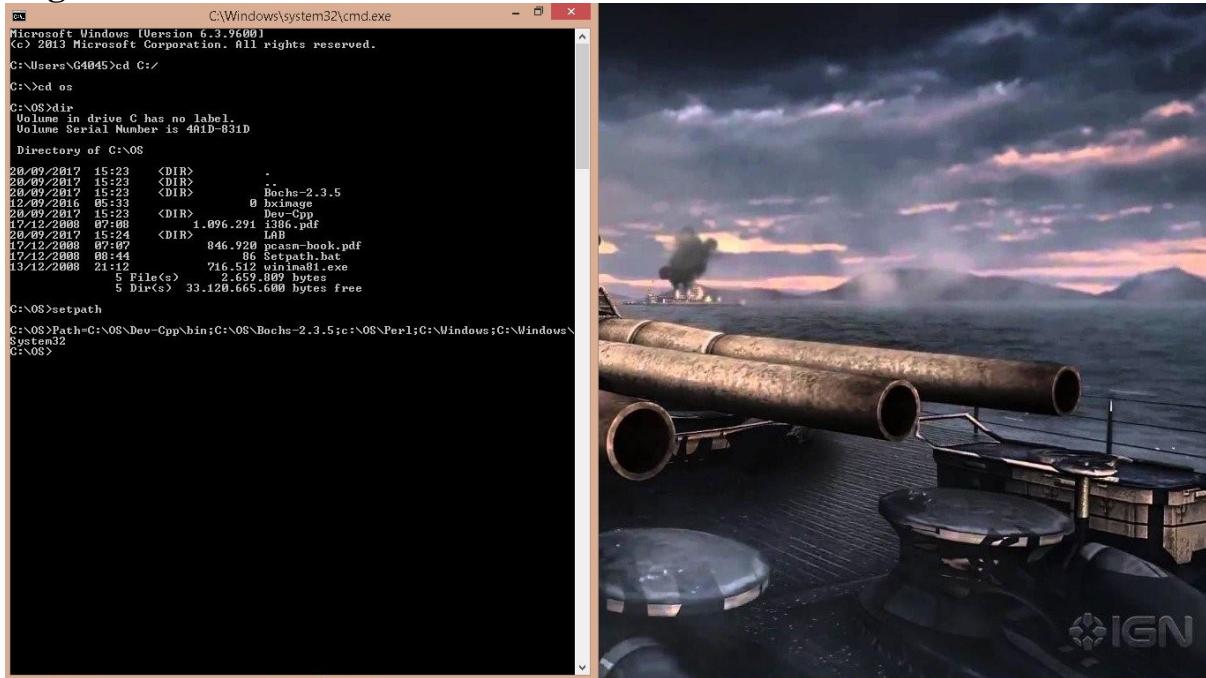


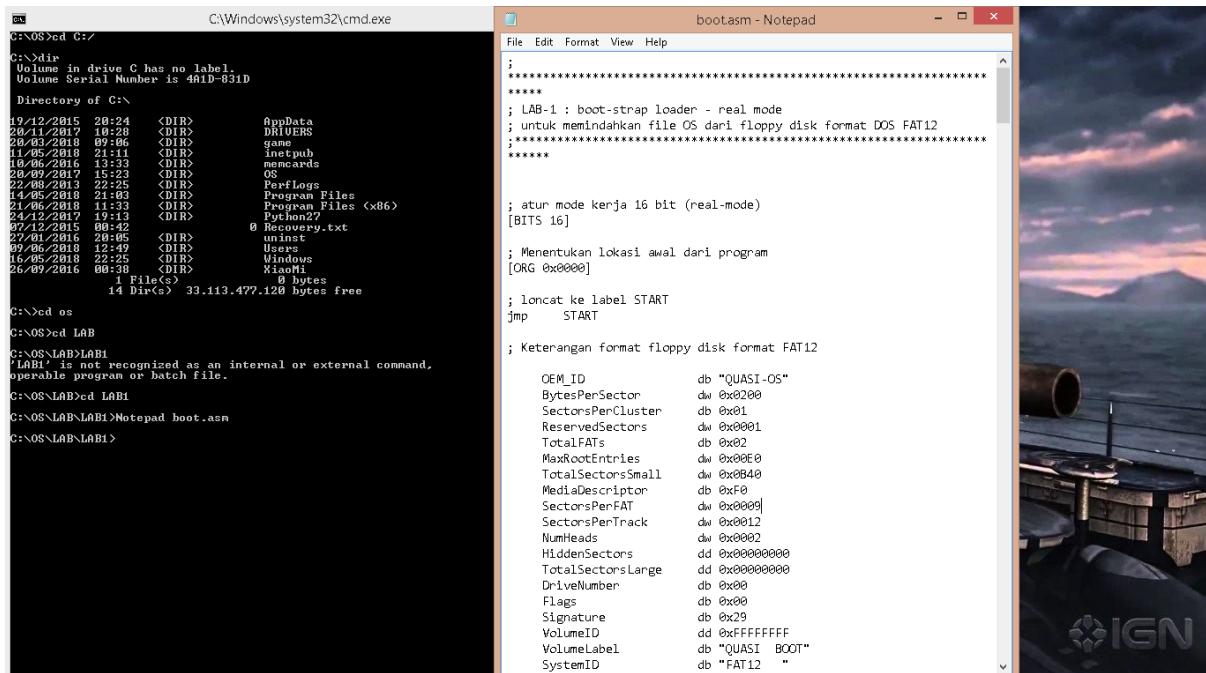
Nama : Kurnia Feby Vidayanto
 Kelas : E
 NIM : L200170102

Modul 1 :

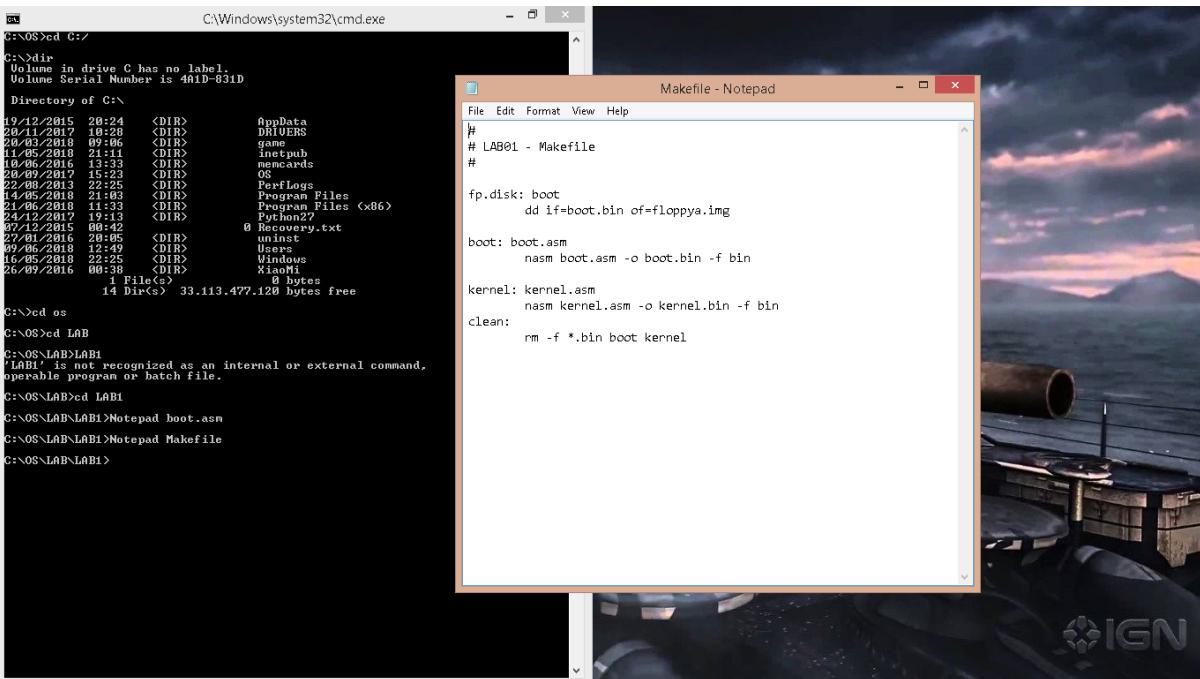
Tugas 1



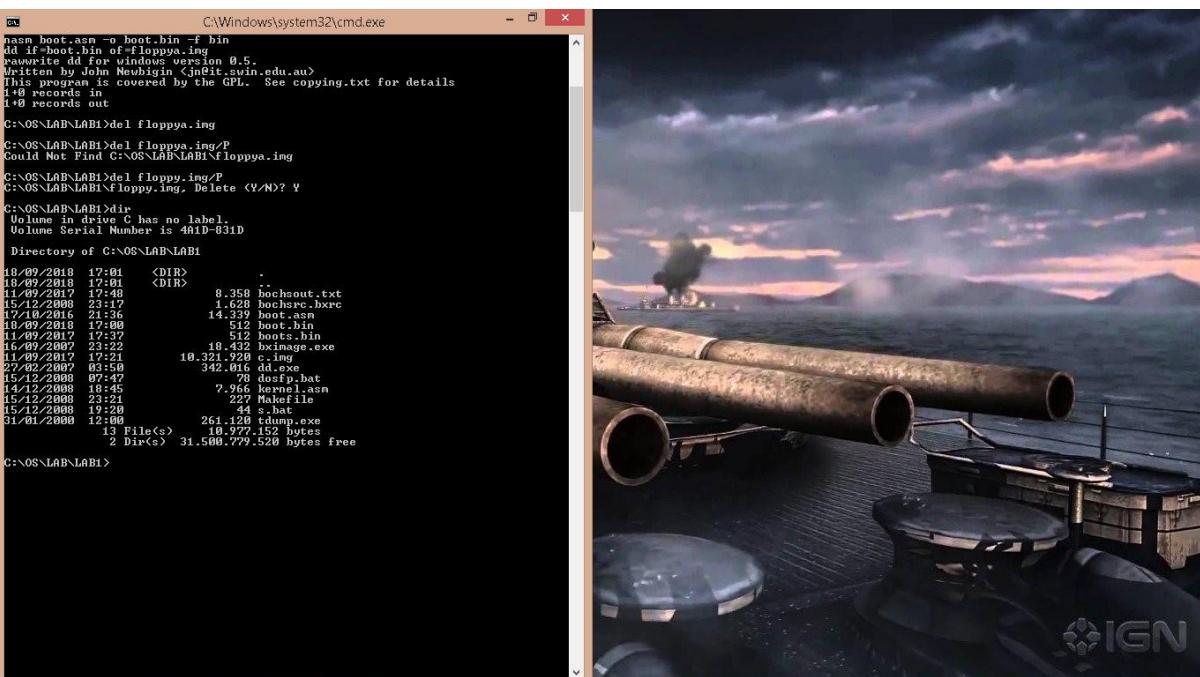
Tahap pertama yaitu mengubah direktori awal ke folder OS menggunakan cmd dengan mengetikkan “cd os” , cd atau change directory adalah perintah untuk mengubah direktori awal ke direktori yang diinginkan. Lalu masukan perintah “setpath”, untuk menjalankan folder setpath. Anda harus menjalankan program setpath sebelum memulai praktikum.



