

TUGAS
PRAKTIKUM SISTEM OPERASI
MODUL 2 MENGENAL PROSES PEMBUATAN ‘DISK BOOT’



Disusun Oleh :

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PROGRAM STUDI TEKNIK INFORMATIKA
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UNIVERSITAS MUHAMMADIYAH SURAKARTA TAHUN 2022/2023

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Langkah Kerja

1. Mengatur 'path' dan pergi ke direktori kerja

```

C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\LABRPL-22>cd /

C:\>cd 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

C:\OS\LAB>cd lab2

C:\OS\LAB\LAB2>dir
Volume in drive C has no label.
Volume Serial Number is 22FC-F6EC

Directory of C:\OS\LAB\LAB2

09/03/2015  01:42 PM    <DIR>          .
09/03/2015  01:42 PM    <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
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
               6 File(s)          25,864 bytes
               2 Dir(s)  138,563,059,712 bytes free

C:\OS\LAB\LAB2>

```

2. Menjalankan 'bximage'.

```
C:\OS\LAB\LAB2>bximage
=====
                        bximage
          Disk Image Creation Tool for Bochs
    $Id: bximage.c,v 1.32 2006/06/16 07:29:33 wruppert 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]
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

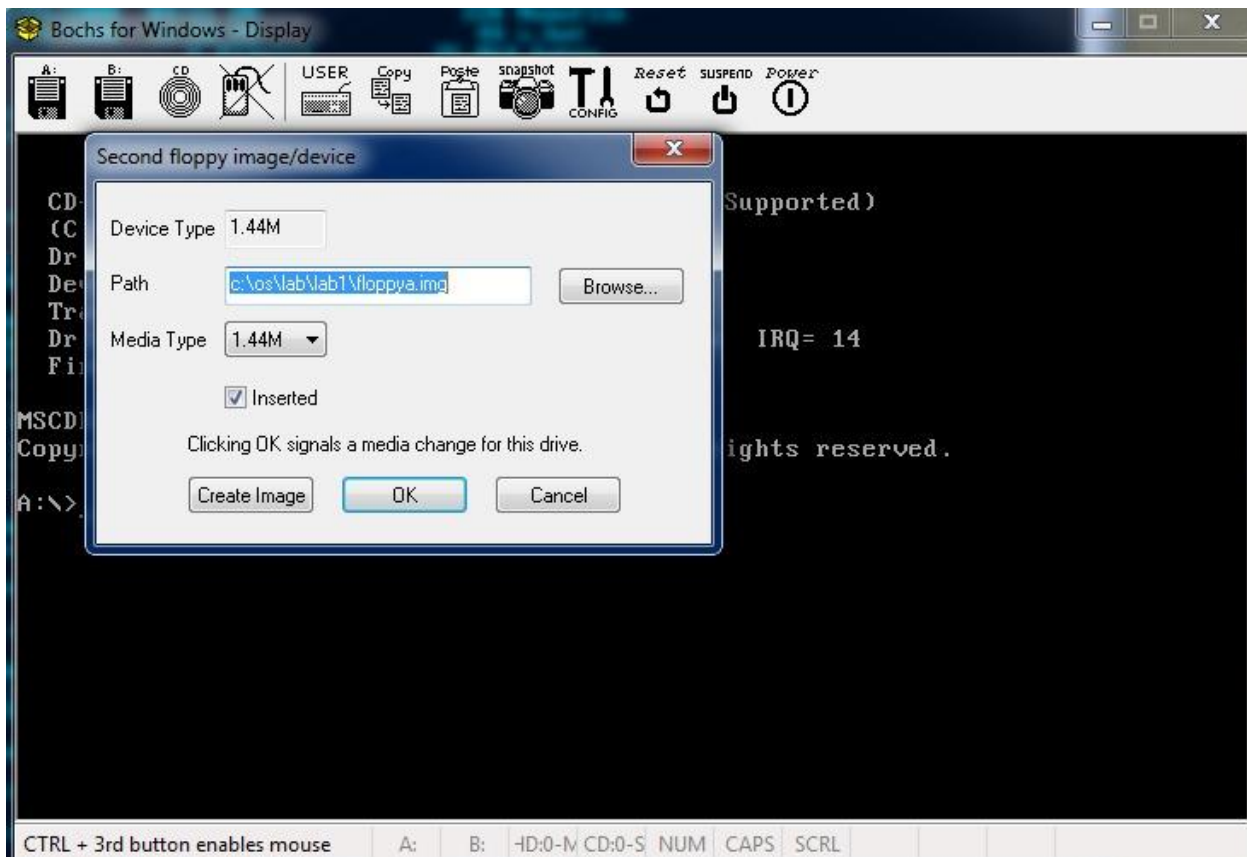
Writing: [] Done.

I wrote 1474560 bytes to floppya.img.

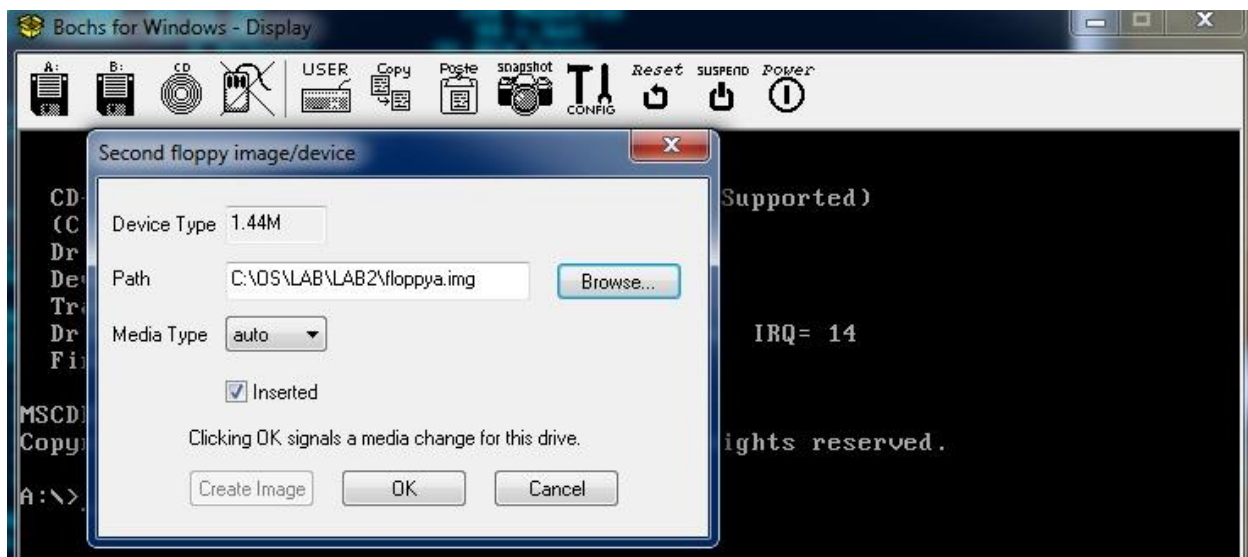
The following line should appear in your bochsrc:
  floppya: image="floppya.img", status=inserted
<The line is stored in your windows clipboard, use CTRL-U to paste>

Press any key to continue
C:\OS\LAB\LAB2>
```

