iproute2                python2.7
apparmor                 issue                   python3
apparmor.d               issue.net               python3.6
apport                   java-11-openjdk         rarfiles.lst
appstream.conf           kde4rc                  rc0.d
apt                      kernel                  rc1.d
avahi                    kernel-img.conf         rc2.d
bash.bashrc              kerneloops.conf         rc3.d
bash_completion          ksysguarddrc            rc4.d
bash_completion.d        kubuntu-default-settings rc5.d
bindresvport.blacklist   ldap                    rc6.d
binfmt.d                 ld.so.cache             rcS.d
bluetooth                ld.so.conf              resolvconf
ca-certificates          ld.so.conf.d            resolv.conf
ca-certificates.conf     legal                   rmt
calendar                 libao.conf              rpc
catdocrc                 libaudit.conf           rsyslog.conf
chatscripts              libblockdev             rsyslog.d
clamav                   libnl-3                 sane.d
console-setup            libpaper.d              sddm
cracklib                 libreoffice             sddm.conf
cron.d                   lighttpd                securetty
cron.daily               locale.alias            security
cron.hourly              locale.gen              selinux
cron.monthly             localtime               sensors3.conf
crontab                  logcheck                sensors.d
cron.weekly              login.defs              services
cryptsetup-initramfs     logrotate.conf          sgml
cups                     logrotate.d             shadow
cupshelpers              lsb-release             shadow-
dbus-1                   ltrace.conf             shells
debconf.conf             machine-id              signond.conf
debian_version           magic                   signon-ui
default                  magic.mime              skel
