TUGAS PRAKTIKUM MODUL 2

MENGENAL PROSES PEMBUATAN 'DISK BOOT'

Disusun Oleh :

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Laporan Praktikum Modul 2 dan Tugas Modul 2 :

1. Buka Command Prompt lalu atur ‘path’ dan pergi ke direktori kerja

```
C:\Users\ASUS>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/lab2

C:\OS\LAB\LAB2>dir
 Volume in drive C is OS
 Volume Serial Number is 72CC-2C5C

 Directory of C:\OS\LAB\LAB2

13/09/2022  14:12    <DIR>          .
13/09/2022  14:12    <DIR>          ..
11/10/2019  14:42            10.184 bochsout.txt
15/12/2008  16:17             1.628 bochsrc.bxrc
25/09/2019  16:29            14.359 boot.asm
25/09/2019  16:31               512 boot.bin
16/09/2015  07:51               512 boots.bin
15/12/2008  00:47                78 dosfp.bat
25/09/2019  16:42         1.474.560 floppya.1mg
25/09/2019  16:41             7.971 kernel.asm
25/09/2019  16:41               616 kernel.bin
15/12/2008  16:21               227 Makefile
15/12/2008  12:20                44 s.bat
              11 File(s)      1.510.691 bytes
               2 Dir(s)  60.677.185.536 bytes free

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

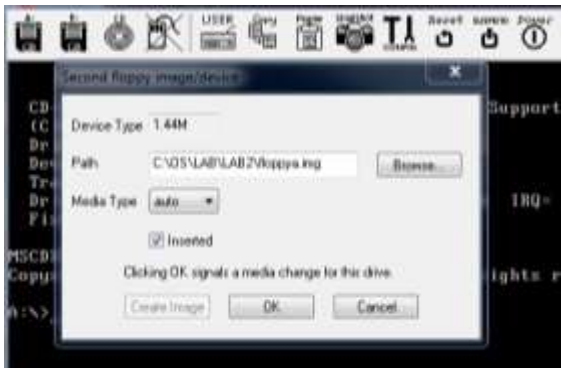
2. Menjalankan bx Image lalu menjawab pertanyaan-pertanyaan yang muncul dengan urutan ‘fd’,’1.44’ dan floppya.img

```
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 B8F4-E571

 Directory of C:\OS\LAB\LAB2

09/28/2022  08:51 AM    <DIR>          .
09/28/2022  08:51 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
09/28/2022  08:51 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)  152,880,784,384 bytes free

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

3. Menjalankan perintah DosFp

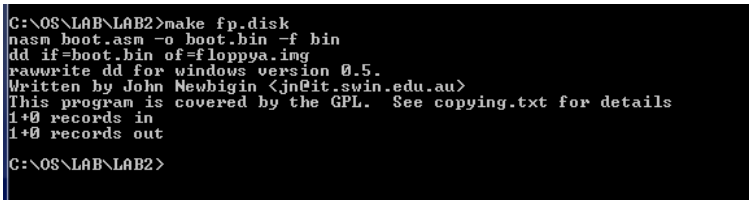
4. Mengatur Lokasi file image sehingga menunjuk ke file ‘Floppya.img’



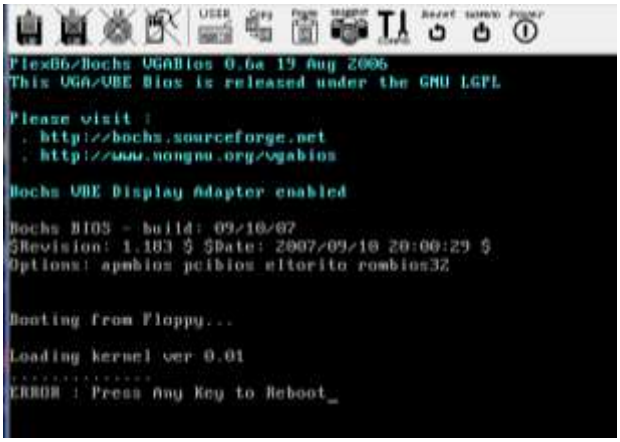
5. Perintah ‘A:>Format B: /S’ dan selesaikan prosesnya