3. Mem-format 'floppya.img' dan mengisinya dengan system operasi DOS versi 7.



4. Mengatur lokasi file image sehingga menunjuk ke file '*floppya.img*' yang terdapat pada direktori kerja 'LAB2'.

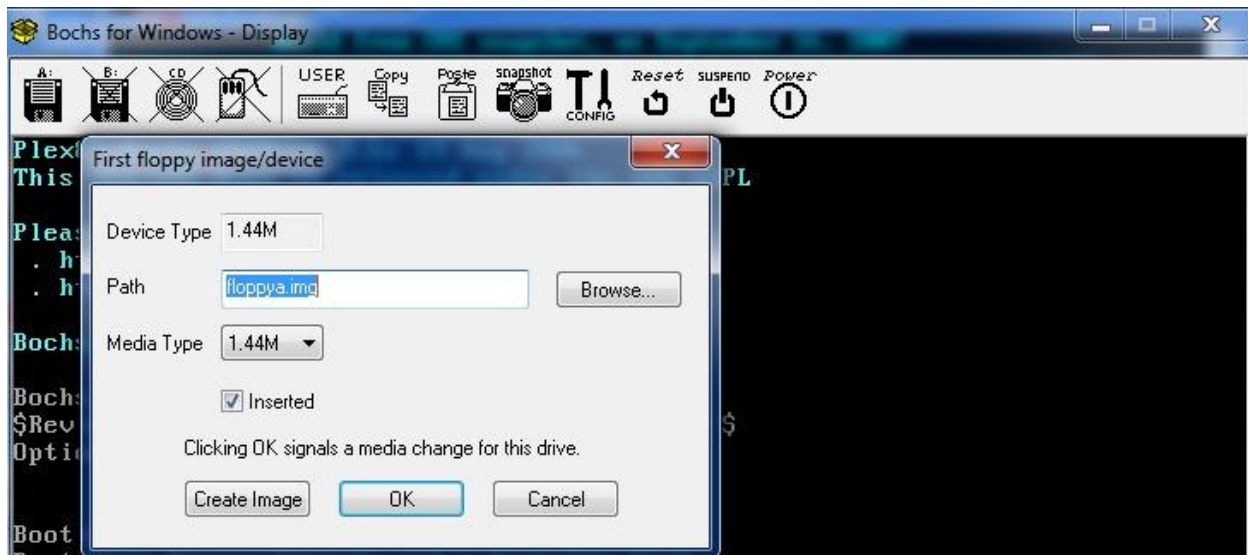


5. Dari prompt 'A:>' ketikkan perintah 'A:>Format B: /S' selesaikan prosesnya.

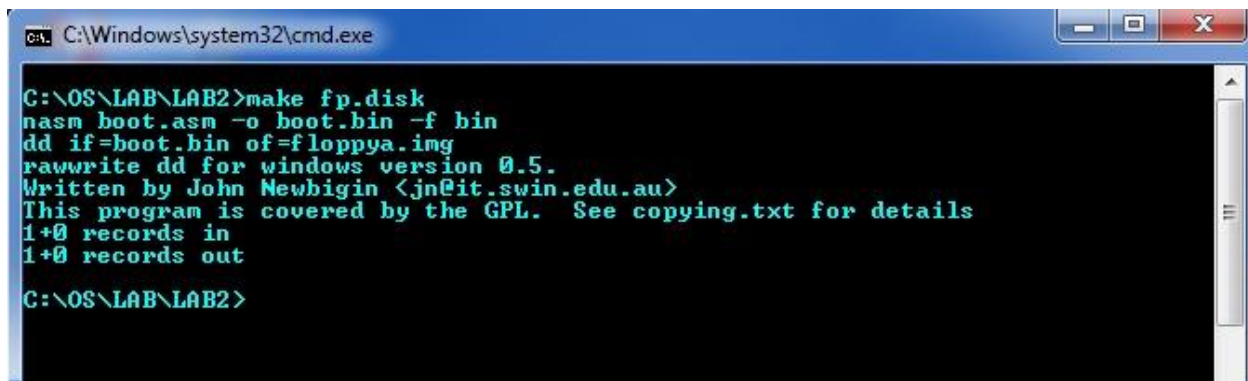
```
C:\OS\LAB\LAB2>dosfp
C:\OS\LAB\LAB2>cd "..\..\Bochs-2.3.5\dos"
C:\OS\Bochs-2.3.5\dos>..\bochs -q -f bochsrc2.txt
00000000000i[APIC?] local apic in  initializing
=====
                Bochs x86 Emulator 2.3.5
            Build from CVS snapshot, on September 16, 2007
=====
00000000000i[      ] reading 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"
C:\OS\LAB\LAB2>
```

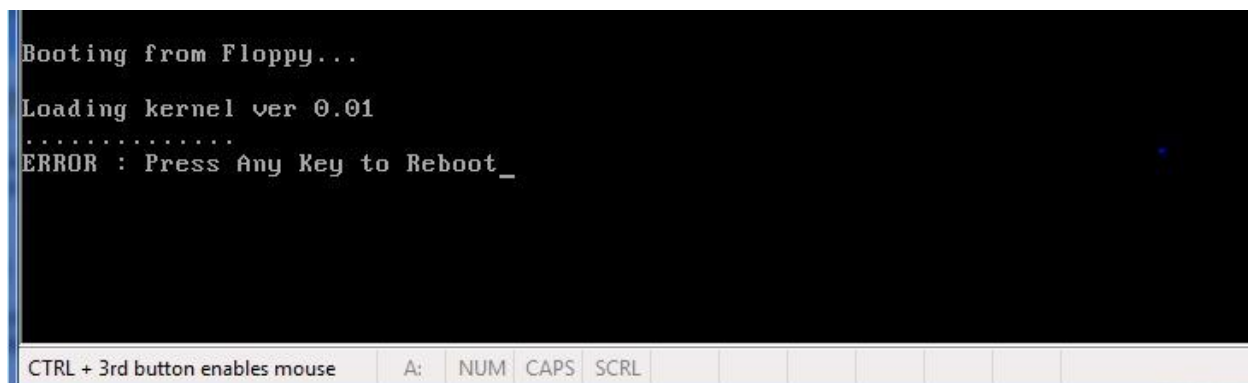
6. BOOT PC-simulator dengan file '*floppya.img*'