deluser.conf             mailcap                 ssh
depmod.d                 mailcap.order           ssl
dhcp                     manpath.config          subgid
```
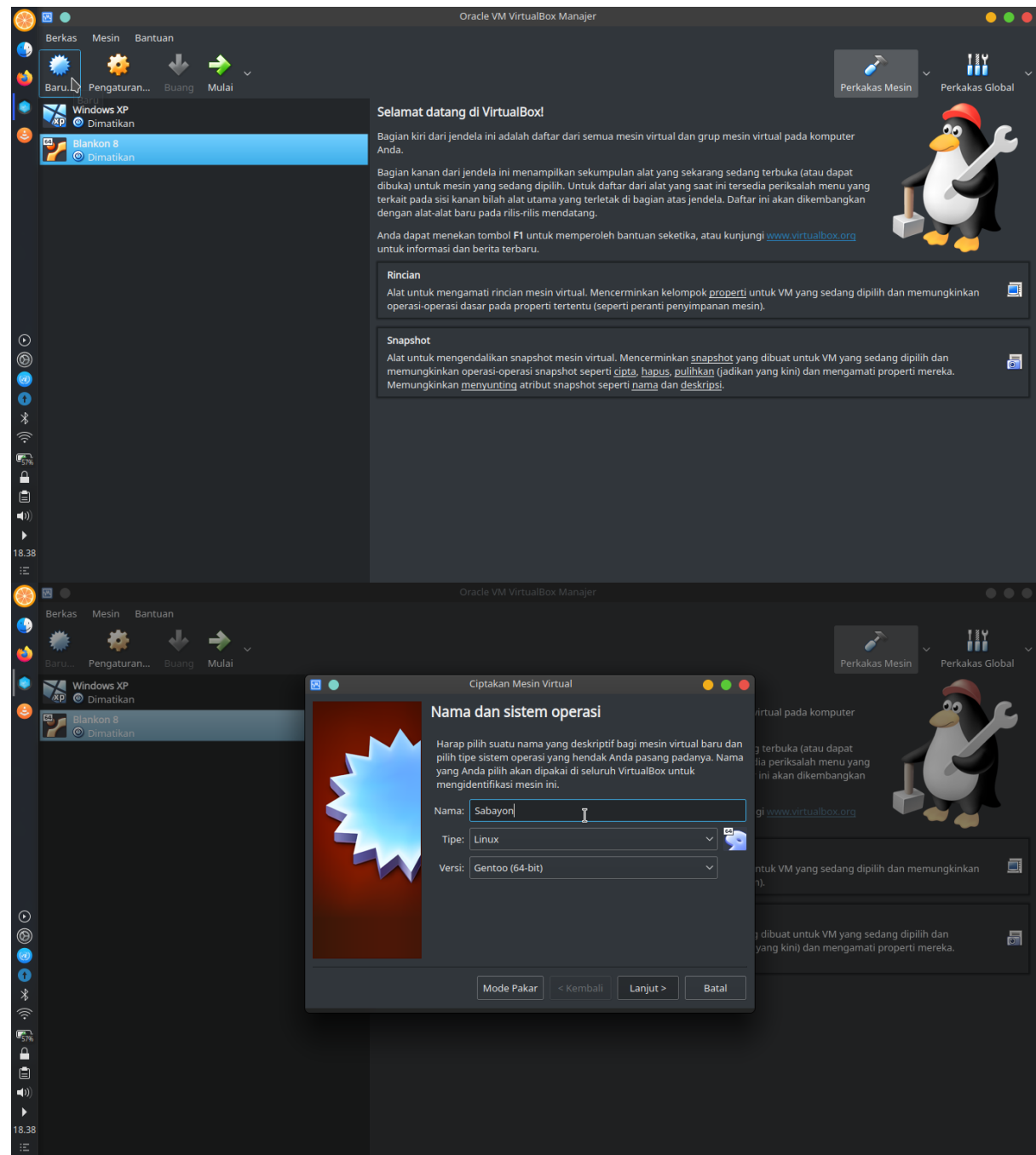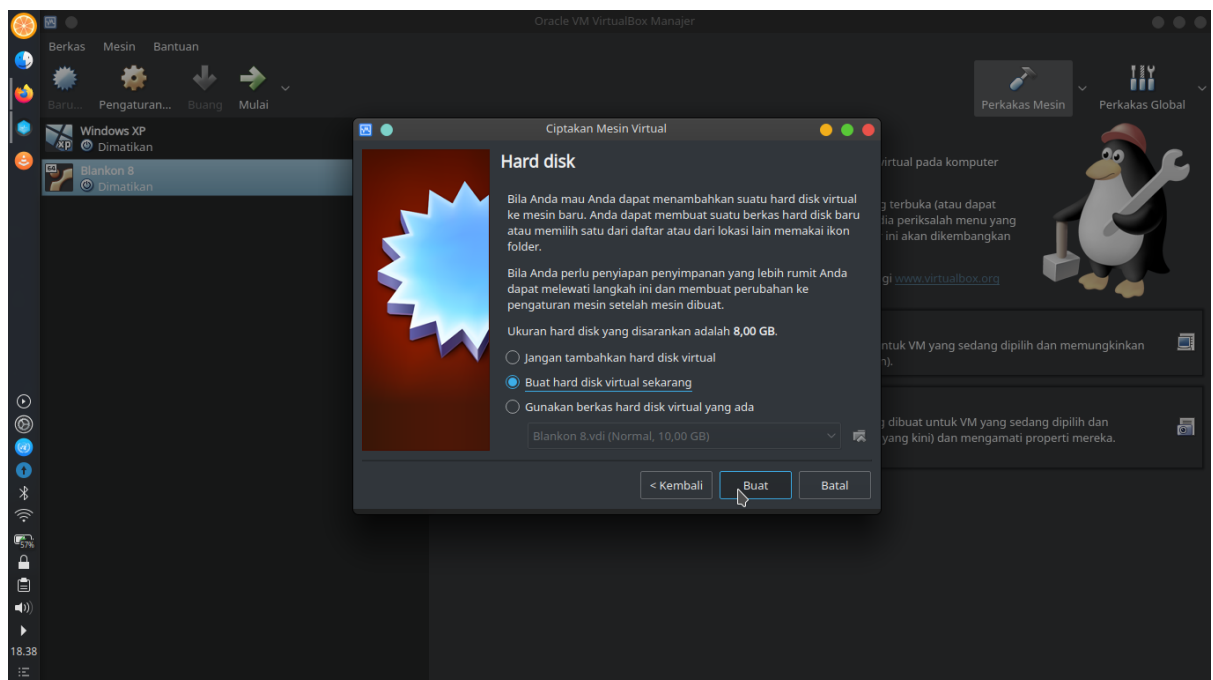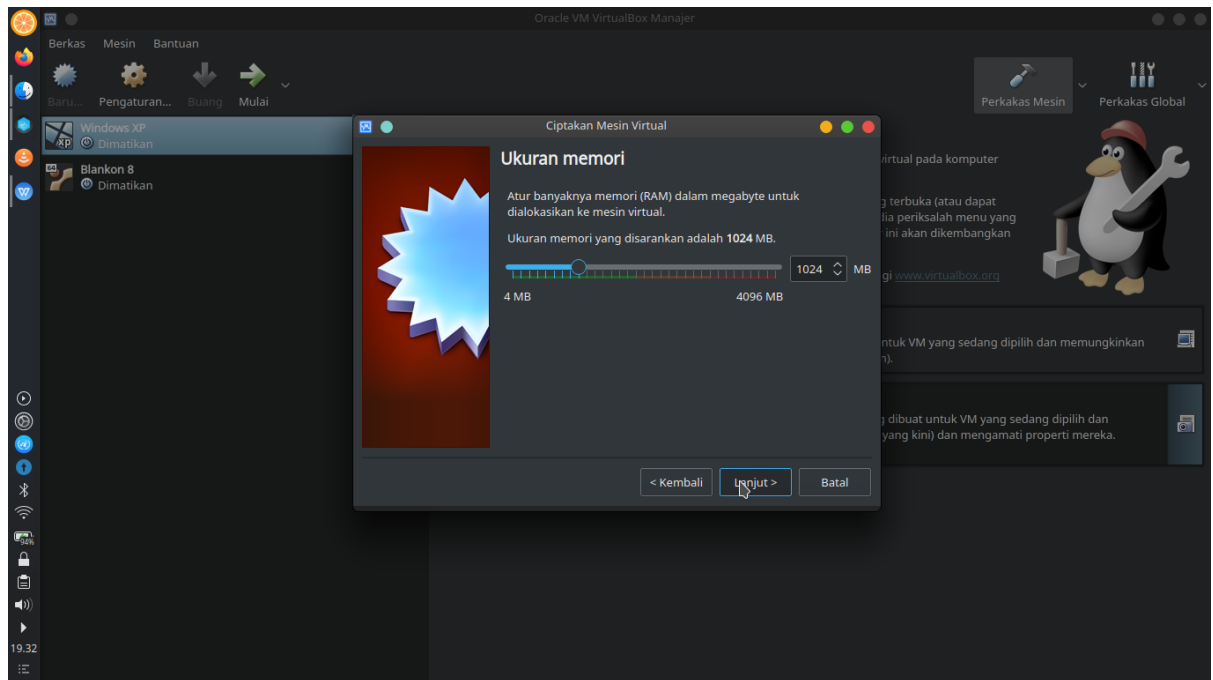
6. Instalasi B.) Sabayon Linux (nim genap : L200190198)
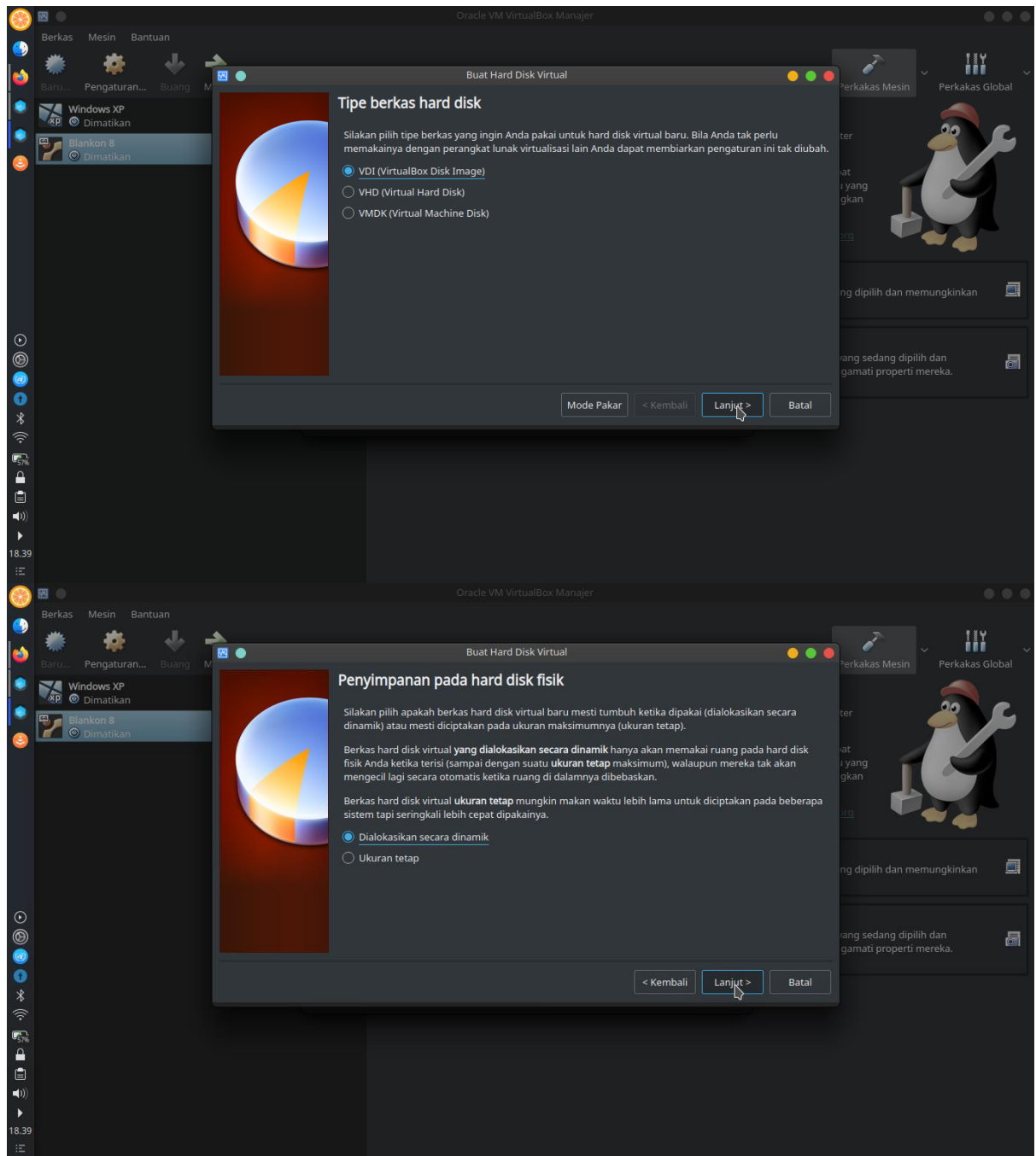
- Buka Virtual Box lalu klik Baru
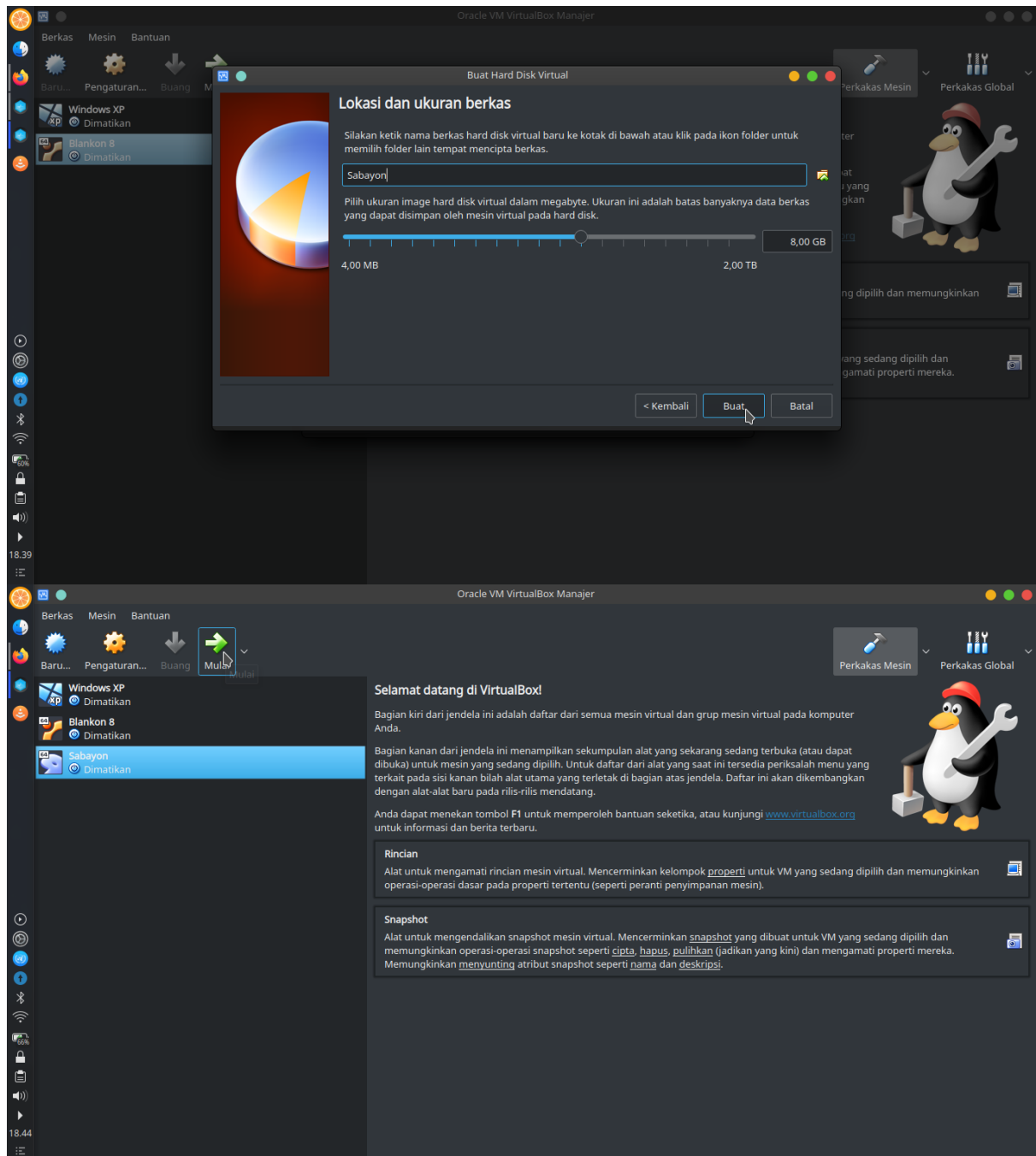