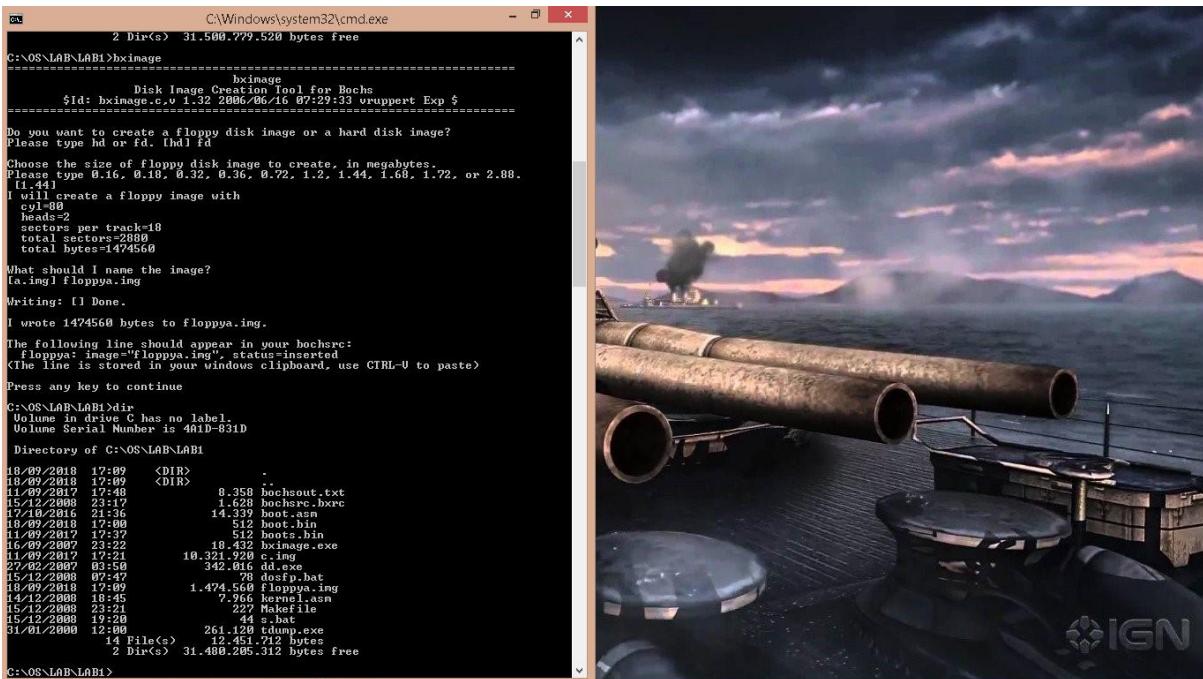
Selanjutnya masuk ke direktori “C:\OS\LAB\LAB1” , lalu ketikanlah “Notepad boot.asm” untuk mengakses boot.asm, setelah menjalankan perintah diatas, maka akan membuka notepad, sebaiknya jangan melakukan modifikasi terhadap program tersebut.



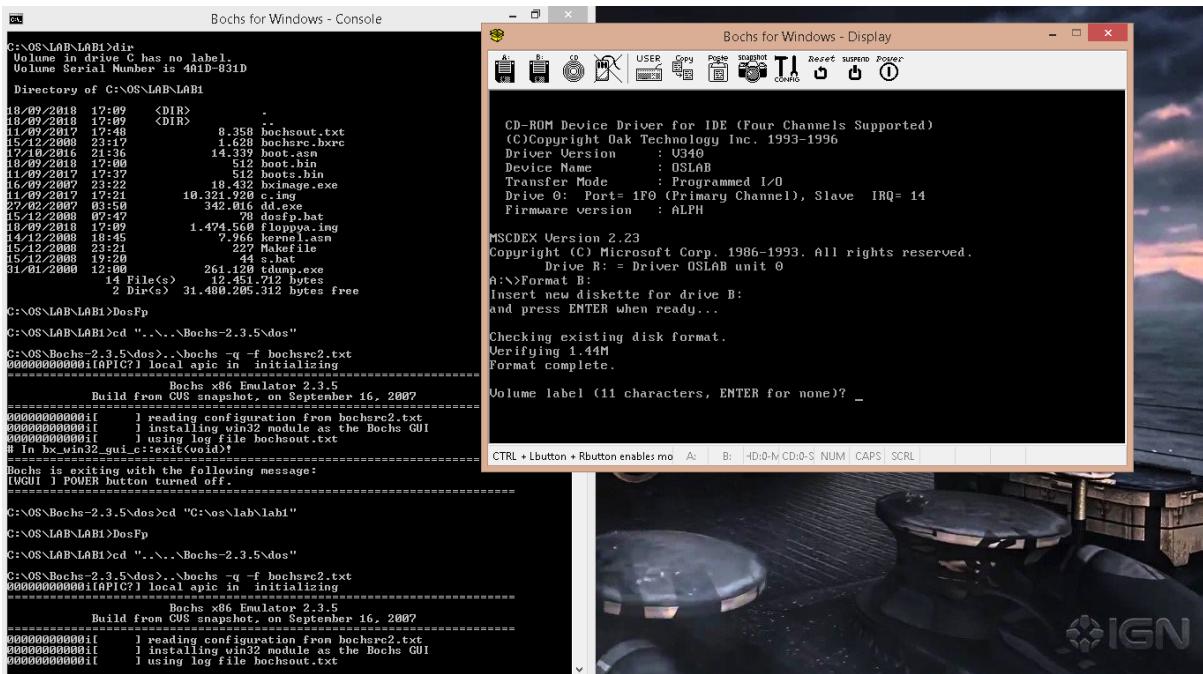
Selanjutnya adalah membuka “Makefile”, dari CMD dengan mengetikkan “Notepad M” lalu tekan tombol TAB sehingga muncul “Notepad Makefile” lalu tekan ENTER, lalu akan muncul windows “Notepad” dengan file “Makefile”. Tanda “#” digunakan untuk memberi komentar, lebel berakhiran “.:” adalah merupakan kontrol proses.



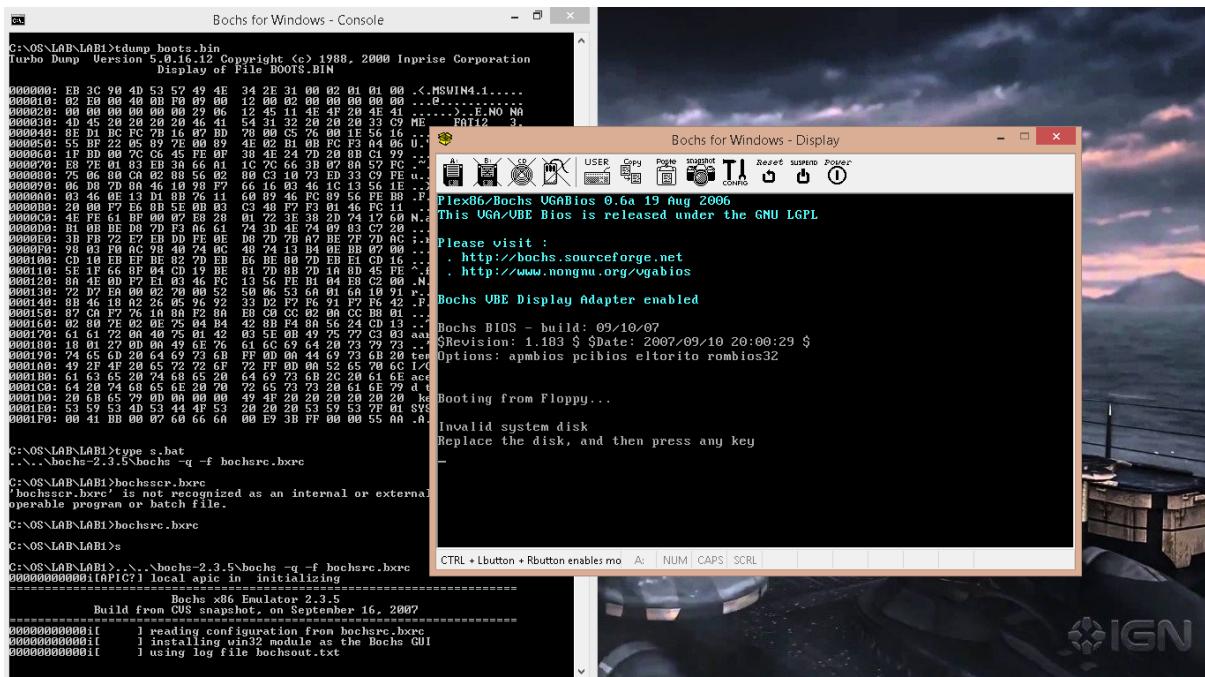
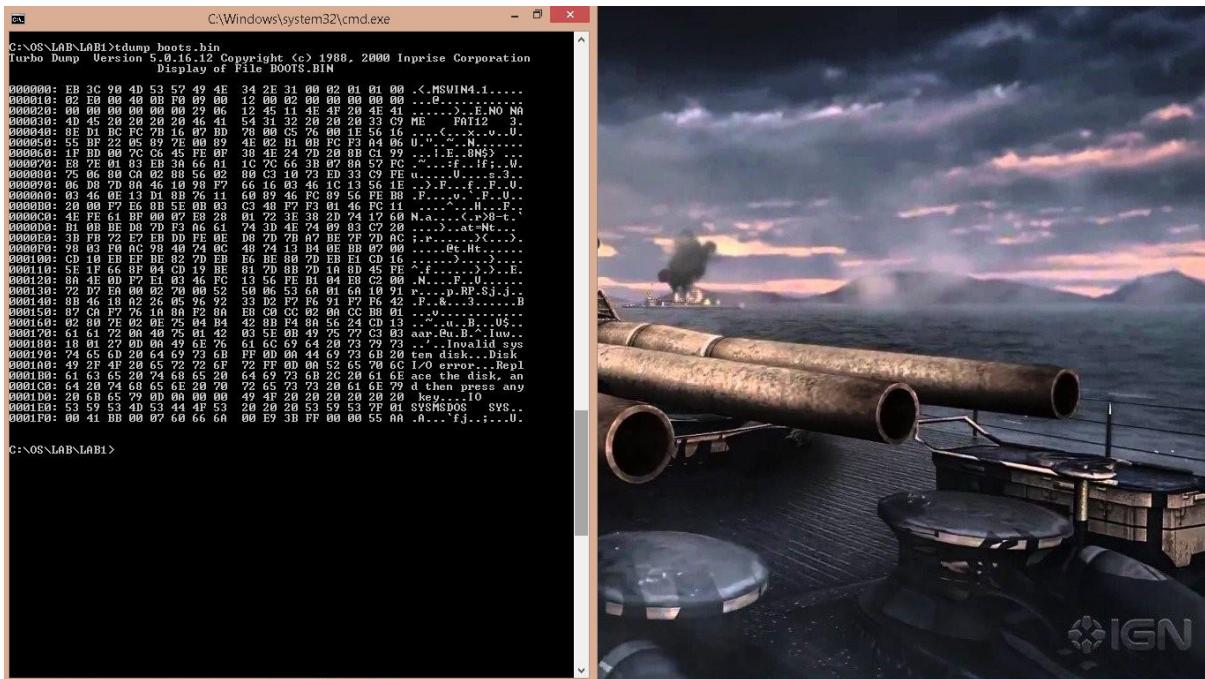
Setelah itu coba hapuslah file ”floppya.img”(di screen shot tertulis ”floppy.img karna sudah dedit sebelumnya”), dengan menggunakan perintah “del Floppya.img/P” lalu tekan <ENTER> dan pilih Y, dan coba cek terlebih dahulu dengan perintah “dir” untuk memastikan file yang dihapus hilang.



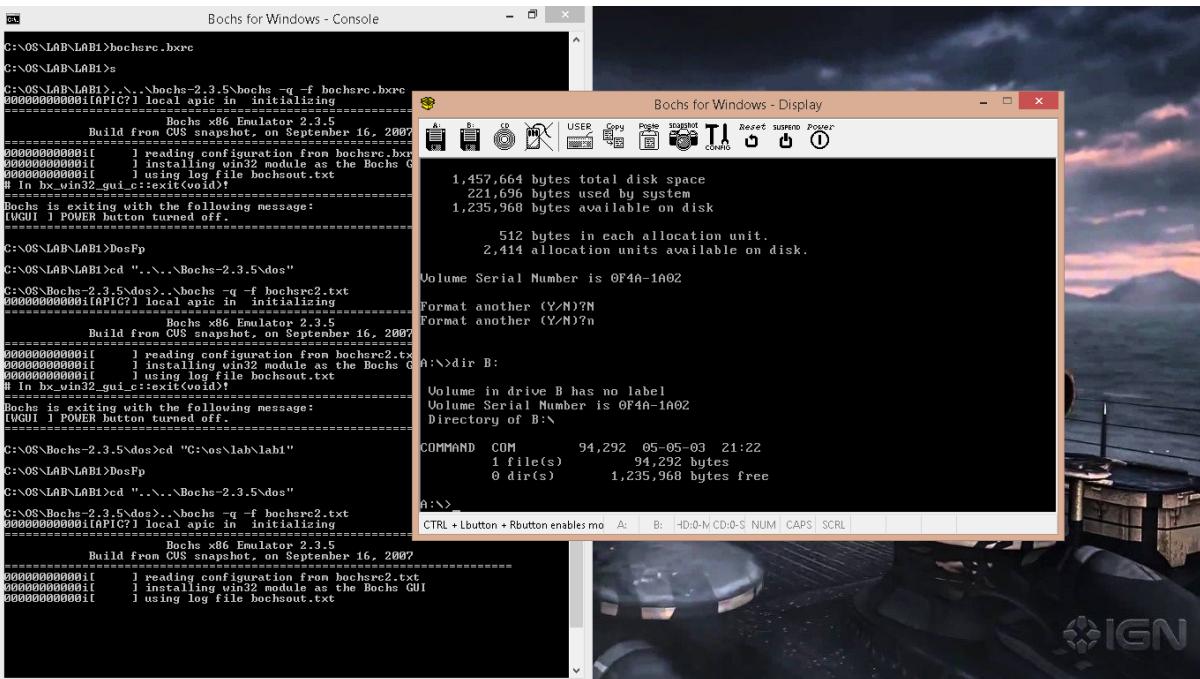
Setelah itu panggil “bximage” untuk membuat floppy image, setelah itu buatlah floppy image dengan mengetikan “fd” dan tekan ENTER lalu tekan ENTER lagi, setelah itu anda diminta untuk memasukan nama floppy image yang baru, setelah itu tekan ENTER lagi, dan ENTER lagi, jika sudah maka cek lah menggunakan perintah “dir”.