7. Komplikasi source code 'boot.asm' dan menmindahkan hasilnya ke bootsector '*floppya.img*'.



8. Jalankan PC-simulator ketik 's' <ENTER>



9. Menyunting file 'boot.asm', ketikkan 'notepad boot.asm' <ENTER>.

```
Bochs BIOS - build: 09/10/07
$Revision: 1.183 $ $Date: 2007/09/10 20:00:29 $
Options: apmbios pcibios eltorito rombios32

Booting from Floppy...

Dian
.....
..
universitas muhammadiyah surakarta
MY KERNEL$>_

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

10. Menyiapkan file 'KERNEL.BIN: '

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

11. Memindahkan file 'kernel.bin' kedalam file image 'floppya.img'.

```
Bochs for Windows - Display

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

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

Bochs VBE Display Adapter enabled

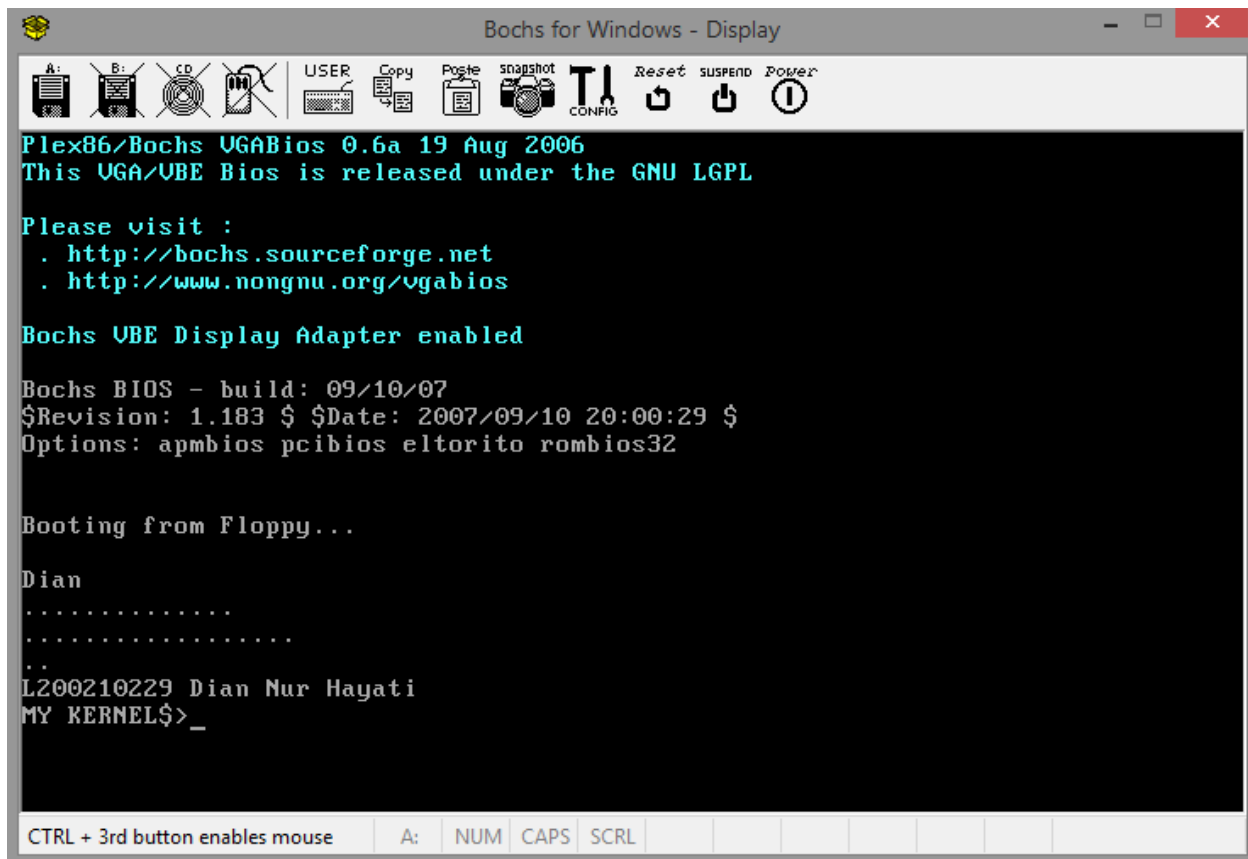
Bochs BIOS - build: 09/10/07
$Revision: 1.183 $ $Date: 2007/09/10 20:00:29 $
Options: apmbios pcibios eltorito rombios32

