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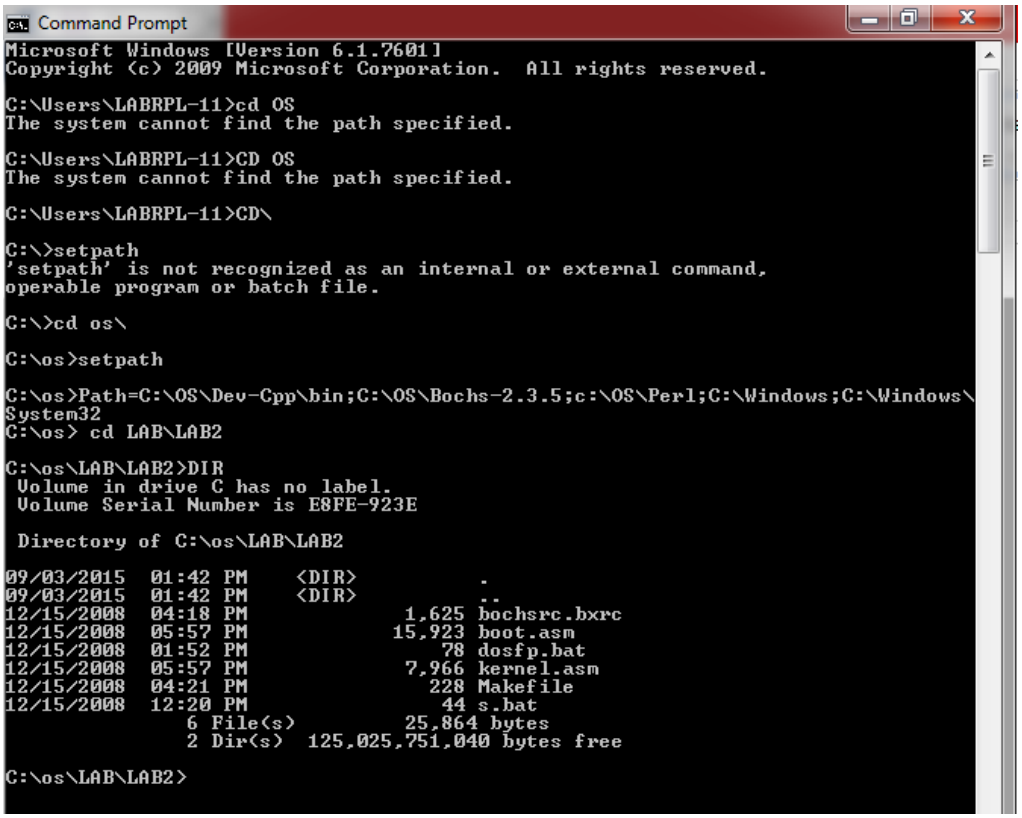
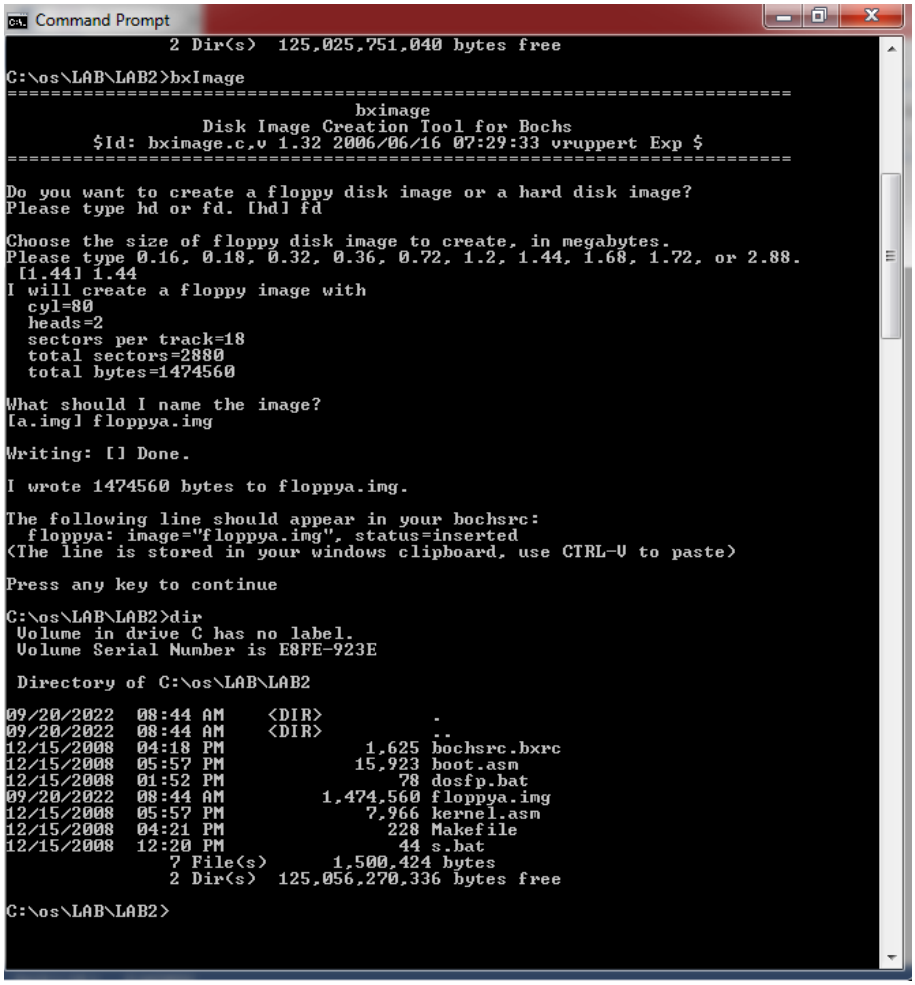
NIM : L200210220
Kelas : E