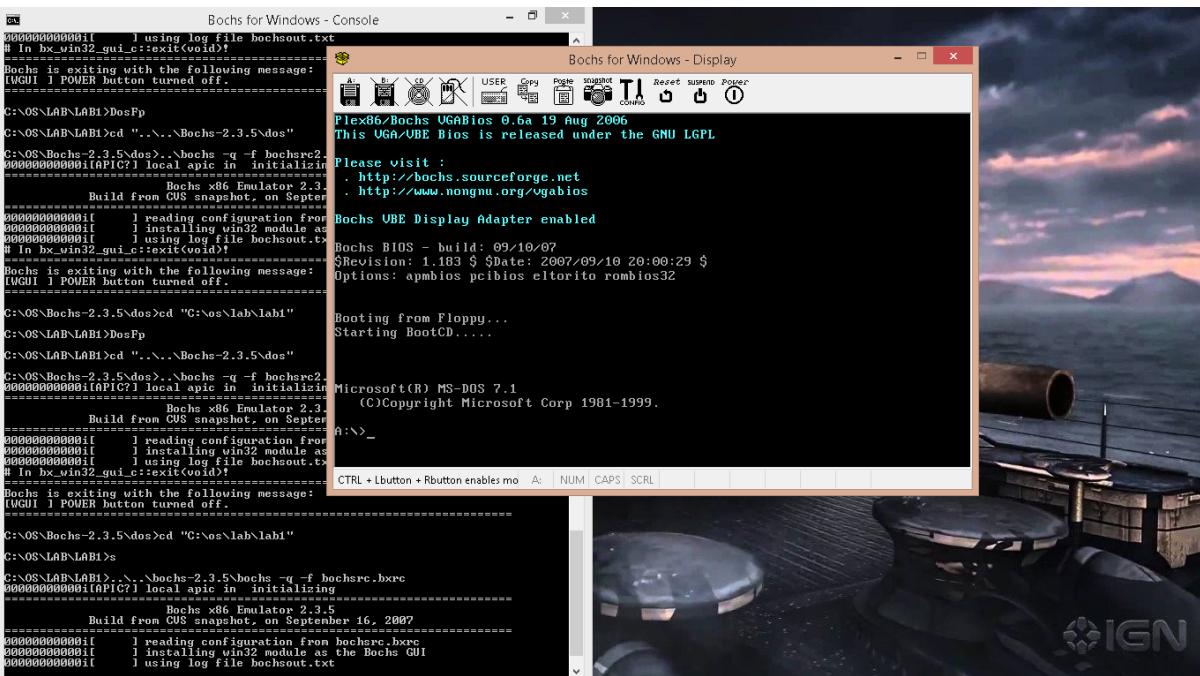
Setalah itu melakukan FORMAT terhadap “floppya.img” agar dapat digunakan, dengan mengetikkan perintah “DosFp”, pada konfigurasi file “floppya.img” terpasang pada “drive B:”, selanjutnyadari prompt “A:>” ketikan “Format B:”ENTER 2X, tutup kembali PC-Simulator dengan mengklik tombol power.



Selanjutnya masukan perintah “s” dan tekan ENTER akan ditampilkan “Bochs for windows - display” yang sedang melakukan booting namun tidak berhasil karna tidak menemukan diskboot. Tutuplah windows tersebut.



Kembali ke “DosFp” dan ketikanlah pada “A:>” perintah “Format B:/S”, selesaikan proses format. Jika sudah selesai, untuk memastikan bahwa floppy pada drive “B:” terisi dengan “system file”, periksa dengan mengetikkan perintah “A:>dir B: ”.



Sekarang matikan PC-Simulator, dan coba lagi mengetikkan perintah “s” dan tekan ENTER. Jika tidak ada kesalahan akan ditampilkan seperti diatas.

Tugas halaman 17

1. ASCII merupakan kepanjangan dari (American Standard Code for Information Interchange), dan pengertian dari ASCII sendiri adalah suatu standar internasional dalam kode huruf dan simbol seperti Hex dan Unicode tetapi ASCII lebih bersifat universal, contohnya 124 adalah untuk karakter "|". Ia selalu digunakan oleh komputer dan alat komunikasi lain untuk menunjukkan teks.

sedangkan fungsi dari kode ASCII ialah digunakan untuk mewakili karakter-karakter angka

maupun huruf didalam komputer, sebagai contoh dapat kita lihat pada karakter 1, 2, 3, A, B, C, dan sebagainya.

Tabel ASCII 8 Bit

Char	ASCII Code	Binary	Char	ASCII Code	Binary
a	097	01100001	A	065	01000001
b	098	01100010	B	066	01000010
c	099	01100011	C	067	01000011
d	100	01100100	D	068	01000100
e	101	01100101	E	069	01000101
f	102	01100110	F	070	01000110
g	103	01100111	G	071	01000111
h	104	01101000	H	072	01001000
i	105	01101001	I	073	01001001
j	106	01101010	J	074	01001010
k	107	01101011	K	075	01001011
l	108	01101100	L	076	01001100
m	109	01101101	M	077	01001101
n	110	01101110	N	078	01001110
o	111	01101111	O	079	01001111
p	112	01110000	P	080	01010000
q	113	01110001	Q	081	01010001
r	114	01110010	R	082	01010010
s	115	01110011	S	083	01010011
t	116	01110100	T	084	01010100
u	117	01110101	U	085	01010101
v	118	01110110	V	086	01010110
w	119	01110111	W	087	01010111
x	120	01111000	X	088	01011000
y	121	01111001	Y	089	01011001
z	122	01111010	Z	090	01011010

2. A. MOV

Perintah MOV adalah perintah untuk mengisi, memindahkan,memperbarui isi suatu register, variable ataupun lokasi memory, Adapun tata penulisan perintah MOV adalah :
MOV [operand A], [Operand B]

Contoh :

MOV AH,02

Operand A adalah Register AH

Operand B adalah bilangan 02

Hal yang dilakukan oleh komputer untuk perintah diatas adalah memasukan 02 ke register AH.

B. INT (Interrupt)

Bila anda pernah belajar BASIC, maka pasti anda tidak asing lagi dengan perintah GOSUB. Perintah INT juga mempunyai cara kerja yang sama dengan GOSUB, hanya saja subroutine yang dipanggil telah disediakan oleh memory komputer yang terdiri 2 jenis yaitu :

- Bios Interrupt (interrupt yang disediakan oleh BIOS (INT 0 – INT 1F))
- Dos Interrupt (Interrupt yang disediakan oleh DOS (INT 1F – keatas))

C. Push

Adalah perintah untuk memasukan isi register pada stack, dengan tata penulisannya:POP [operand 16 bit]

D. Pop

perintah yang berguna untuk mengeluarkan isi dari register/variable dari stack,dengan tata penulisannya adalah : POP [operand 16 bit]

E. RIP (Register IP)

Perintah ini digunakan untuk memberitahu komputer untuk memulai memproses program dari titik tertentu.

F. A (Assembler)

Perintah Assembler berguna untuk tempat menulis program Assembler.

-A100

0FD8:100

G. RCX (Register CX)

Perintah ini digunakan untuk mengetahui dan memperbarui isi register CX yang merupakan tempat penampungan panjang program yang sedang aktif

Modul 2 :

```
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\G4045>CD C:/

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 4A1D-831D

 Directory of C:\OS\LAB\LAB2

22/09/2018  18:10    <DIR>          .
22/09/2018  18:10    <DIR>          ..
21/09/2018  16:23           10.153 bochs.log
15/12/2008  23:18           1.625 bochssrc.bxrc
21/09/2018  16:14           15.917 boot.asm
21/09/2018  16:15             512 boot.bin
16/09/2007  23:22           18.432 bximage.exe
27/02/2007  03:50           342.016 dd.exe
15/12/2008  20:52              78 dosfp.bat
21/09/2018  16:22           1.474.560 floppya.img
19/09/2018  12:09           7.966 kernel.asm
15/12/2008  23:21             228 Makefile
15/12/2008  19:20             44 s.bat
                           11 File(s)   1.871.531 bytes
                           2 Dir(s)   23.412.547.584 bytes free

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

Pertama bukalah CMD lalu pindahkanlah direktori ke “CD:\OS” lalu ketikanlah perintah “setpath”, setelah itu pindahkanlah direktori ke folder “LAB2” yang berada didalam folder “LAB”. Lalu dilanjutkan dengan perintah “dir”.

```
C:\OS\LAB\LAB2>del floppya.img/P
C:\OS\LAB\LAB2\floppya.img, Delete <Y/N>? Y

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]
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>

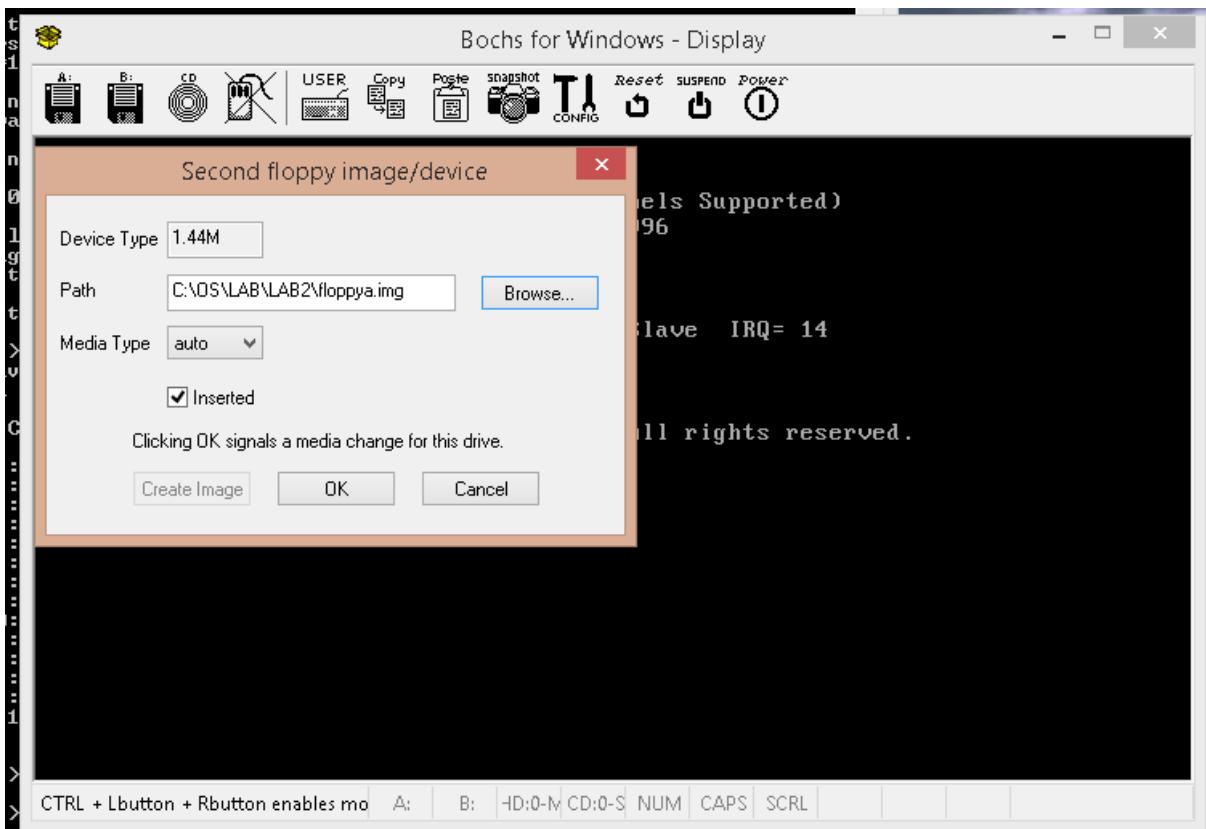
Press any key to continue

C:\OS\LAB\LAB2>dir
Volume in drive C has no label.
Volume Serial Number is 4A1D-831D