Booting from Floppy...

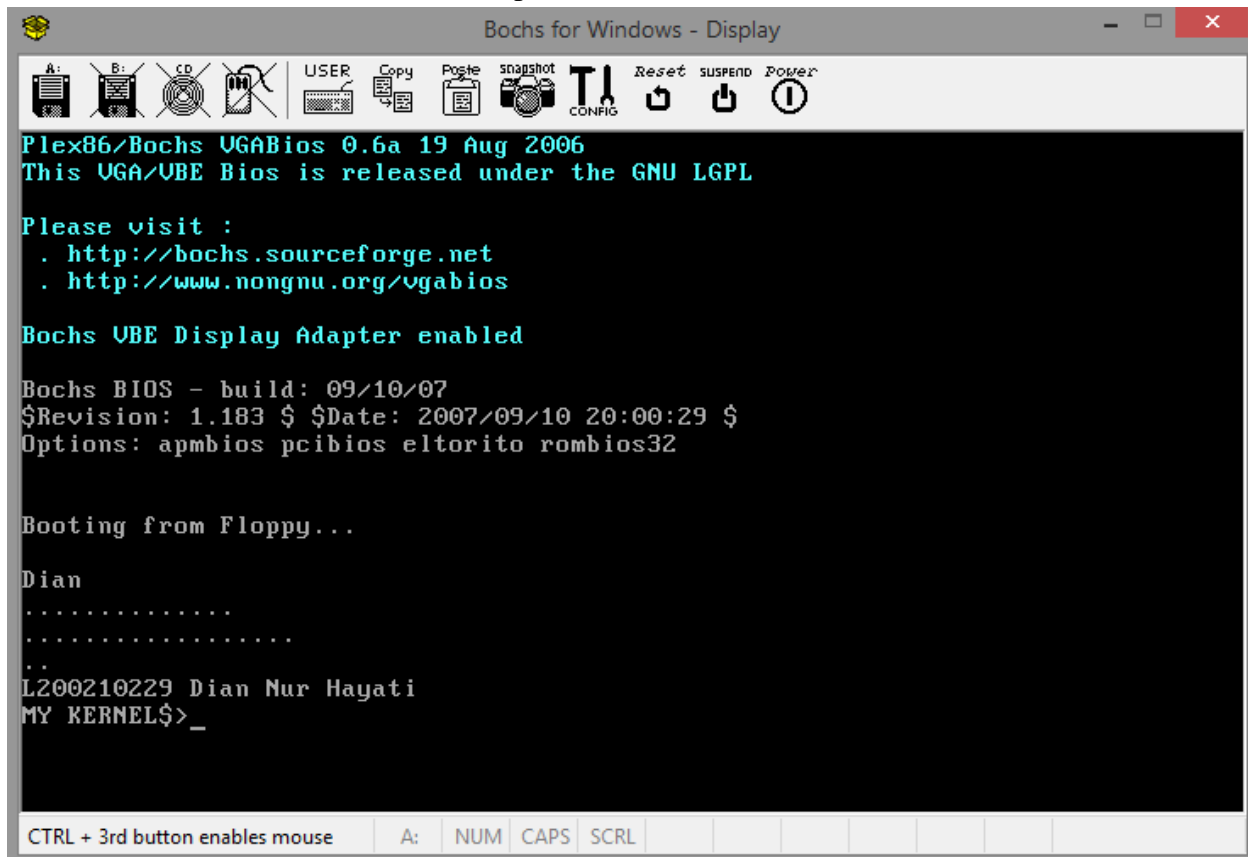
Dian
.....
..
L200210229 Dian Nur Hayati
MY KERNEL$>_

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

12. Selanjutnya siap melakukan proses boot pada PC-simulator dengan menggunakan 'floppya.img' yang sudah diberi tambahan file 'kernel.bin'.