MODUL 2

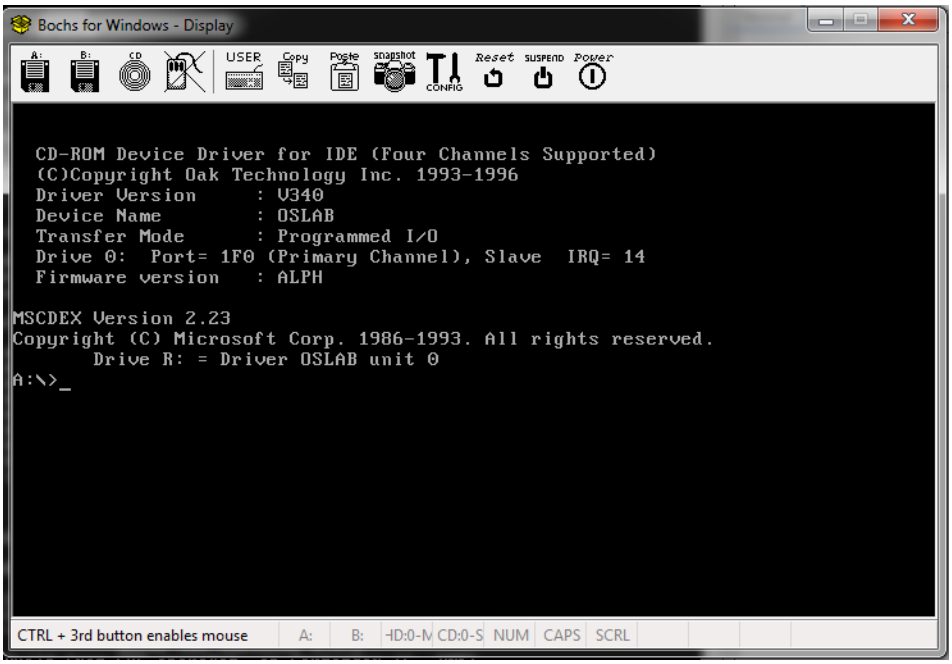
1.



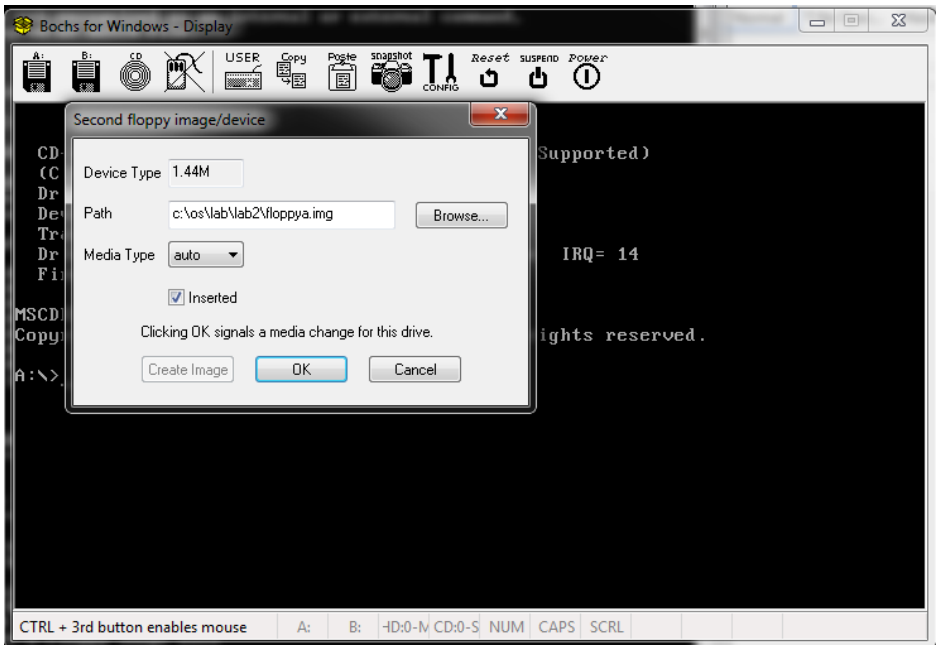
2.


Command Prompt
2 Dir(s) 125,025,751,040 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=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 has no label.
Volume Serial Number is E8FE-923E
Directory of C:\os\LAB\LAB2
09/20/2022 08:44 AM <DIR> .
09/20/2022 08:44 AM <DIR> ..
12/15/2008 04:18 PM 1,625 bochsrc.bxrc
12/15/2008 05:57 PM 15,923 boot.asm
12/15/2008 01:52 PM 78 dosfp.bat
09/20/2022 08:44 AM 1,474,560 floppya.img
12/15/2008 05:57 PM 7,966 kernel.asm
12/15/2008 04:21 PM 228 Makefile
12/15/2008 12:20 PM 44 s.bat
7 File(s) 1,500,424 bytes
2 Dir(s) 125,056,270,336 bytes free
C:\os\LAB\LAB2>