Directory of C:\OS\LAB\LAB2

22/09/2018  18:20    <DIR>          .
22/09/2018  18:20    <DIR>          ..
21/09/2018  16:23            10.153 bochs.log
15/12/2008  23:18            1.625 bochsrc.bxrc
21/09/2018  16:14            15.917 boot.asm
21/09/2018  16:15              512 boot.bin
16/09/2007  23:22            18.432 bximage.exe
27/02/2007  03:50            342.016 dd.exe
15/12/2008  20:52              78 dosfp.bat
22/09/2018  18:20            1.474.560 floppya.img
19/09/2018  12:09            7.966 kernel.asm
15/12/2008  23:21              228 Makefile
15/12/2008  19:20              44 s.bat
                           11 File(s)   1.871.531 bytes
                           2 Dir(s)   23.412.523.008 bytes free
```

Setelah itu menyiapkan file “floppya.img”, pertama jika sudah ada file “floppya.img” hapuslah terlebih dahulu file tersebut, jika sudah buatlah yang baru dengan menjalankan “bximage”, dilanjutkan dengan “fd”, “1.44”, dan “floppya.img” ingat namanya harus “floppya.img”, pastikan file tersebut dengan menjalankan perintah “dir”.



Selanjutnya adalah mem-format “floppya.img” dengan menjalankan perintah “dosfp”, lalu pada PC-Simulator klik lah pada gambar disket B, atur lokasi file sehingga menunjukkan ke file “floppya.img” yang berada pada direktori kerja “LAB2”. Lalu klik ‘OK’.

```
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

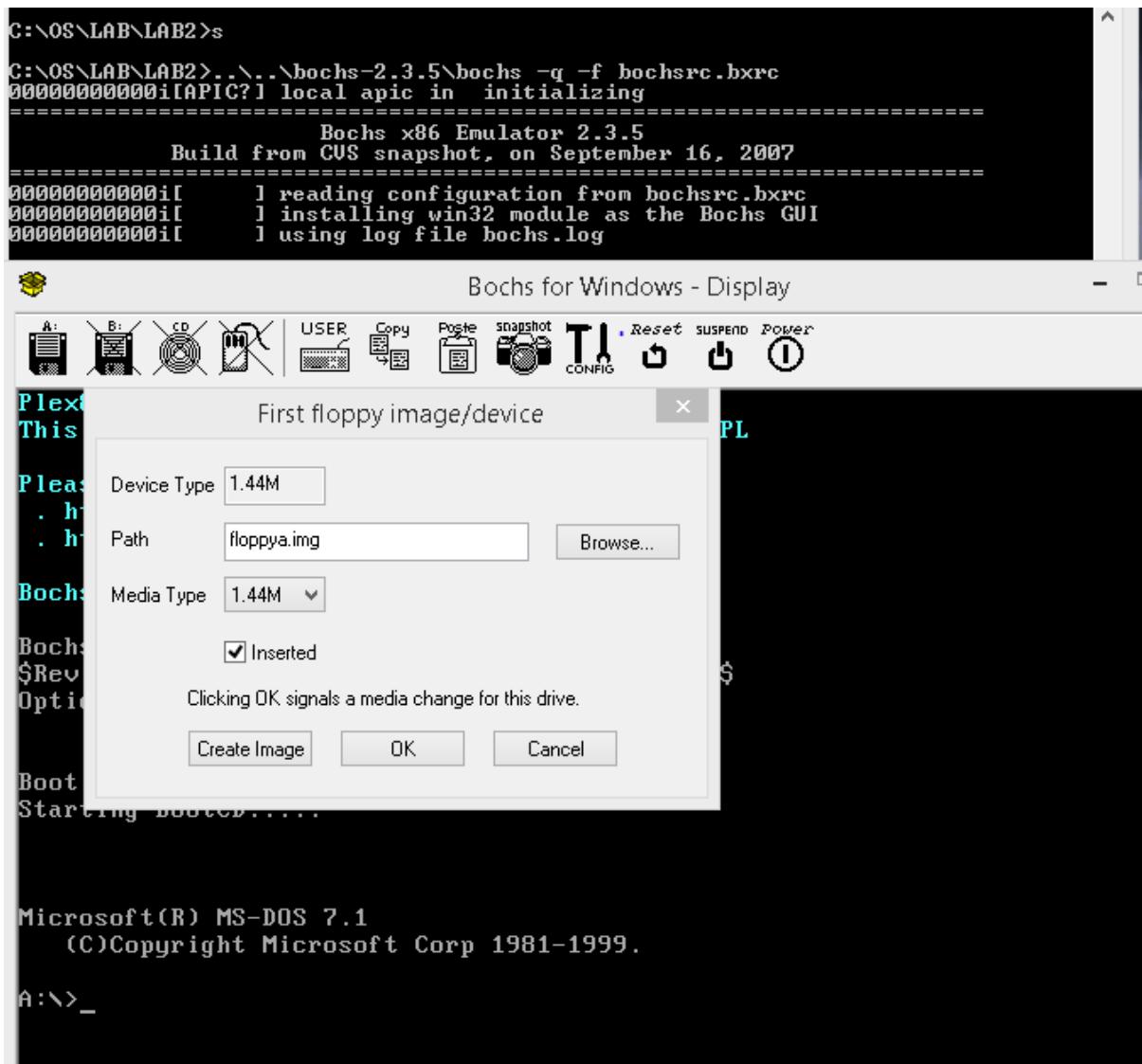
      512 bytes in each allocation unit.
      2,414 allocation units available on disk.

Volume Serial Number is 346D-1A04

Format another (Y/N)?n

A:>
```

Formatlah dengan mengetikan perintah “Format B:/S” selesakan prosesnya, jika sudah matikan PC-Simulator dengan mengklik tombol ‘POWER’.

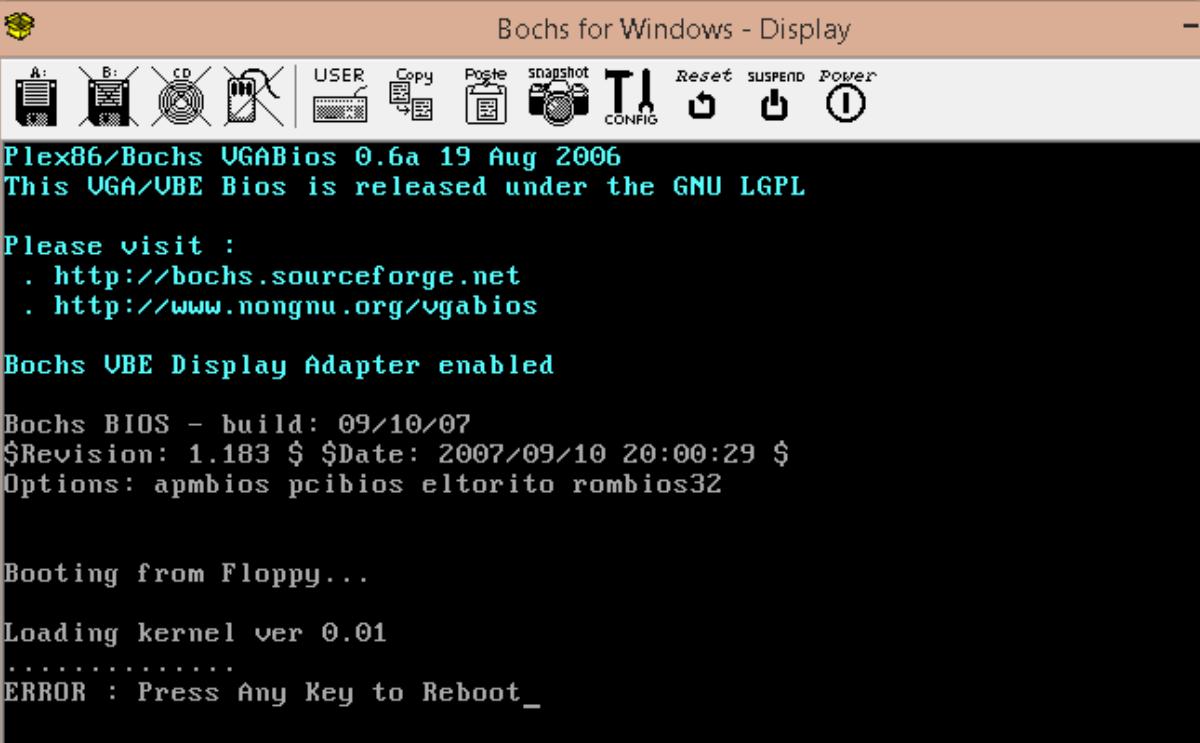


Setelah itu ketikanlah perintah “s”, maka PC-Simulator akan melakukan boot, yang berasal dari file “floppya.img” yang diletakkan pada ‘drive A:’, dan prosesnya akan berjalan lancar. Pastikan dengan mengklik gambar floppy yang tidak disilang. Setelah itu tutuplah PC-Simulator.

```
C:\OS\LAB\LAB2>make fp.disk
nasm boot.asm -o boot.bin -f bin
dd if=boot.bin of=floppya.img
rawrite 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

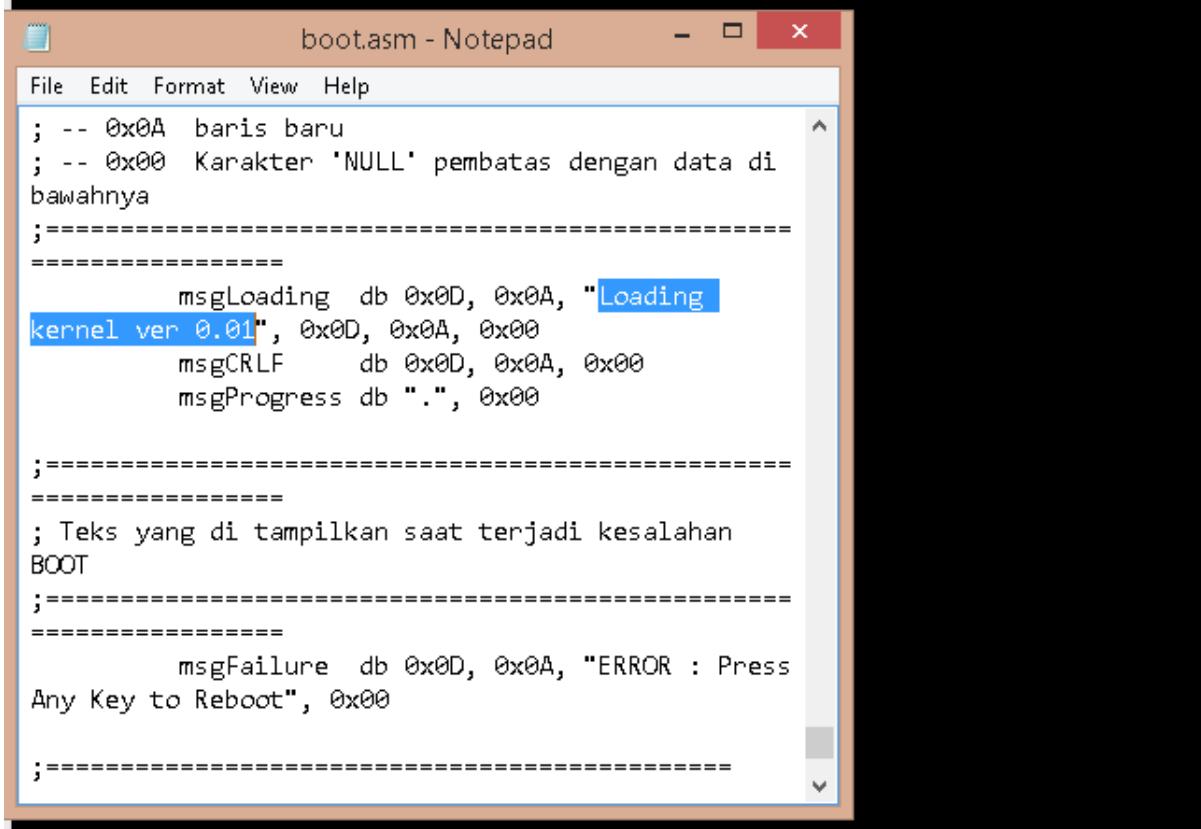
C:\OS\LAB\LAB2>..\..\bochs-2.3.5\bochs -q -f bochsrc.bxrc
000000000000i[APIC?] local apic in initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
000000000000i[      ] reading configuration from bochsrc.bxrc
000000000000i[      ] installing win32 module as the Bochs GUI
000000000000i[      ] using log file bochs.log
```



Setelah itu ketikanlah perintah “make fp.disk”, dan dilanjutkan dengan perintah “s” maka tampilan PC-Simulator akan menjadi seperti diatas.