6. BOOT PC-simulator dengan file ‘floppya.img’ dan Menjalankan perintah ‘S’

7. Komplikasi source kode ‘boot.asm’ dan memindahkan hasilnya ke bootsector ‘floopya.img’



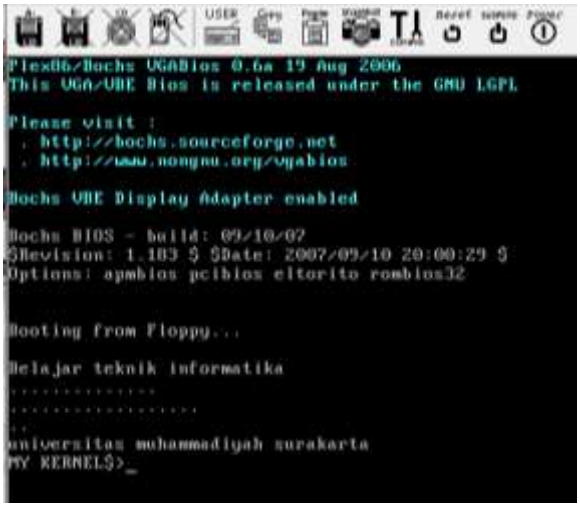
8. BOOT PC Simulator dengan program bootstaploader yang baru dan jalankan PC-Simulator ‘S’.



9. Menyunting file ‘boot.asm’, ketikan ‘notepad boot.asm’

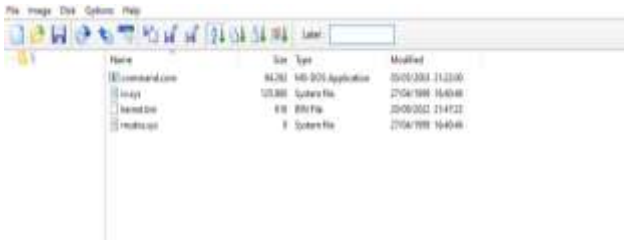
```
File  Edit  Format  View  Help
        ret

;=================================================================
; Definisi VARIABEL umum
;=================================================================
        absoluteSector db 0x00
        absoluteHead   db 0x00
        absoluteTrack  db 0x00

        datasector  dw 0x0000
        cluster     dw 0x0000

;=============================================
; Definisi NAMA file OS/kernel
; 11 karakter: Terdiri dari
; 8 karakter untuk nama file,
; 3 karakter untuk extensi
; tanpa TITIK '.' pemisah
; perintah 'dir' akan menampilkan 'KERNEL.BIN'
;=============================================
        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
    ;-------------------------------------------------------------------------
```

Menjalankan perintah ‘`make fp.disk`’, setelah proses kompilasi jalankan PC-Simulator‘S’.



10. Menyiapkan file ‘KERNEL.BIN’. Lakukan proses kompilasi untuk menghasilkan file ‘`kernel.bin`’ dan Jalankan perintah ‘`make kernel`’.