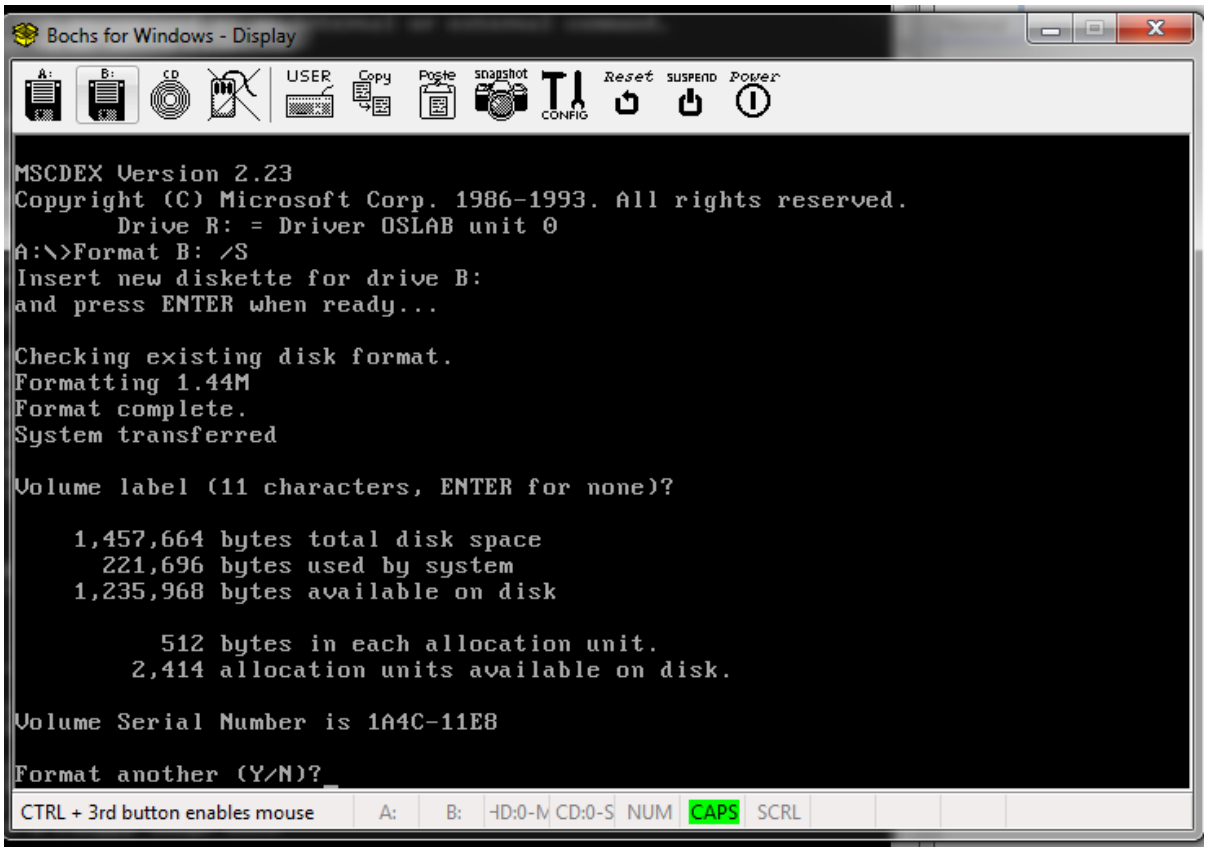
3.


Bochs for Windows - Display
A:
B:
CD
USER
Copy
Paste
snapshot
CONFIG
Reset
SUSPEND
Power
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:\>_
CTRL + 3rd button enables mouse
A:
B:
-ID:0-M
CD:0-S
NUM
CAPS
SCRL

4.