```
C:\OS\LAB\LAB2>notepad boot.asm
```

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



```
boot.asm - Notepad
File Edit Format View Help
; -- 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

;
=====

; Teks yang di tampilkan saat terjadi kesalahan
BOOT
;
=====

    msgFailure db 0x0D, 0x0A, "ERROR : Press
Any Key to Reboot", 0x00

;
=====
```

Setelah itu ketikan perintah “notepad boot.asm“, lalu akan terbuka window notepad, cari dan editlah kalimat yang diblock menggunakan “CTRL+F” menjadi ‘Belajar membuat BOOTSTRAP-LOADER’, juga ubahlah kalimat “ERROR : Press...” menjadi nama dan NIM lengkap anda. Setelah itu simpanlah perubahannya dengan “CTRL+S”.

```
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 bochssrc.bxrc
000000000000i[APIC?] local apic in initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
000000000000i[ ] reading configuration from bochssrc.bxrc
000000000000i[ ] installing win32 module as the Bochs GUI
000000000000i[ ] using log file bochs.log
Bochs for Windows - Display
```

Plex86/Bochs VGA Bios 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

KURNIA L200170102_

Jika sudah tutup notepad, ketikan kembali “make fp.disk” ENTER, lalu perintah “s”, maka kalimat tadi akan berganti menjadi kalimat yang anda ketikkan.

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

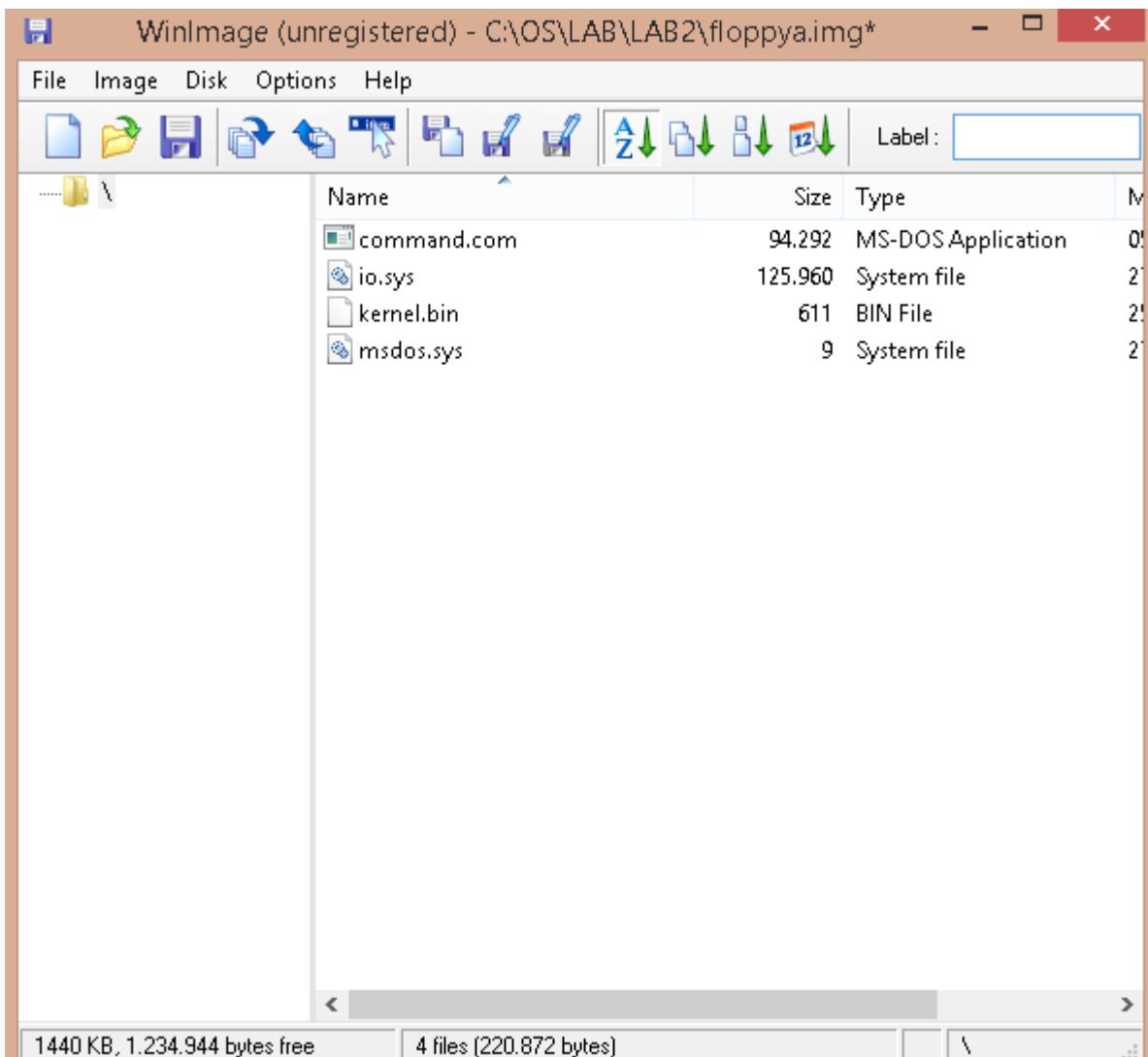
C:\OS\LAB\LAB2>dir
Volume in drive C has no label.
Volume Serial Number is 4A1D-831D

Directory of C:\OS\LAB\LAB2

25/09/2018  19:35    <DIR>          .
25/09/2018  19:35    <DIR>          ..
25/09/2018  19:34            10.153 bochs.log
15/12/2008  23:18            1.625 bochssrc.bxrc
23/09/2018  19:27            15.917 boot.asm
25/09/2018  19:32              512 boot.bin
16/09/2007  23:22            18.432 bximage.exe
27/02/2007  03:50            342.016 dd.exe
15/12/2008  20:52                78 dosfp.bat
25/09/2018  19:32            1.474.560 floppya.img
19/09/2018  12:09            7.966 kernel.asm
25/09/2018  19:35              611 kernel.bin
15/12/2008  23:21              228 Makefile
15/12/2008  19:20                44 s.bat
                           12 File(s)   1.872.142 bytes
                           2 Dir(s)  24.123.478.016 bytes free

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

Setelah itu melakukan proses kompilasi untuk menghasilkan file “KERNEL.BIN”, dengan menjalankan perintah “make kernel”, coba cek dengan menggunakan perintah “dir”, jika tidak ada kesalahan maka akan muncul file “kernel.bin”.



Selanjutnya bukalah ‘winimage’, bukalah direktori kerja “C:\OS\LAB\LAB2”, dan pilihlah file “floppya.img”. untuk memasukan file ‘kernel.bin’, klik menu ‘image|inject’ cari file ‘kernel.bin’ pada direktori kerja dan OK. Selanjutnya lakukan proses penyimpanan ‘File|Save’.

```
C:\OS\LAB\LAB2>s
C:\OS\LAB\LAB2>..\bochs-2.3.5\bochs -q -f bochssrc.bxrc
000000000000i[APIC?] local apic in initializing
=====
          Bochs x86 Emulator 2.3.5
          Build from CVS snapshot, on September 16, 2007
=====
000000000000i[      ] reading configuration from bochssrc.bxrc
000000000000i[      ] installing win32 module as the Bochs GUI
000000000000i[      ] using log file bochs.log

Bochs for Windows - Display
A: B: CD: USER Copy Paste Snapshot T: CONFIG Reset Suspend Power

Plex86/Bochs VGABios 0.6a 19 Aug 2006
This VGA/VBE Bios is released under the GNU GPL

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$>_
```

Setelah itu masukanlah perintah “s” ENTER, dan PC-Simulator akan menampilkan tampilan seperti di screenshot.

```
=====
C:\OS\LAB\LAB2>notepad kernel.asm
C:\OS\LAB\LAB2>

kernel.asm - Notepad
File Edit Format View Help
mov bl, 0x07
int 0x10
ret

_display_prompt:
    mov si, strPrompt
    mov al, 0x01
    int 0x21
    ret

[SEGMENT .data]
    strWelcomeMsg db "Welcome to MY KERNEL Ver 0.01", 0x00
    strPrompt        db "MY KERNEL$>", 0x00
    cmdMaxLen       db 255 ; maksimum COMMAND

    strOsName        db "MY KERNEL", 0x00 ;OS
details
    strMajorVer      db "0", 0x00
    strMinorVer      db ".03", 0x00
```

Editlah dengan menjalankan perintah “notepad kernel.asm” lalu carilah kalimat seperti yang di block, dan gantilah dengan “Belajar membuat KERNEL”, simpanlah perubahan tersebut dan tutup windows notepad tersebut.

```

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 bochssrc.bxrc
000000000000i[APIC?] local apic in initializing
=====
          Bochs x86 Emulator 2.3.5
      Build from CVS snapshot, on September 16, 2007
=====
000000000000i[      ] reading configuration from bochssrc.bxrc
000000000000i[      ] installing win32 module as the Bochs GUI
000000000000i[      ] using log file bochs.log

Bochs for Windows - Display

A: B: CD: | USER Copy Paste Snapshot T: | Reset Suspend Power
CONFIG

Plex86/Bochs VGA/Bios 0.6a 19 Aug 2006
This VGA/VBE Bios is released under the GNU GPL