11. Memindahkan file ‘kernel.bin’ ke dalam file image ‘floppya.img’

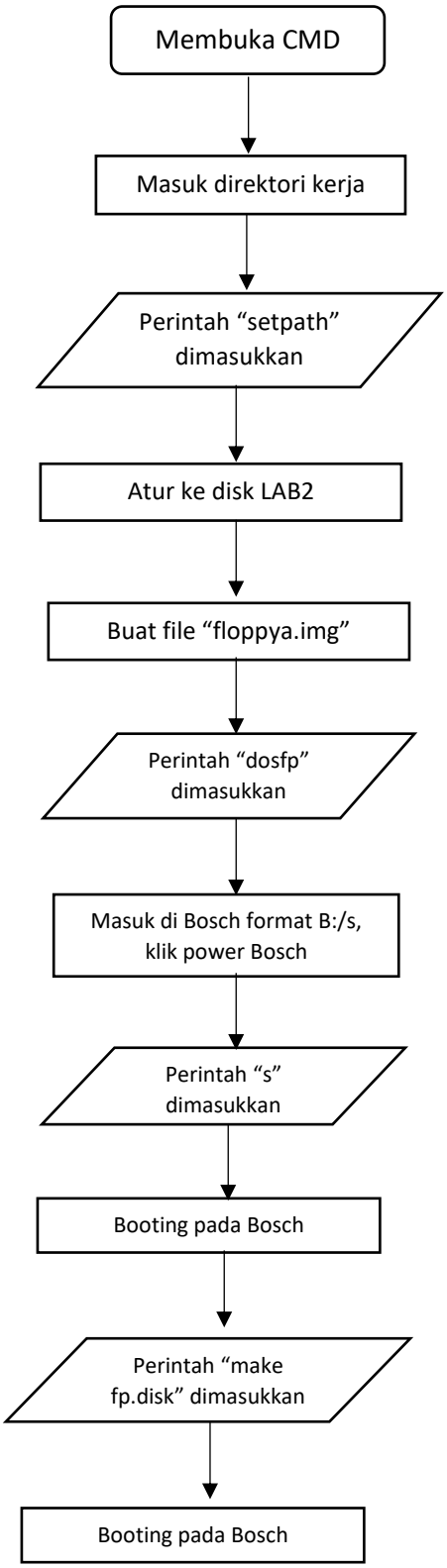


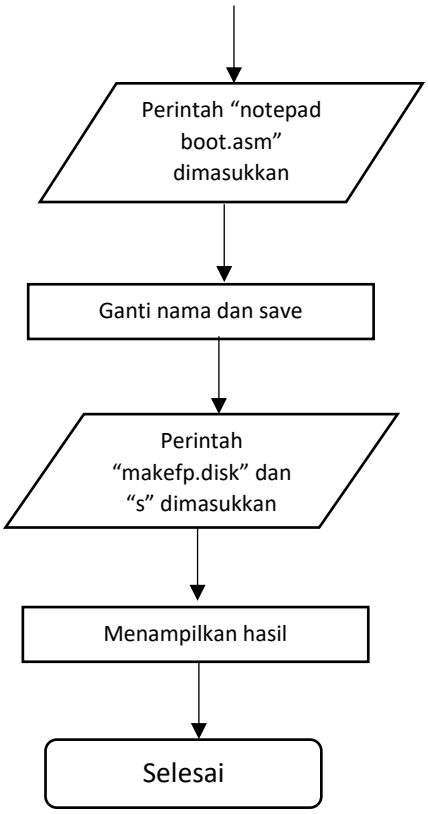
12. Melakukan proses boot pada PC simulator dengan menggunakan ‘floppya.img’ yang sudah diberi tambahan file ‘kernel.bin’

Tugas Modul 2 Halaman 33

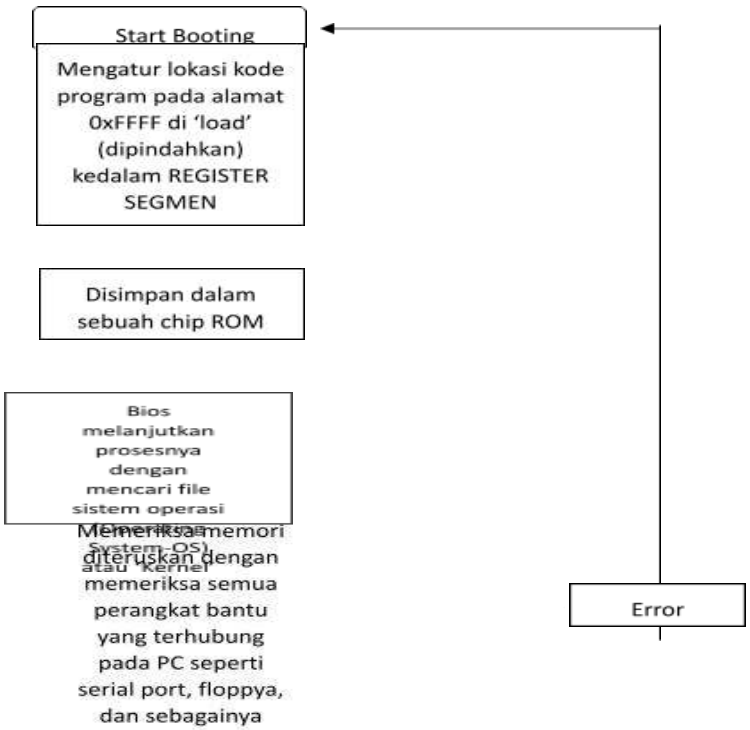
1. Pelajari cara kerja Porgram ‘boot.asm’ Buatlah algoritma dari program tersebut dalam bentuk flowchart. Buatlah 2 jenis Algoritma, pertama buat algoritma bersifat global dan kedua buat algoritma bersifat lebih detail.