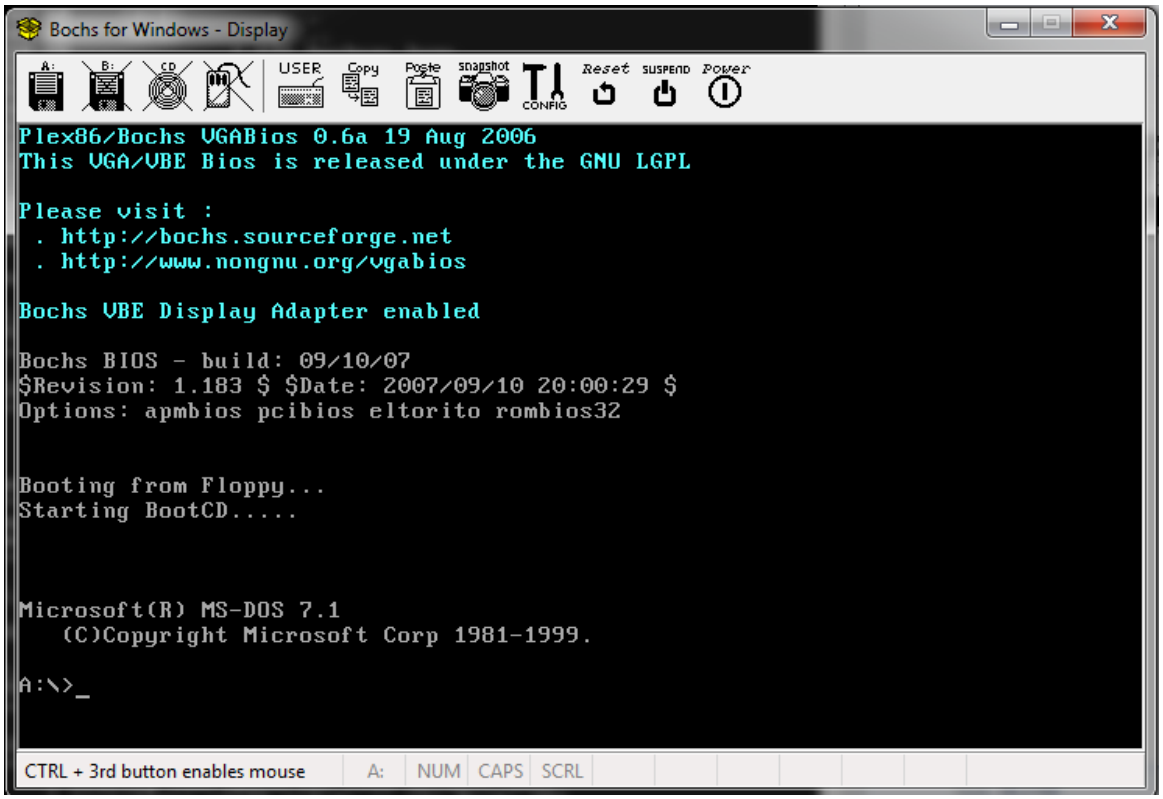

Bochs for Windows - Display
USER
Copy
Paste
snapshot
CONFIG
Reset
SUSPEND
Power
Second floppy image/device
Device Type 1.44M
Path c:\os\lab\lab2\floppya.img
Browse...
Media Type auto
Inserted
Clicking OK signals a media change for this drive.
Create Image
OK
Cancel
Supported)
IRQ= 14
ights reserved.
A:\>
CTRL + 3rd button enables mouse
A:
B:
HD:0-M
CD:0-S
NUM
CAPS
SCRL

5.


Bochs for Windows - Display
USER
Copy
Paste
snapshot
CONFIG
Reset
SUSPEND
Power
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)?
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 1A4C-11E8
Format another (Y/N)?
CTRL + 3rd button enables mouse
A:
B:
HD:0-M
CD:0-S
NUM
CAPS
SCRL

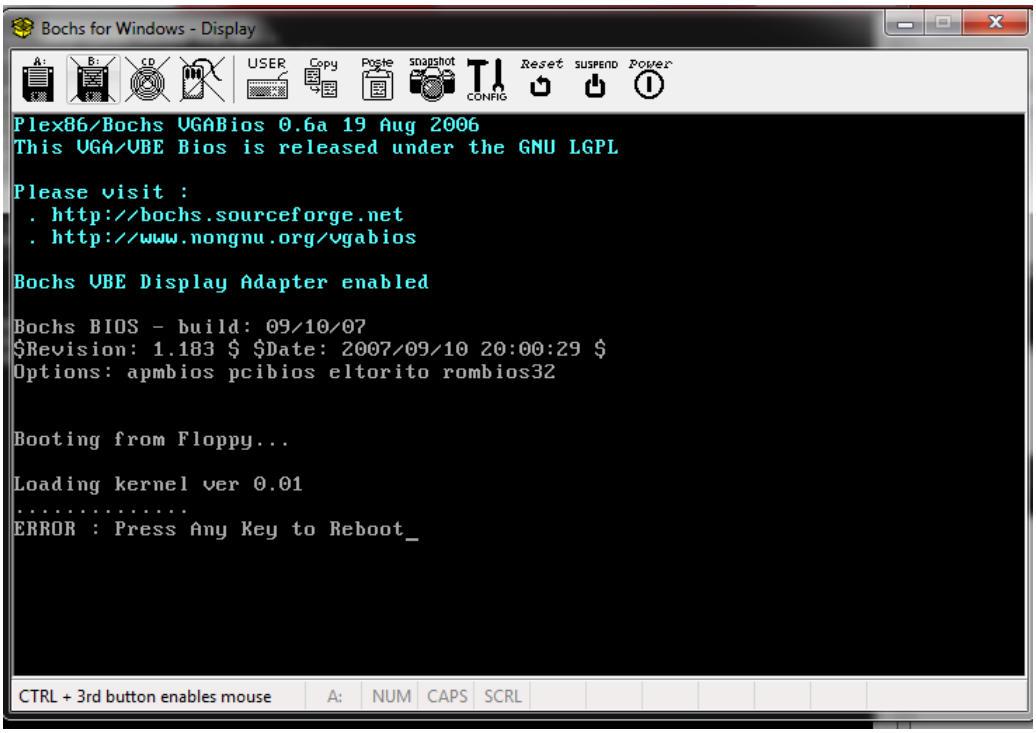
```
C:\os\LAB\LAB2>cd "..\..\Bochs-2.3.5\dos"

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\lab2"
```

6.



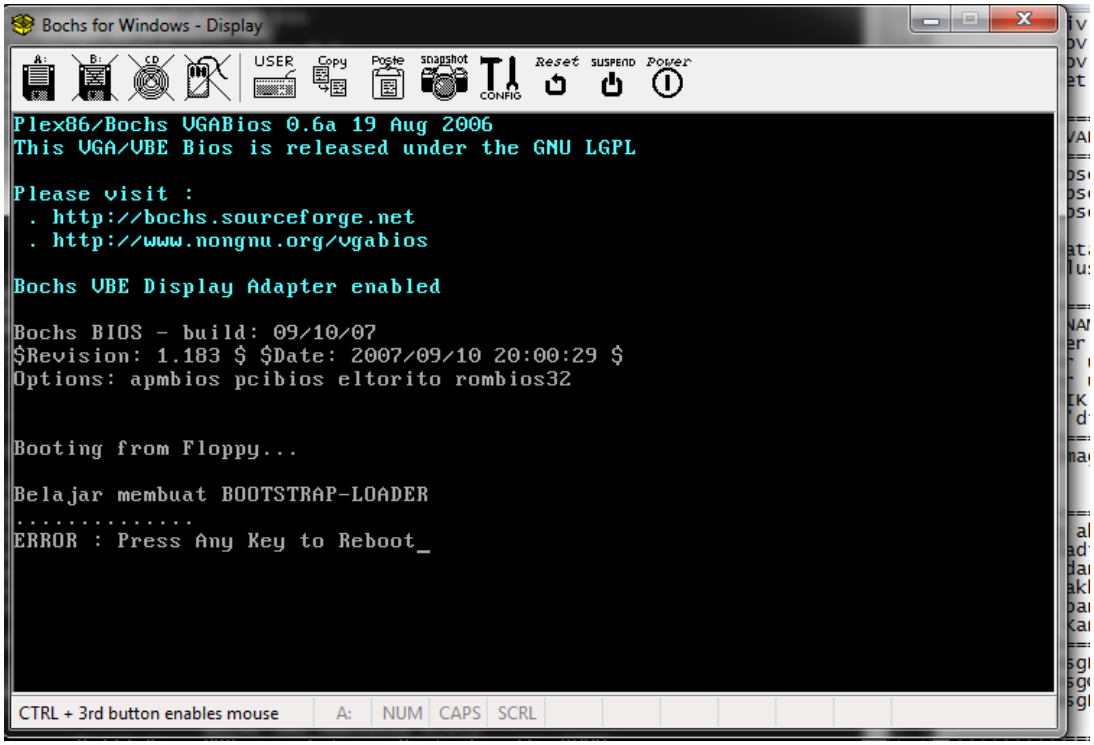
7.