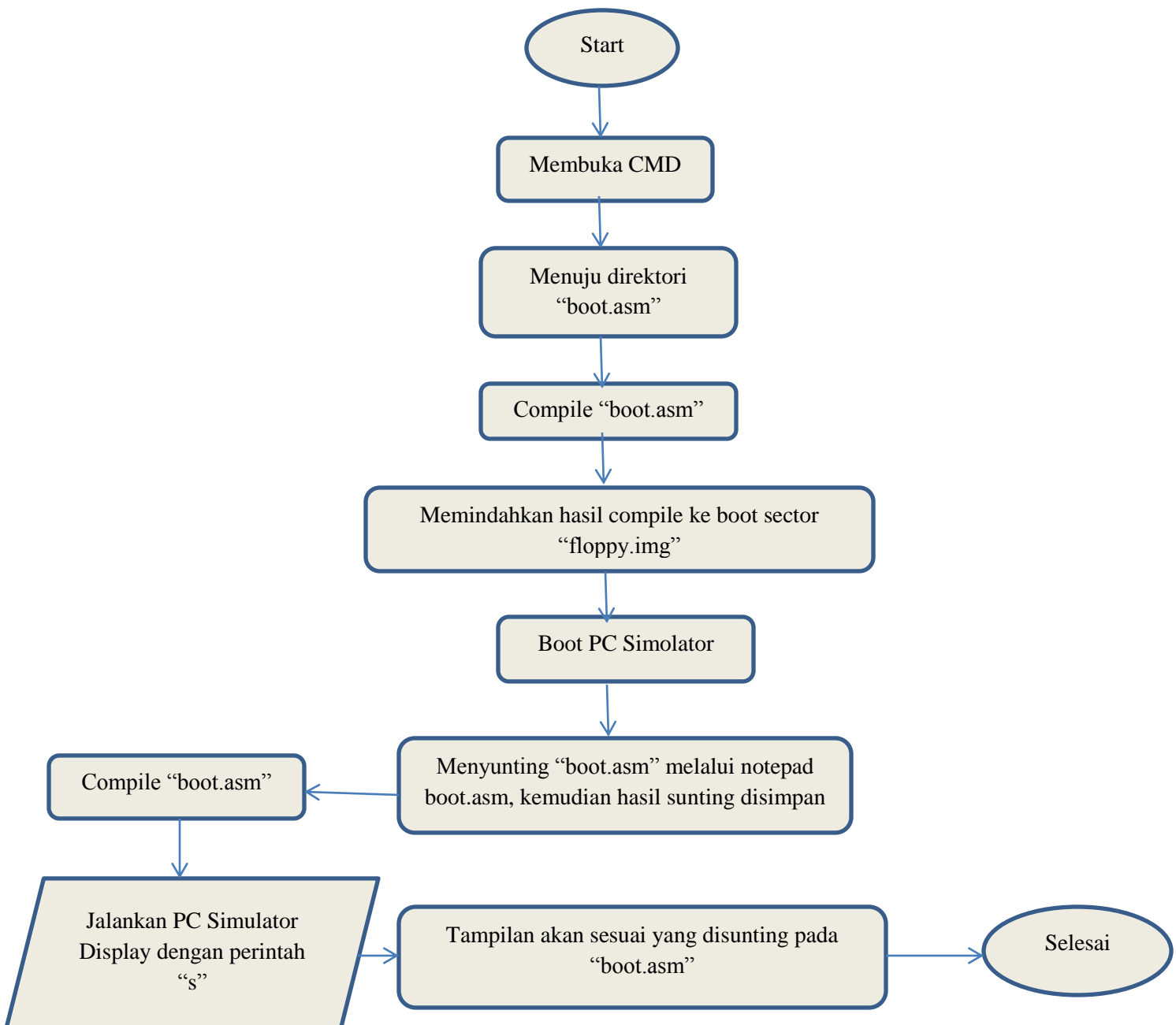
13. Memodifikasi file 'kernell.asm' : pada bagian berikut ini kita akan mencoba melakukan modifikasi kecil pada file 'kernel.asm'.