- Beri nama mesin, Lanjut

- Tentukan ukuran memori, Lanjut
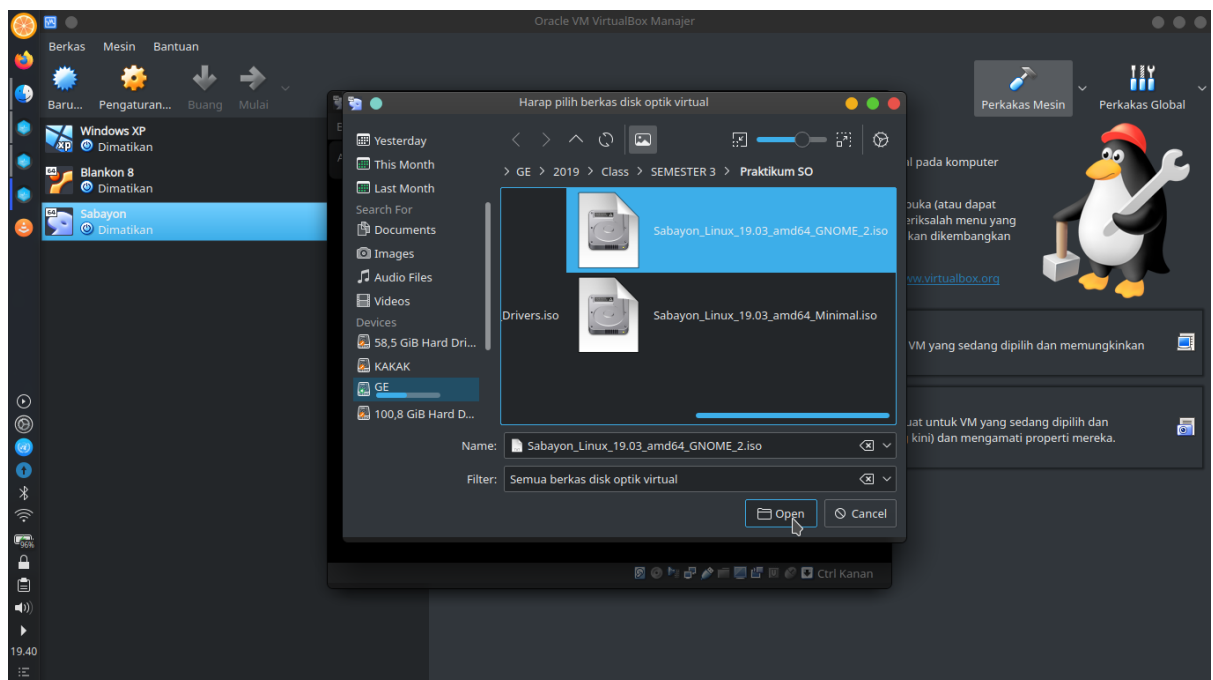
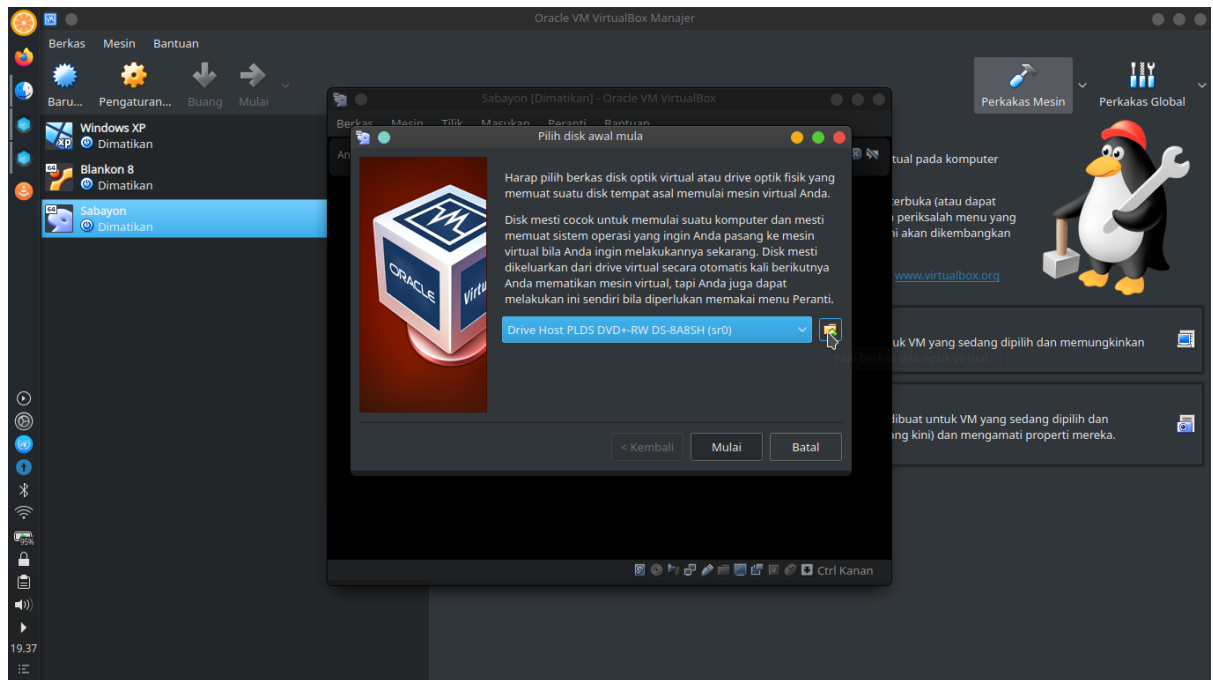- Pilih Buat hardisk virtual sekarang, Lanjut

- Pilih tipe berkas VDI, Lanjut

- Penyimpanan pada hard disk fisik pilih Dialokasikan secara dinamik, Lanjut

- Beri nama folder dan tentukan lokasi serta ukuran berkas, Buat

- Klik Mulai

- Klik icon folder

- Pilih file iso Linux Sabayon yang sudah didownload, Open, Mulai

- Mulai instalasi