8.



9.

```
;-----------------------------------------------
          ImageName   db "KERNEL  BIN"


;=============================================================================
 Teks yang akan ditampilkan saat mulai proses
 BOOT : Loading kernel ver 0.01
 Di awali dan diakhiri dengan tanda :
 -- 0x0D  akhir baris
 -- 0x0A  baris baru
 -- 0x00  Karakter 'NULL' pembatas dengan data di bawahnya
;=============================================================================
          msgLoading  db 0x0D, 0x0A, "Loading kernel ver 0.01 ", 0x0D, 0x0A, 0x00
          msgCRLF     db 0x0D, 0x0A, 0x00
          msgProgress db ".", 0x00

;=============================================================================
          ImageName   db "KERNEL  BIN"


;=============================================================================
; Teks yang akan ditampilkan saat mulai proses
; BOOT : Loading kernel ver 0.01
; Di awali dan diakhiri dengan tanda :
; -- 0x0D  akhir baris
; -- 0x0A  baris baru
; -- 0x00  Karakter 'NULL' pembatas dengan data di bawahnya
;=============================================================================
          msgLoading  db 0x0D, 0x0A, "Belajar membuat BOOTSTRAP-LOADER", 0x0D, 0x0A, 0x00
          msgCRLF     db 0x0D, 0x0A, 0x00
          msgProgress db ".", 0x00

;=============================================================================
; Teks yang di tampilkan saat terjadi kesalahan BOOT
;=============================================================================
          msgFailure  db 0x0D, 0x0A, "ERROR : Press Any Key to Reboot", 0x00

;=============================================
;(4) BLOK BOOT SIGNATURE
;=============================================

          TIMES 510-($-$$) DB 0
          DW 0xAA55
```

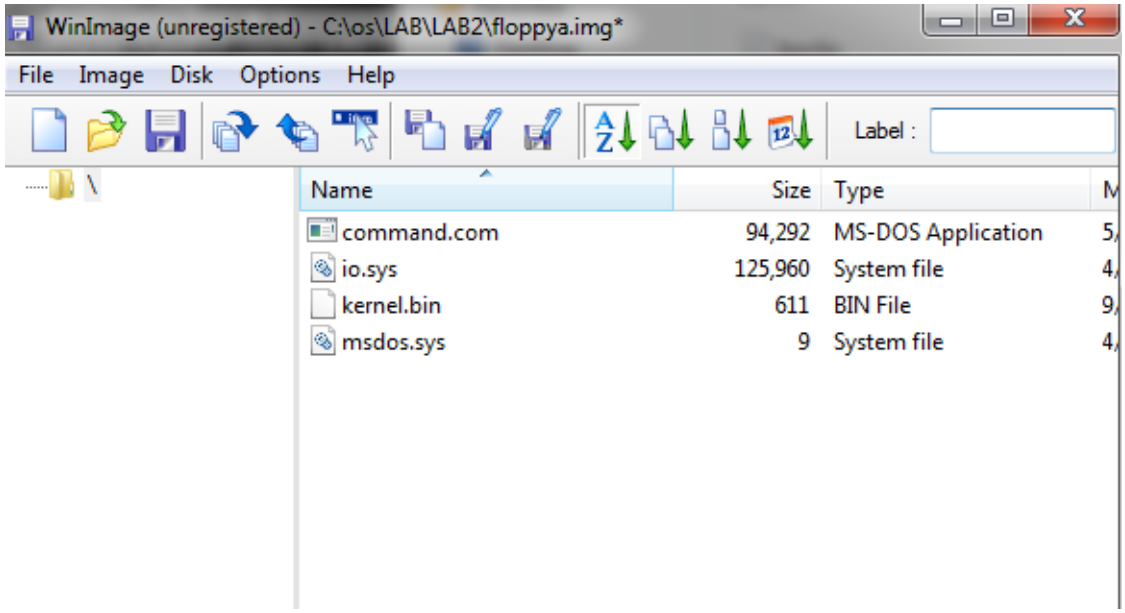


10.