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
MY KERNEL$>_

```

Selanjutnya ketikan perintah “make kernel”, lalu ulangi langkah memindahkan file kernel.bin dengan menggunakan winimage, setelah itu masukan perintah “s”.

Modul 3 :

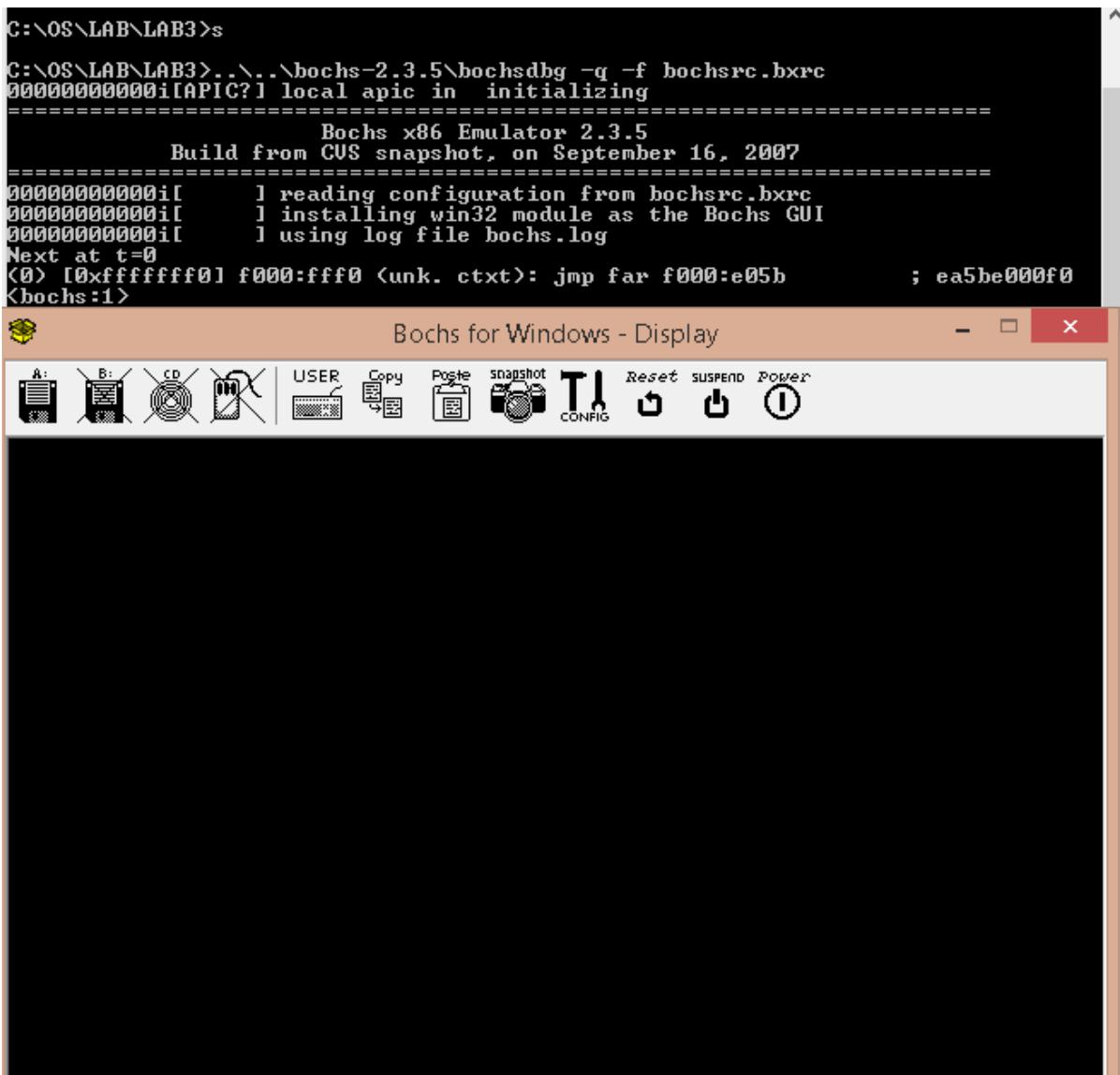
```

Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\G4045>cd C:\
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\lab3
C:\OS\LAB\LAB3>type s.bat
..\..\bochs-2.3.5\bochsdbg -q -f bochssrc.bxrc
C:\OS\LAB\LAB3>

```

Pertama-tama seperti biasa pindahkan direktori kerja ke C, setelah itu masuk ke OS dan setpath, jika sudah masuk lah ke direktori LAB3, lihatlah perintah “type s.bat”.



Mulailah melakukan “debugging” dengan memasukan perintah “s”, maka akan membuka PC-Simulator, dan akan terlihat gelap tidak ada aktifitas, tetapi tidak terjadi kesalahan hanya saja program dihentikan oleh “Bochs”, menunggu masukan dari user.

```
00000000000i[      ] reading configuration from bochssrc.bxrc
00000000000i[      ] installing win32 module as the Bochs GUI
00000000000i[      ] using log file bochs.log
Next at t=0
<0> [0xfffffffff0] f000:ffff0 <unk. ctxt>: jmp far f000:e05b      ; ea5be000f0
<bochs:1> r
rax: 0x00000000:00000000 rcx: 0x00000000:00000000
rdx: 0x00000000:00000f20 rbx: 0x00000000:00000000
rsp: 0x00000000:00000000 rbp: 0x00000000:00000000
rsi: 0x00000000:00000000 rdi: 0x00000000:00000000
r8 : 0x00000000:00000000 r9 : 0x00000000:00000000
r10: 0x00000000:00000000 r11: 0x00000000:00000000
r12: 0x00000000:00000000 r13: 0x00000000:00000000
r14: 0x00000000:00000000 r15: 0x00000000:00000000
rip: 0x00000000:0000ffff
eflags 0x00000002
IOPL=0 id vip vif ac vm rf nt of df if tf sf zf af pf cf
<bochs:2> s
Next at t=1
<0> [0x000fe05b] f000:e05b <unk. ctxt>: xor ax, ax      ; 31c0
<bochs:3>
```

Masuklah ke CMD lagi, ketikanlah perintah “r”, lalu akan muncul tulisan seperti di atas, ‘rip:

0x000000000:0000ffff' adalah lokasi program yang akan dieksekusi pada clock berikutnya. Setelah itu masukan perintah “s”.

The screenshot shows the Bochs for Windows interface. At the top, there is an assembly dump window displaying registers (rax, rcx, rdx, etc.) and memory dump. Below it is a toolbar with icons for floppy disk (A:), hard disk (B:), CD, copy, paste, snapshot, and power management (Reset, Suspend, Power). The main window displays the following text:

```
Plex86/Bochs VGA/Bios 0.6a 19 Aug 2006
This VGA/UVE Bios is released under the GNU GPL

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

Bochs UVE 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...
```

Setelah itu masukan perintah “r” lagi maka akan ditampilkan tampilan seperti diatas, setelah itu masukan perintah “vb 0:0x7C00”, maksud dari perintah tersebut adalah membuat titik pemberhentian pada alamat 0000:7C000, setelah itu masukan perintah “c”, dan lihatlah di PC-Simulator maka tampilannya akan barubah seperti diatas.

```
<bochs:6> s
Next at t=2082129
<0> [0x00007c3e] 0000:7c3e <unk. ctxt>: cli ; fa
<bochs:7> s
Next at t=2082130
<0> [0x00007c3f] 0000:7c3f <unk. ctxt>: mov ax, 0x07c0 ; b8c007
<bochs:8> s
Next at t=2082131
<0> [0x00007c42] 0000:7c42 <unk. ctxt>: mov ds, ax ; 8ed8
<bochs:9> s
Next at t=2082132
<0> [0x00007c44] 0000:7c44 <unk. ctxt>: mov es, ax ; 8ec0
<bochs:10> s
Next at t=2082133
<0> [0x00007c46] 0000:7c46 <unk. ctxt>: mov fs, ax ; 8ee0
<bochs:11> s
Next at t=2082134
<0> [0x00007c48] 0000:7c48 <unk. ctxt>: mov gs, ax ; 8ee8
<bochs:12> s
Next at t=2082135
<0> [0x00007c4a] 0000:7c4a <unk. ctxt>: mov ax, 0x0000 ; b80000
<bochs:13> s
Next at t=2082136
<0> [0x00007c4d] 0000:7c4d <unk. ctxt>: mov ss, ax ; 8ed0
<bochs:14> s
Next at t=2082137
<0> [0x00007c4f] 0000:7c4f <unk. ctxt>: mov sp, 0xffff ; bcffff
<bochs:15> s
Next at t=2082138
<0> [0x00007c52] 0000:7c52 <unk. ctxt>: sti ; fb
<bochs:16>
```

bootasm - Notepad

```
File Edit Format View Help

START:
; Mengatur lokasi kode program pada alamat 7000:0000, dan mengatur
REGISTER SEGMENT
    cli ; matikan aktifitas
interupsi
    mov ax, 0x0700
    mov ds, ax
    mov es, ax
    mov fs, ax
    mov gs, ax

; Mengatur lokasi stack
    mov ax, 0x0000
    mov ss, ax
    mov sp, 0xFFFF ; sp bergerak dari alamat atas ke bawah
    sti ; aktifkan aktifitas
interupsi

; Menampilkan text di layar
```

```

Kbochs:16> c
Bochs for Windows - Display
A: B: CD: USER Copy Paste Snapshot Reset Suspend Power
CONFIG

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

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...

Loading kernel ver 0.01
.....
.....
.

Welcome to MY KERNEL Ver 0.01
MY KERNEL$>_

```

Setelah itu ketikan perintah “s” sebanyak 10 kali,dan cek lah file notepad boot.asm yang ada didalam folder LAB3, pastikan tulisan yang ada dinotepad sama dengan yang ada di CMD. Kemudian untuk melanjutkan prosesnya masukan perintah “c”, maka pada PC-Simulator akan menampilkan tampilan seperti di atas.

```

=====
Bochs is exiting with the following message:
[Win32 GUI] POWER button turned off.
=====
# In bx_win32_gui_c::exit<void>!
C:\OS\LAB\LAB3>s

C:\OS\LAB\LAB3>..\..\bochs-2.3.5\bochsrcdbg -q -f bochssrc.bxrc
000000000000i[APIC?] local apic in initializing
=====
          Bochs x86 Emulator 2.3.5
          Build from CVS snapshot, on September 16, 2007
=====
000000000000i[      ] reading configuration from bochssrc.bxrc
000000000000i[      ] installing win32 module as the Bochs GUI
000000000000i[      ] using log file bochs.log
Next at t=0
<0> [0xffffffff] f000:ffff0 <unk. ctxt>: jmp far f000:e05b      ; ea5be000f0
<bochs:1> vb 0x0100:0x0000
<bochs:2> c
<10717280> Breakpoint 2683448, in 0100:0000 <0x00001000>
Next at t=2945013
<0> [0x00001000] 0100:0000 <unk. ctxt>: mov ax, 0x0100      ; b80001
<bochs:3>

```

Selanjutnya keluarkan PC-Simulator dengan mengetikan “q” di CMD atau menekan tombol power yang ada di PC-Simulator, lalu masukan perintah “s”, kemudian buatlah titik pemberhentian lagi kali ini ketikan “vb 0x100:0x0000”, kemudian masukan perintah “c”.

```

<bochs:3> s
Next at t=2945014
<0> [0x00001003] 0100:0003 <unk. ctxt>: mov ds, ax ; 8ed8
<bochs:4> s
Next at t=2945015
<0> [0x00001005] 0100:0005 <unk. ctxt>: mov es, ax ; 8ec0
<bochs:5> s
Next at t=2945016
<0> [0x00001007] 0100:0007 <unk. ctxt>: cli ; fa
<bochs:6> s
Next at t=2945017
<0> [0x00001008] 0100:0008 <unk. ctxt>: mov ss, ax ; 8ed0
<bochs:7> s
Next at t=2945018
<0> [0x0000100a] 0100:000a <unk. ctxt>: mov sp, 0xffff ; bcffff
<bochs:8> s
Next at t=2945019
<0> [0x0000100d] 0100:000d <unk. ctxt>: sti ; fb
<bochs:9> s
Next at t=2945020
<0> [0x0000100e] 0100:000e <unk. ctxt>: push dx ; 52
<bochs:10> s
Next at t=2945021
<0> [0x0000100f] 0100:000f <unk. ctxt>: push es ; 06
<bochs:11> s
Next at t=2945022
<0> [0x00001010] 0100:0010 <unk. ctxt>: xor ax, ax ; 31c0
<bochs:12> s
Next at t=2945023
<0> [0x00001012] 0100:0012 <unk. ctxt>: mov es, ax ; 8ec0
<bochs:13>

```

kernel.asm - Notepad