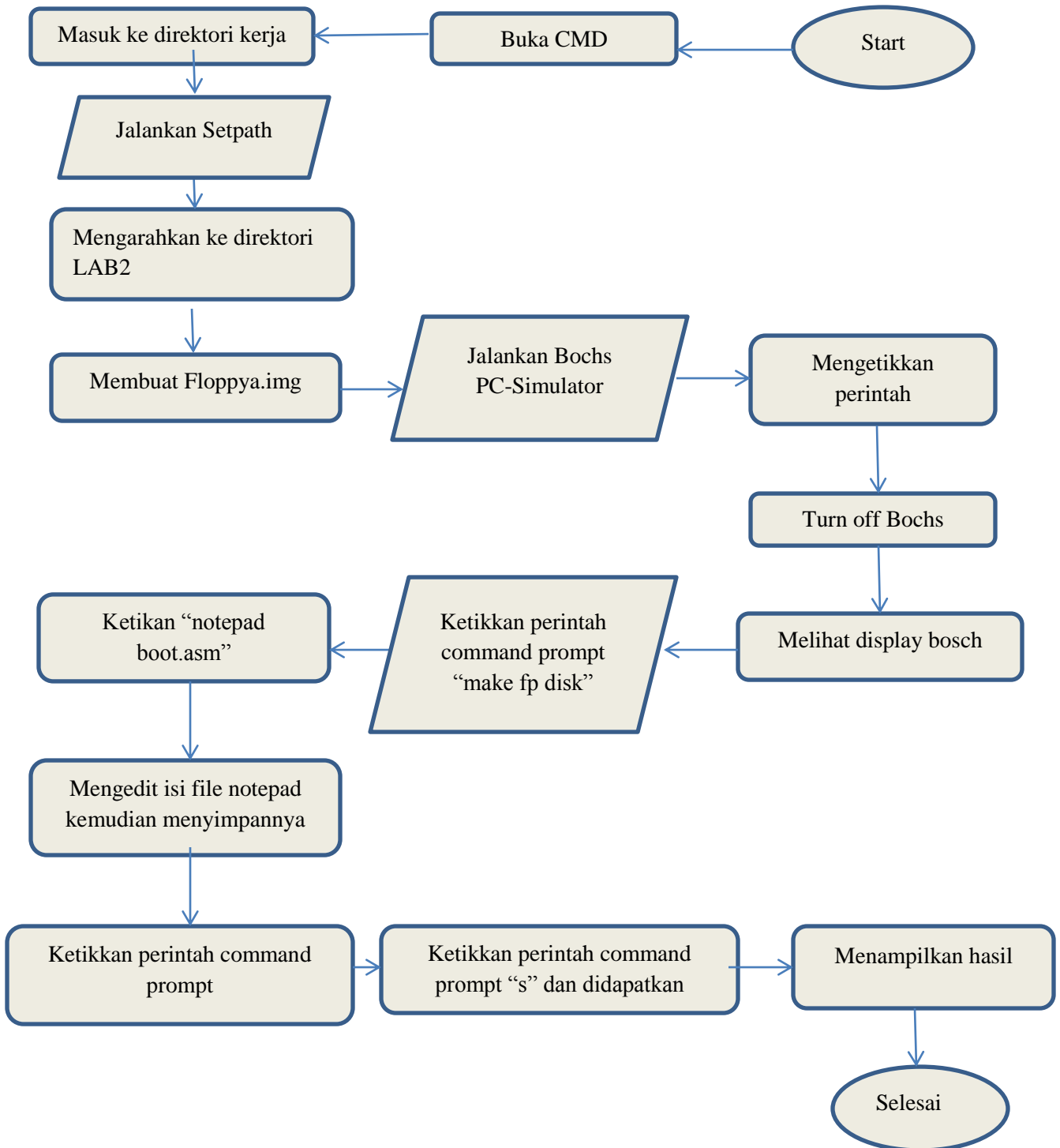
Tugas

1. Pelajari cara kerja program '*boot.asm*' buatlah algoritma dari program tersebut dalam bentuk flowchart. Untuk memudahkan dalam memahami proses boot buatlah dua jenis algoritma, pertama buat algoritma yang bersifat global dan kedua buat algoritma yang bersifat detail.