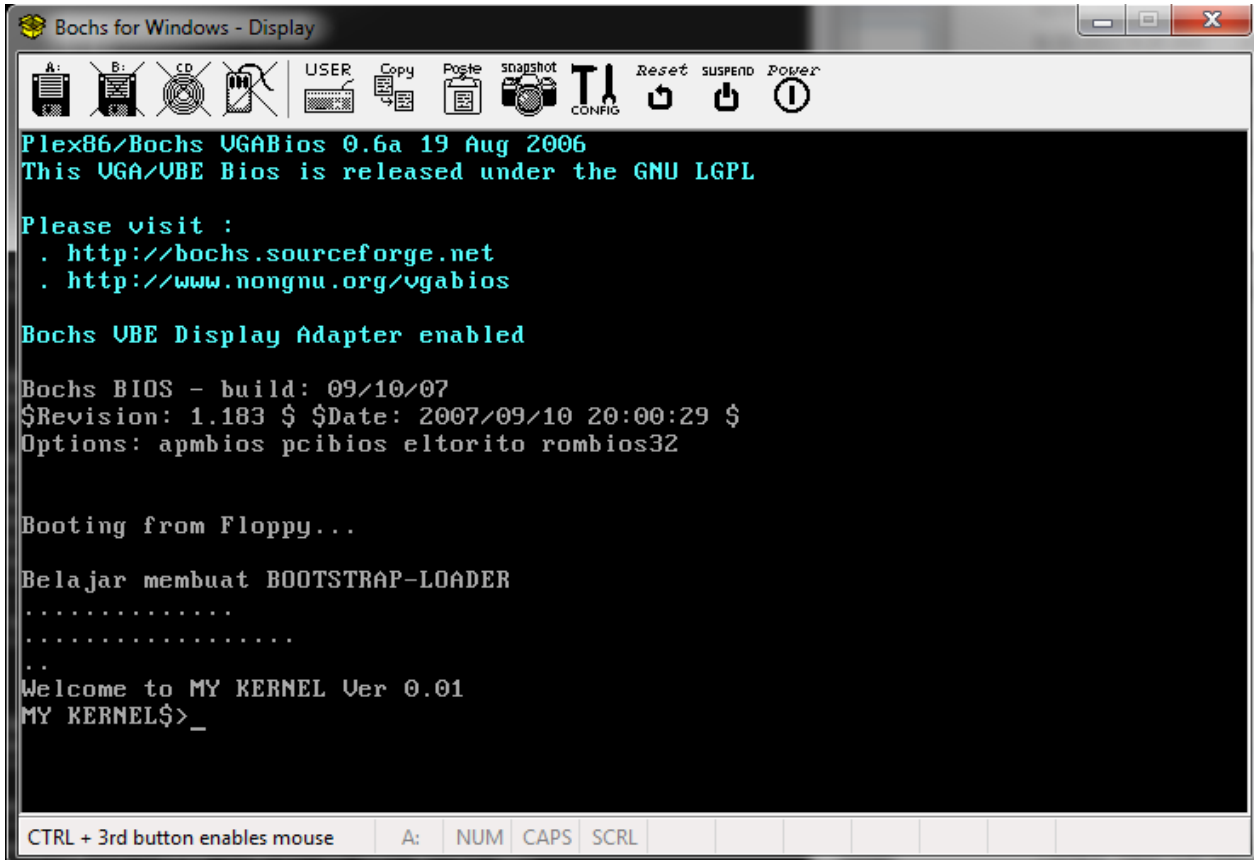
```
C:\os\LAB\LAB2>Make fp.disk
nasm boot.asm -o boot.bin -f bin
dd if=boot.bin of=floppya.img
rawwrite dd for windows version 0.5.
Written by John Newbigin <jn@it.swin.edu.au>
This program is covered by the GPL.  See copying.txt for details
1+0 records in
1+0 records out

C:\os\LAB\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.
========================================================================

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 E8FE-923E

 Directory of C:\os\LAB\LAB2

09/20/2022  09:31 AM    <DIR>          .
09/20/2022  09:31 AM    <DIR>          ..
09/20/2022  09:30 AM            10,207 bochs.log
12/15/2008  04:18 PM             1,625 bochsrc.bxrc
09/20/2022  09:28 AM            15,931 boot.asm
09/20/2022  09:29 AM               512 boot.bin
12/15/2008  01:52 PM                78 dosfp.bat
09/20/2022  09:29 AM         1,474,560 floppya.img
12/15/2008  05:57 PM             7,966 kernel.asm
09/20/2022  09:31 AM               611 kernel.bin
12/15/2008  04:21 PM               228 Makefile
12/15/2008  12:20 PM                44 s.bat
              10 File(s)      1,511,762 bytes
               2 Dir(s)  125,041,700,864 bytes free
```