```

File Edit Format View Help
;START #####
        mov ax, 0x0100 ;Lokasi memori untuk menempatkan
kernel
        mov ds, ax
        mov es, ax

        cli ;set interrupt OFF
        mov ss, ax ;atur stack segment
        mov sp, 0xFFFF ;atur stack pointer maksimum 64k
        sti ;set interrupt ON

        push dx
        push es
        xor ax, ax
        mov es, ax
        cli
        mov word [es:0x21*4], _int0x21 ; setup interrupt service
        mov [es:0x21*4+2], cs ; untuk menampilkan
karakter di layar
        sti

```

Lakukanlah seperti sebelumnya, yaitu ketikan perintah “s” sebanyak 10x, dan bandingkanlah dengan file kernel.asm yang ada di direktori kerja LAB3.

1.		
No.	Blok Memori	Alokasi Pemakaian
1	F 0 0 0 0	ROM BIOS, Diagnostic, BASIC
2	E 0 0 0 0	ROM program
3	D 0 0 0 0	ROM program
4	C 0 0 0 0	Perluasan BIOS untuk hardisk XT
5	B 0 0 0 0	Monokrom Monitor
6	A 0 0 0 0	Monitor EGA, VGS, dll
7	9 0 0 0 0	Daerah kerja pemakai s/d 640 KB
8	8 0 0 0 0	Daerah kerja pemakai s/d 576 KB
9	7 0 0 0 0	Daerah kerja pemakai s/d 512 KB
10	6 0 0 0 0	Daerah kerja pemakai s/d 448 KB
11	5 0 0 0 0	Daerah kerja pemakai s/d 384 KB
12	4 0 0 0 0	Daerah kerja pemakai s/d 320 KB
13	3 0 0 0 0	Daerah kerja pemakai s/d 256 KB
14	2 0 0 0 0	Daerah kerja pemakai s/d 192 KB
15	1 0 0 0 0	Daerah kerja pemakai s/d 128 KB
16	0 0 0 0 0	Daerah kerja pemakai s/d 64 KB

2. Perbedaan mode kerja “Real Mode” dan “Protected Mode”

- a) **Real Mode:** Real-Mode adalah sebuah modus di mana prosesor Intel x86 berjalan seolah-olah dirinya adalah sebuah prosesor Intel 8085 atau Intel 8088, meski ia merupakan prosesor Intel 80286 atau lebih tinggi. Karenanya, modus ini juga disebut sebagai modus 8086 (8086 Mode). Dalam modus ini, prosesor hanya dapat mengeksekusi instruksi 16-bit saja dengan menggunakan register internal yang berukuran 16-bit, serta hanya dapat mengakses hanya 1024 KB dari memori karena hanya menggunakan 20-bit jalur bus alamat. Semua program DOS berjalan pada modus ini.
- b) **Protected Mode:** Modus terproteksi (protected mode) adalah sebuah modus di mana terdapat proteksi ruang alamat memori yang ditawarkan oleh mikroprosesor untuk digunakan oleh sistem operasi. Modus ini datang dengan mikroprosesor Intel 80286 atau yang lebih tinggi. Karena memiliki proteksi ruang alamat memori, maka dalam modus ini sistem operasi dapat melakukan multitasking.

Modul 4 :

```
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\G4045>ver

Microsoft Windows [Version 6.3.9600]

C:\Users\G4045>
```

Ketikan perintah “ver” untuk mengetahui versi dari command prompt.

```
C:\Users\G4045>cd..  
C:\Users>
```

```
C:\Users>cd..  
C:\>
```

Ketikan “cd..” untuk keluar dari direktori G4045 dan ketikan “cd..” lagi untuk keluar dari direktori Users.

```
C:\>dir  
Volume in drive C has no label.  
Volume Serial Number is 4A1D-831D  
  
Directory of C:\  
  
03/10/2018 18:48 7.524.449 aow_drv.log  
19/12/2015 20:24 <DIR> AppData  
20/11/2017 10:28 <DIR> DRIVERS  
20/03/2018 09:06 <DIR> game  
11/05/2018 21:11 <DIR> inetpub  
19/09/2018 12:35 282.922 LAB2.rar  
10/06/2016 13:33 <DIR> memcards  
20/09/2017 15:23 <DIR> OS  
22/08/2013 22:25 <DIR> PerfLogs  
26/09/2018 18:18 <DIR> Program Files  
21/09/2018 16:19 <DIR> Program Files (x86)  
24/12/2017 19:13 <DIR> Python27  
07/12/2015 00:42 0 Recovery.txt  
27/01/2016 20:05 <DIR> uninst  
09/06/2018 12:49 <DIR> Users  
23/09/2018 19:09 <DIR> Windows  
26/09/2016 00:38 <DIR> XiaoMi  
3 File(s) 7.807.371 bytes  
14 Dir(s) 23.976.013.824 bytes free  
  
C:\>
```

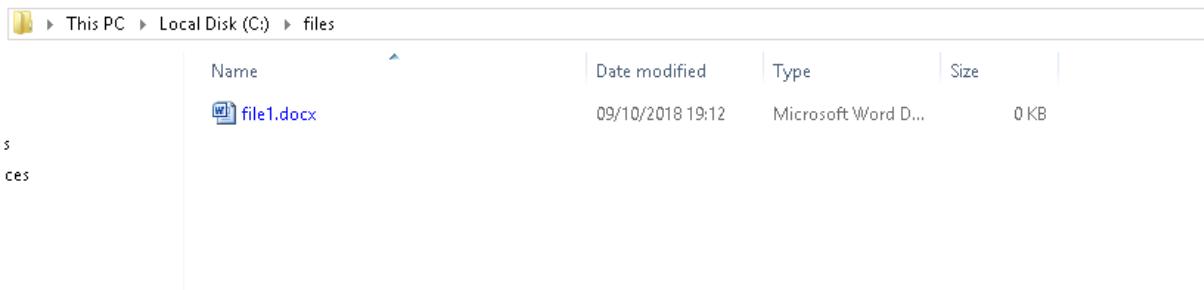
Ketikan perintah “dir” untuk melihat isi direktori yang ada pada drive C. Lalu masuklah ke folder windows dengan “cd windows”. Ketikan “dir/p” untuk menampilkan file perhalaman, “dir/w” untuk menampilkan file secara mendatar, “dir/a” untuk menampilkan semua file terutama yang terhidden.

MERUBAH NAMA FILE :

- c) Masuklah ke direktori C dan buatlah folder bernama “files”.

This PC > Local Disk (C):				
	Name	Date modified	Type	Size
s	\$AV_ASW	27/09/2017 22:43	File folder	
sp	AppData	19/12/2015 20:24	File folder	
loads	DRIVERS	20/11/2017 10:28	File folder	
t places	files	09/10/2018 19:12	File folder	
re	game	20/03/2018 09:06	File folder	
ve	inetpub	11/05/2018 21:11	File folder	
op	memcards	10/06/2016 13:33	File folder	
ments	MSOCache	11/05/2018 20:24	File folder	
loads	OS	20/09/2017 15:23	File folder	
es	PerfLogs	22/08/2013 22:25	File folder	
	Program Files	26/09/2018 18:18	File folder	
	Program Files (x86)	21/09/2018 16:19	File folder	

- d) Kemudian buatlah file word didalam folder baru tersebut bernama “file1”.



Name	Date modified	Type	Size
file1.docx	09/10/2018 19:12	Microsoft Word D...	0 KB

- e) Ulangi langkah seperti diatas hingga sampai ke direktori C, kemudian ketikan perintah “dir”, untuk memastikan ada folder files didalamnya, dan masuklah ke folder tsb.

```
C:\>dir
Volume in drive C has no label.
Volume Serial Number is 4A1D-831D

Directory of C:\

03/10/2018  18:48      7.524.449  aow_drv.log
19/12/2015  20:24      <DIR>    AppData
20/11/2017  10:28      <DIR>    DRIVERS
09/10/2018  19:12      <DIR>    files
20/03/2018  09:06      <DIR>    game
11/05/2018  21:11      <DIR>    inetpub
19/09/2018  12:35      282.922  LAB2.rar
10/06/2016  13:33      <DIR>    memcards
20/09/2017  15:23      <DIR>    OS
22/08/2013  22:25      <DIR>    PerfLogs
26/09/2018  18:18      <DIR>    Program Files
21/09/2018  16:19      <DIR>    Program Files (<x86>)
24/12/2017  19:13      <DIR>    Python27
07/12/2015  00:42      0 Recovery.txt
27/01/2016  20:05      <DIR>    uninist
09/06/2018  12:49      <DIR>    Users
23/09/2018  19:09      <DIR>    Windows
26/09/2016  00:38      <DIR>    XiaoMi
               3 File(s)     7.807.371 bytes
               15 Dir(s)   23.975.960.576 bytes free

C:\>cd files
C:\files>
```

- f) Lalu ketikan perintah “dir” untuk mengetahui isi dari direktori files, dan ketikan perintah “ren file1.docx file.docx” untuk mengubah nama file, dan “rename file.docx file2.docx” untuk mengubah nama. Lalu cek lah menggunakan perintah “dir”, dan cek lewat windows

explorer.

```
C:\files>dir
Volume in drive C has no label.
Volume Serial Number is 4A1D-831D

Directory of C:\files

09/10/2018  19:12    <DIR>          .
09/10/2018  19:12    <DIR>          ..
09/10/2018  19:12                0 file1.docx
              1 File(s)           0 bytes
              2 Dir(s)  23.975.972.864 bytes free

C:\files>ren file1.docx file.docx

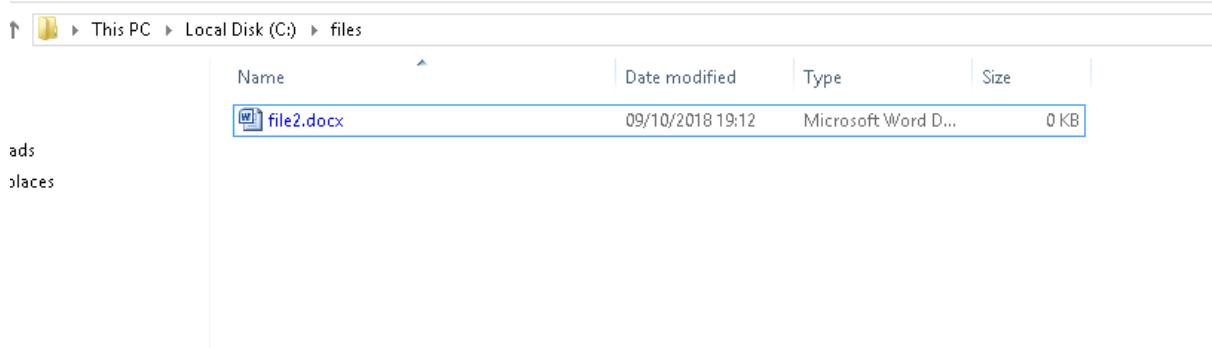
C:\files>rename file.docx file2.docx

C:\files>dir
Volume in drive C has no label.
Volume Serial Number is 4A1D-831D

Directory of C:\files

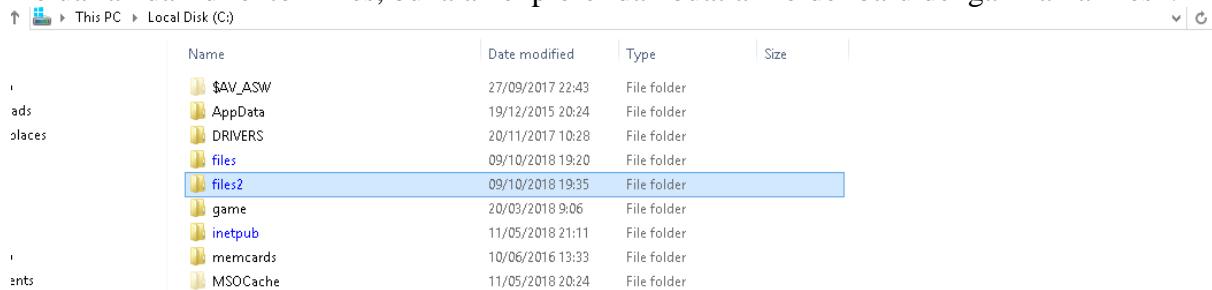
09/10/2018  19:20    <DIR>          .
09/10/2018  19:20    <DIR>          ..
09/10/2018  19:12                0 file2.docx
              1 File(s)           0 bytes
              2 Dir(s)  23.975.936.000 bytes free

C:\files>
```



MENGHAPUS FILE :

1. Keluarlah dari direktori files, bukalah explorer dan buatlah folder baru dengan nama files2.



2. Ketikan perintah “copy C:\files C:\files2” untuk mengcopy isi folder tersebut ke folder files2. Cek lah melalui explorer.

```
C:\files>cd..

C:\>copy C:\files C:\files2
C:\files\file2.docx
      1 file(s) copied.

C:\>
```

This PC > Local Disk (C:) > files2				
	Name	Date modified	Type	Size
ip	file2.docx	09/10/2018 19:12	Microsoft Word D...	0 KB
oads				
:places				
e				
ip				
ents				

3. Masuk ke folder files, dan ketikan perintah “copy C:\files\file2.docx D:\” untuk mengcopy file2.docx ke drive D. Lalu ketikan perintah “D:” untuk pindah ke drive D, dan ketikan perintah dir untuk memastikan file2.docx telah tercopy.