Algoritma '*boot.asm*' bersifat global

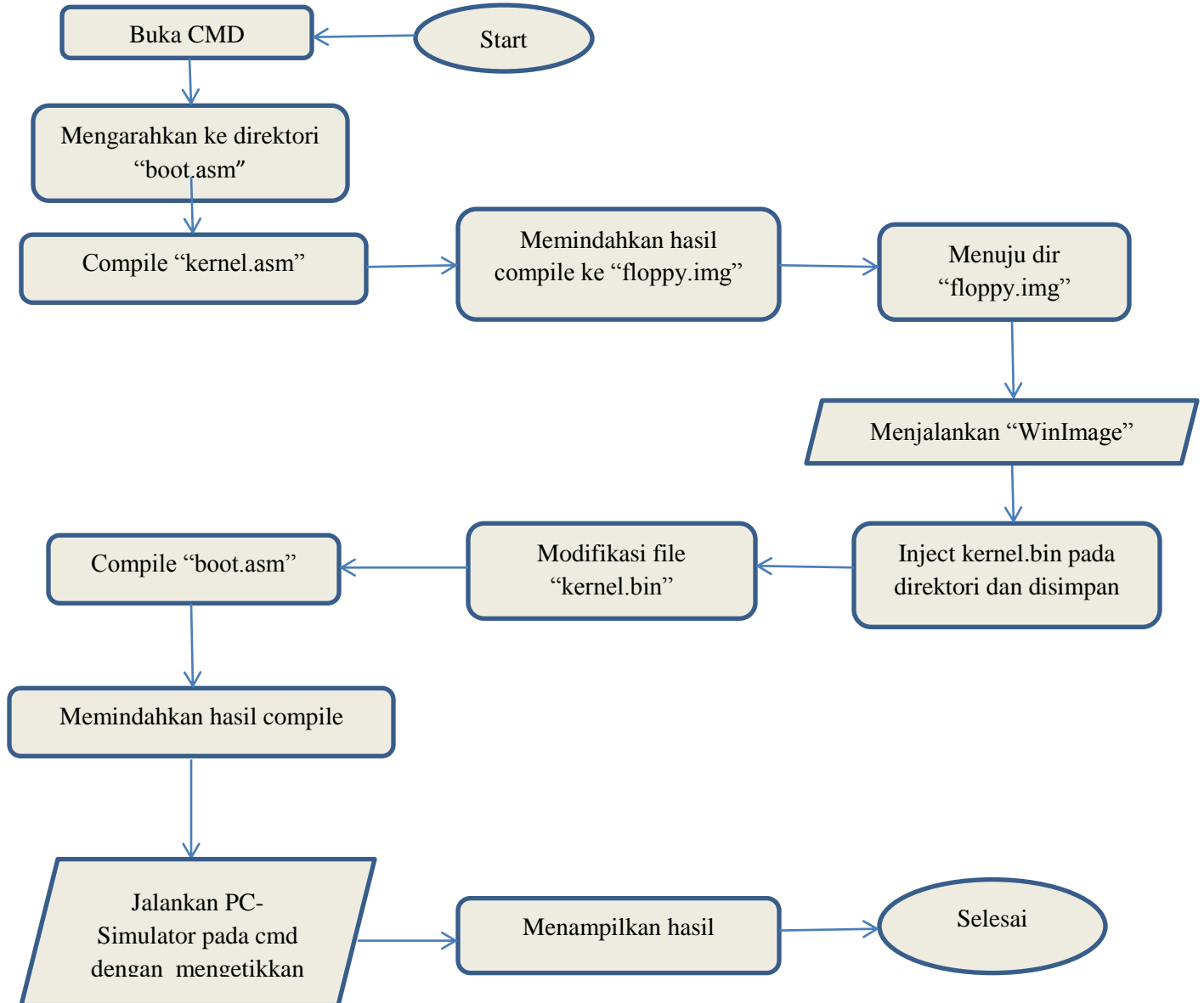


Algoritma 'boot.asm' bersifat detail



2. Lakukanlah hal yang sama untuk program 'kernel.asm'

Algoritma kernel.asm secara global



Algoritma kernel.asm secara detail