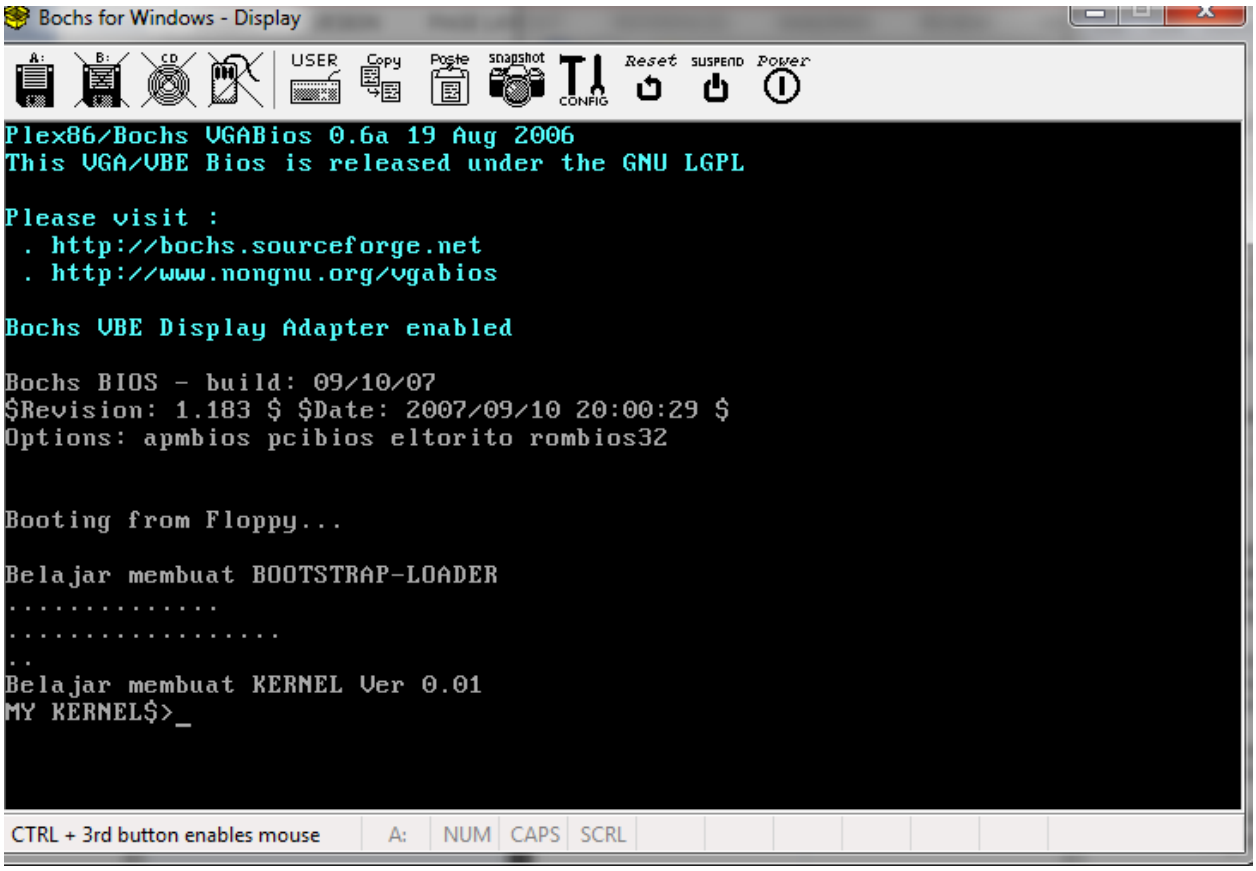
11.


WinImage (unregistered) - C:\os\LAB\LAB2\floppya.img*
File Image Disk Options Help
Label :
\
Name Size Type
command.com 94,292 MS-DOS Application
io.sys 125,960 System file
kernel.bin 611 BIN File
msdos.sys 9 System file

12.