Flowchart boot.asm detail :



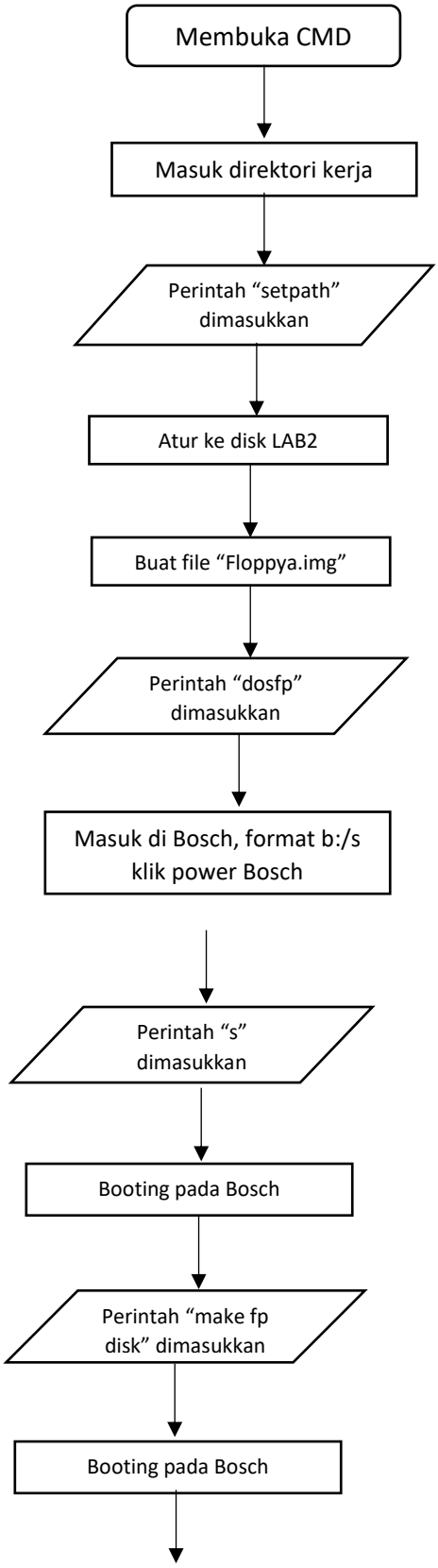


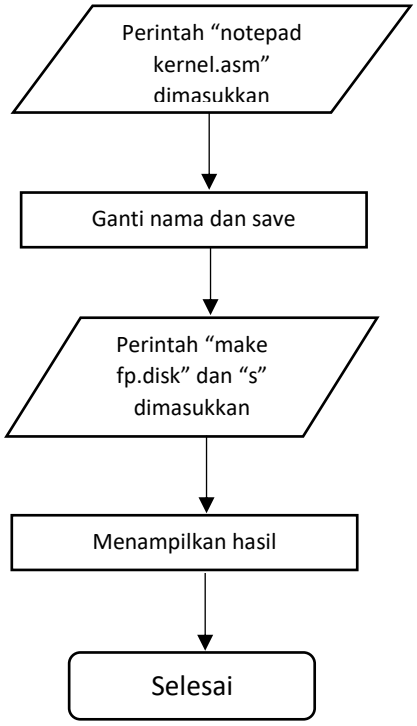
Flowchart boot.asm global :



2. **Lakukan hal yang sama untuk program ‘kernel.asm’**

Flowchart kernel.asm detail :




Perintah “notepad kernel.asm” dimasukkan
Ganti nama dan save
Perintah “make fp.disk” dan “s” dimasukkan
Menampilkan hasil
Selesai

Flowchart kernel.asm global :