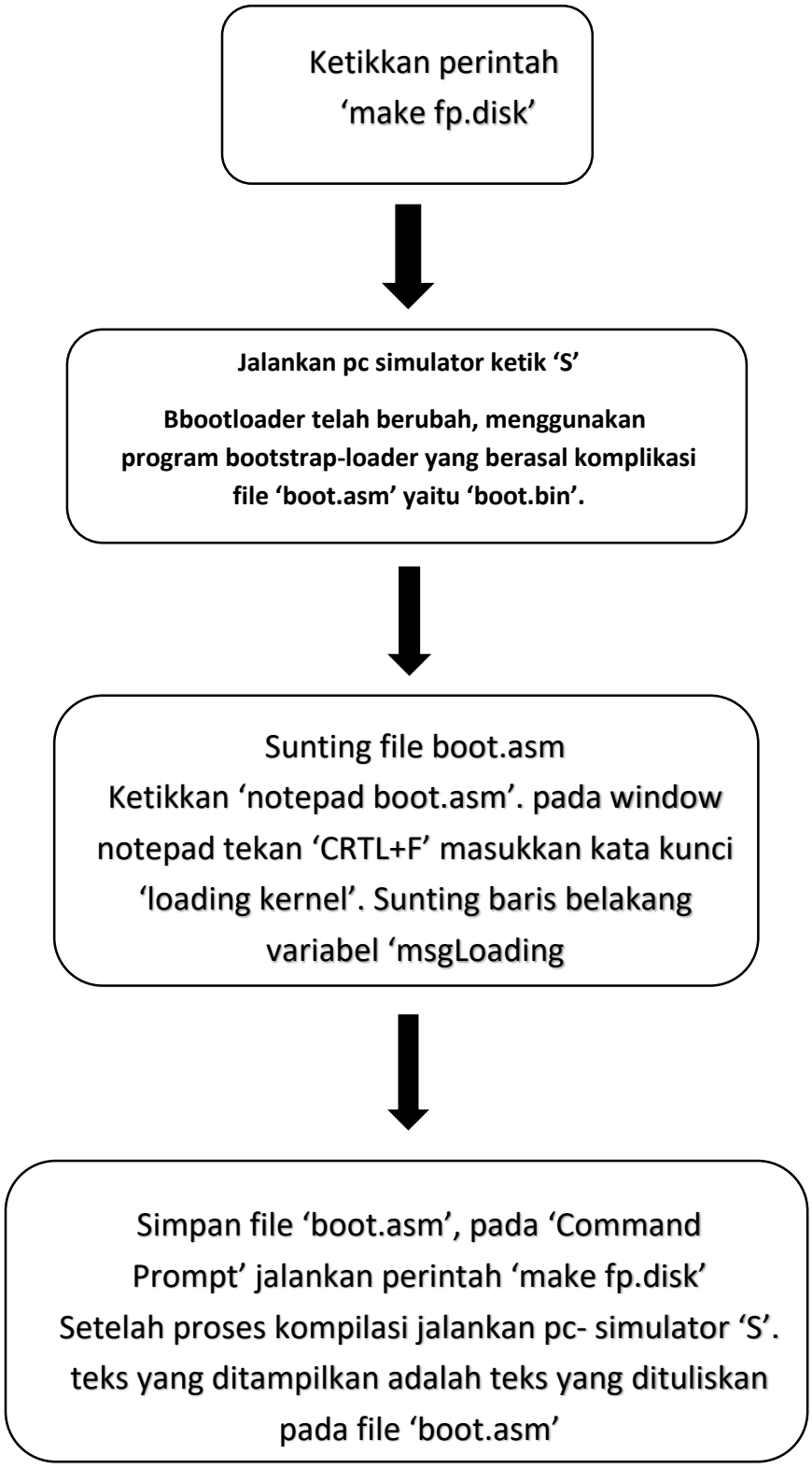
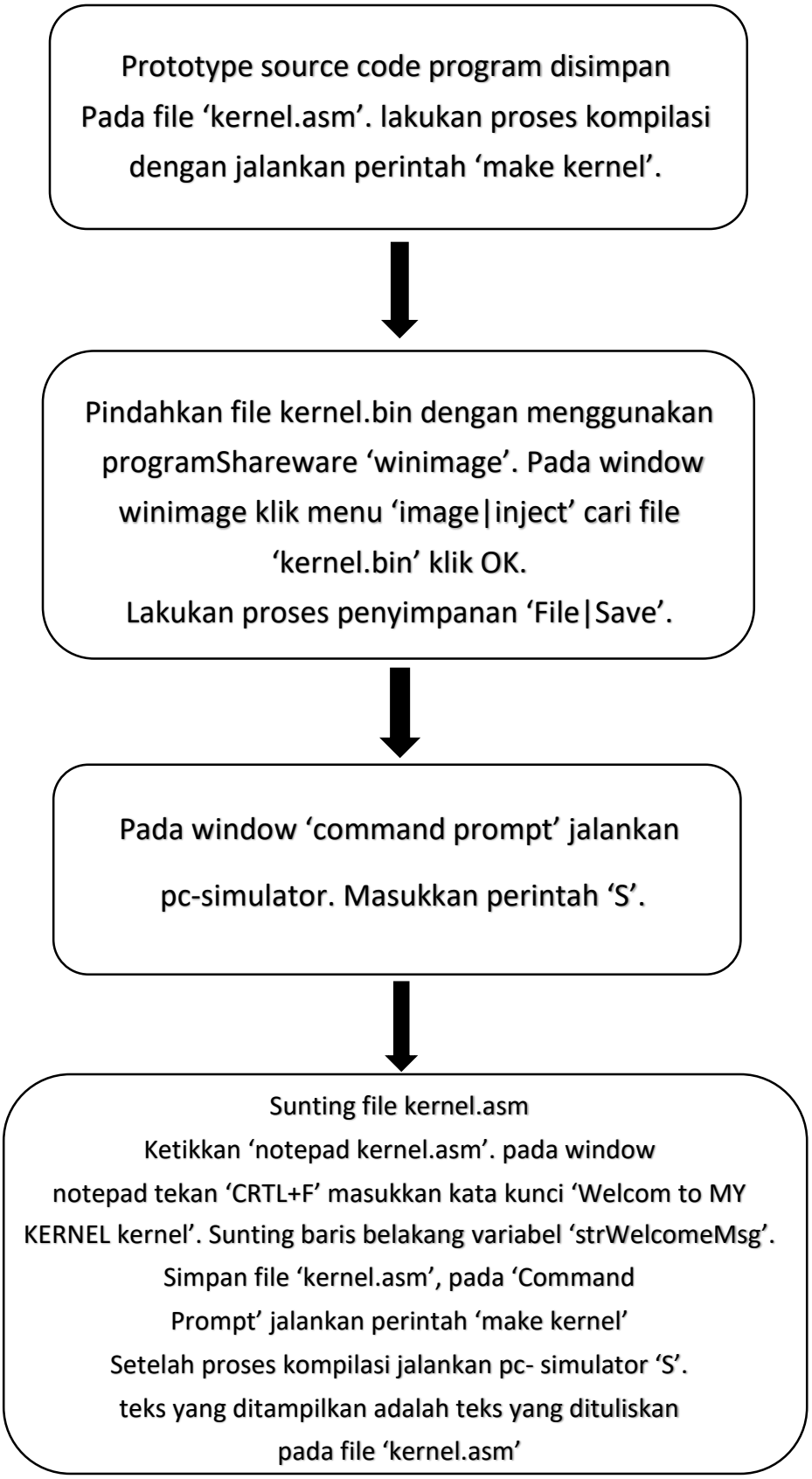

Bochs for Windows - Display
A: B: CD USER Copy Paste snapshot CONFIG Reset SUSPEND Power
Plex86/Bochs VGABios 0.6a 19 Aug 2006
This VGA/VBE Bios is released under the GNU LGPL
Please visit :
. http://bochs.sourceforge.net
. http://www.nongnu.org/vgabios
Bochs VBE Display Adapter enabled
Bochs BIOS - build: 09/10/07
$Revision: 1.183 $ $Date: 2007/09/10 20:00:29 $
Options: apmbios pcibios eltorito rombios32
Booting from Floppy...
Belajar membuat BOOTSTRAP-LOADER
Welcome to MY KERNEL Ver 0.01
MY KERNEL$>_
CTRL + 3rd button enables mouse
A:
NUM
CAPS
SCRL

13.


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...
Belajar membuat BOOTSTRAP-LOADER
.....
.....
..
Belajar membuat KERNEL Ver 0.01
MY KERNEL$>_
CTRL + 3rd button enables mouse
A:
NUM
CAPS
SCRL

TUGAS

1. Buatlah algoritma dari program boot.asm dalam bentuk flowchart!



2. Buatlah algoritma dari program kernel.asm dalam bentuk flowchart!