```
C:\>copy C:\files\file2.docx D:\  
1 file(s) copied.  
  
C:\>D:  
  
D:\>dir  
Volume in drive D has no label.  
Volume Serial Number is EC1B-3156  
  
Directory of D:\  
  
21/08/2018 20:06 <DIR> 00.SOING DUT PLHN  
21/08/2018 20:06 <DIR> 2.ARTIS BARU SONG  
09/10/2018 19:12 0 file2.docx  
10/05/2018 21:47 <DIR> GAMBAR  
21/04/2018 18:32 <DIR> GAME  
23/09/2015 11:46 <DIR> MASTER STD  
08/07/2018 16:40 <DIR> MatKul  
22/08/2018 08:29 <DIR> New Folder  
14/04/2018 11:44 <DIR> PPSSPP  
29/09/2018 23:30 68.783 redHat.pptx  
30/05/2018 19:36 <DIR> Videos  
22/08/2018 07:49 <DIR> z MIDI SONG BAKER  
2 File(s) 68.783 bytes  
10 Dir(s) 152.488.419.328 bytes free  
  
D:\>
```

4. Ketikan perintah “C:” untuk kembali ke direktori awal dan “cd..” untuk masuk drive C. Ketikan “del files” untuk menghapus file yang ada pada direktori files kemudian yes.

Ketikan perintah “cd Users” dan “cd G4045”.

```
D:\>c:  
C:\>cd..  
C:\>del files  
C:\files\*, Are you sure (Y/N)? y  
C:\>dir  
Volume in drive C has no label.  
Volume Serial Number is 4A1D-831D  
  
Directory of C:\  
03/10/2018 18:48 7.524.449 aow_drv.log  
19/12/2015 20:24 <DIR> AppData  
20/11/2017 10:28 <DIR> DRIVERS  
09/10/2018 19:48 <DIR> files  
09/10/2018 19:39 <DIR> files2  
20/03/2018 09:06 <DIR> game  
11/05/2018 21:11 <DIR> inetpub  
19/09/2018 12:35 282.922 LAB2.rar  
10/06/2016 13:33 <DIR> memcards  
20/09/2017 15:23 <DIR> OS  
22/08/2013 22:25 <DIR> PerfLogs  
26/09/2018 18:18 <DIR> Program Files  
21/09/2018 16:19 <DIR> Program Files (<x86>)   
24/12/2017 19:13 <DIR> Python27  
07/12/2015 00:42 0 Recovery.txt  
27/01/2016 20:05 <DIR> uninst  
09/06/2018 12:49 <DIR> Users  
23/09/2018 19:09 <DIR> Windows  
26/09/2016 00:38 <DIR> XiaoMi  
3 File(s) 7.807.371 bytes  
16 Dir(s) 23.975.305.216 bytes free  
  
C:\>cd users  
C:\Users>G4045  
'G4045' is not recognized as an internal or external command,  
operable program or batch file.  
  
C:\Users>dir  
Volume in drive C has no label.  
Volume Serial Number is 4A1D-831D  
  
Directory of C:\Users  
09/06/2018 12:49 <DIR> .  
09/06/2018 12:49 <DIR> ..  
09/06/2018 12:49 <DIR> DefaultAppPool  
26/09/2018 19:35 <DIR> G4045  
14/05/2018 20:58 <DIR> Public  
0 File(s) 0 bytes  
5 Dir(s) 23.975.280.640 bytes free  
  
C:\Users>cd G4045
```

5. Kemudian ketikan perintah “xcopy desktop D:baru\ /s/e” untuk mengkopi isi file kemudian membuat folder baru dan meletakan isi copyan ke folder baru di drive D (di screen shot)

terdapat 0 files copied karna tidak ada file di direktori G4045).

```
C:\Users\G4045>xcopy desktop D:\baru\ /s/e
0 File(s) copied

C:\Users\G4045>D:

D:\>dir
Volume in drive D has no label.
Volume Serial Number is EC1B-3156

Directory of D:\

21/08/2018  20:06    <DIR>          00.SOING DUT PLHN
21/08/2018  20:06    <DIR>          2,ARTIS BARU SONG
27/09/2018  01:18    <DIR>          baru
09/10/2018  19:12    <DIR>          0 file2.docx
10/05/2018  21:47    <DIR>          GAMBAR
21/04/2018  18:32    <DIR>          GAME
23/09/2015  11:46    <DIR>          MASTER STD
08/07/2018  16:40    <DIR>          MatKul
22/08/2018  08:29    <DIR>          New Folder
14/04/2018  11:44    <DIR>          PPSSPP
29/09/2018  23:30    <DIR>          68.783 redHat.pptx
30/05/2018  19:36    <DIR>          Videos
22/08/2018  07:49    <DIR>          z MIDI SONG BAKER
              2 File(s)           68.783 bytes
              11 Dir(s)   152.488.419.328 bytes free

D:\>cd baru

D:\baru>dir
Volume in drive D has no label.
Volume Serial Number is EC1B-3156

Directory of D:\baru

27/09/2018  01:18    <DIR>          .
27/09/2018  01:18    <DIR>          ..
              0 File(s)           0 bytes
              2 Dir(s)   152.488.419.328 bytes free

D:\baru>
```

MEMBUAT DAN MENGHAPUS DIREKTORY:

1. Kembalilah ke drive C, dan ketikan perintah “md baru” untuk membuat direktori “baru”.
Dan ketikan perintah “dir” untuk melihat melihat isi direktori file, dan ketikan “rd baru”

untuk menghapus direktori baru, kemudian ceklah dengan perintah “dir”.

```
C:\Users>cd..  
C:\>md baru  
C:\>dir  
Volume in drive C has no label.  
Volume Serial Number is 4A1D-831D  
  
Directory of C:\  
03/10/2018 18:48 7.524.449 aow_drv.log  
19/12/2015 20:24 <DIR> AppData  
09/10/2018 20:04 <DIR> baru  
20/11/2017 10:28 <DIR> DRIVERS  
09/10/2018 19:48 <DIR> files  
09/10/2018 19:39 <DIR> files2  
20/03/2018 09:06 <DIR> game  
11/05/2018 21:11 <DIR> inetpub  
19/09/2018 12:35 282.922 LAB2.rar  
10/06/2016 13:33 <DIR> memcards  
20/09/2017 15:23 <DIR> OS  
22/08/2013 22:25 <DIR> PerfLogs  
26/09/2018 18:18 <DIR> Program Files  
21/09/2018 16:19 <DIR> Program Files (x86)  
24/12/2017 19:13 <DIR> Python27  
07/12/2015 00:42 0 Recovery.txt  
27/01/2016 20:05 <DIR> uninst  
09/06/2018 12:49 <DIR> Users  
23/09/2018 19:09 <DIR> Windows  
26/09/2016 00:38 <DIR> XiaoMi  
3 File(s) 7.807.371 bytes  
17 Dir(s) 23.921.483.776 bytes free  
  
C:\>rd baru  
C:\>dir  
Volume in drive C has no label.  
Volume Serial Number is 4A1D-831D  
  
Directory of C:\  
03/10/2018 18:48 7.524.449 aow_drv.log  
19/12/2015 20:24 <DIR> AppData  
20/11/2017 10:28 <DIR> DRIVERS  
09/10/2018 19:48 <DIR> files  
09/10/2018 19:39 <DIR> files2  
20/03/2018 09:06 <DIR> game  
11/05/2018 21:11 <DIR> inetpub  
19/09/2018 12:35 282.922 LAB2.rar  
10/06/2016 13:33 <DIR> memcards  
20/09/2017 15:23 <DIR> OS  
22/08/2013 22:25 <DIR> PerfLogs  
26/09/2018 18:18 <DIR> Program Files  
21/09/2018 16:19 <DIR> Program Files (x86)  
24/12/2017 19:13 <DIR> Python27  
07/12/2015 00:42 0 Recovery.txt  
27/01/2016 20:05 <DIR> uninst  
09/06/2018 12:49 <DIR> Users  
23/09/2018 19:09 <DIR> Windows  
26/09/2016 00:38 <DIR> XiaoMi  
3 File(s) 7.807.371 bytes
```

2. Sekarang ketikan perintah “mkdir baru1” untuk membuat direktori yang bernama “baru1”, lalu ceklah dengan “dir”, lalu ketikan perintah “rmdir baru1” untuk menghapus direktori

files, dan ketikan perintah “dir” untuk melihat isi direktori files.

3. Ketikan perintah “md \komputer” untuk membuat folder bernama komputer didalam drive C, lalu “dir”, ketikan “md \files\film” untuk membuat folder film dalam folder files, ketikan “cd files” lalu “dir”. Lalu ceklah di explorer.

```
C:\>md \komputer
C:\>dir
 Volume in drive C has no label.
 Volume Serial Number is 4A1D-831D

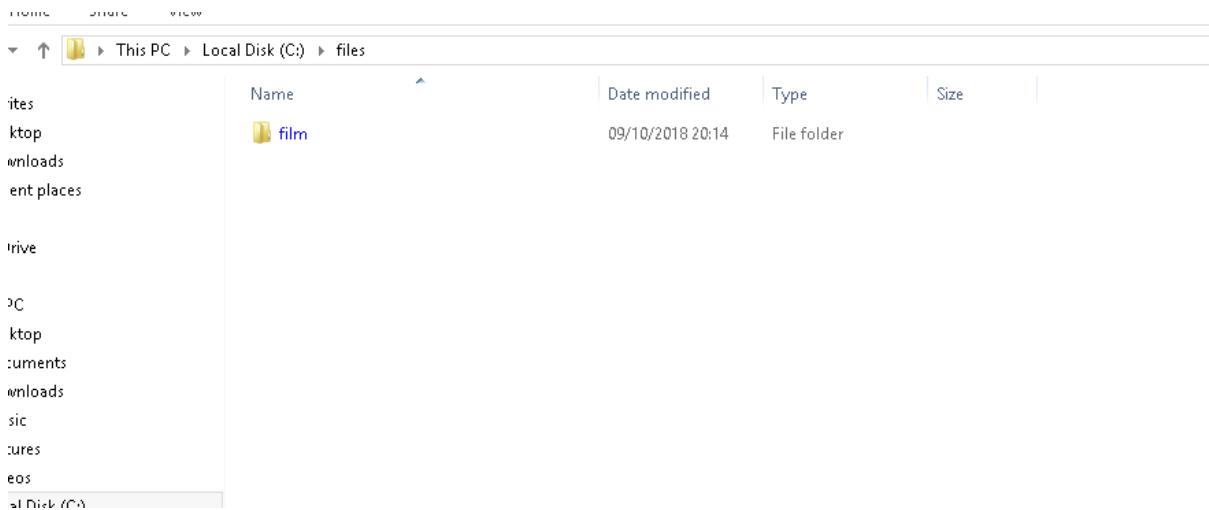
 Directory of C:\

03/10/2018  18:48      7.524.449  aow_drv.log
19/12/2015  20:24      <DIR>      AppData
20/11/2017  10:28      <DIR>      DRIVERS
09/10/2018  19:48      <DIR>      files
09/10/2018  19:39      <DIR>      files2
20/03/2018  09:06      <DIR>      game
11/05/2018  21:11      <DIR>      inetpub
09/10/2018  20:14      <DIR>      komputer
19/09/2018  12:35          282.922  LAB2.rar
10/06/2016  13:33      <DIR>      memcards
20/09/2017  15:23      <DIR>      OS
22/08/2013  22:25      <DIR>      PerfLogs
26/09/2018  18:18      <DIR>      Program Files
21/09/2018  16:19      <DIR>      Program Files (x86)
24/12/2017  19:13      <DIR>      Python27
07/12/2015  00:42          0 Recovery.txt
27/01/2016  20:05      <DIR>      uninst
09/06/2018  12:49      <DIR>      Users
23/09/2018  19:09      <DIR>      Windows
26/09/2016  00:38      <DIR>
            3 File(s)     7.807.371 bytes
           17 Dir(s)   23.878.909.952 bytes free

C:\>md \files\film
C:\>cd files
C:\files>dir
 Volume in drive C has no label.
 Volume Serial Number is 4A1D-831D

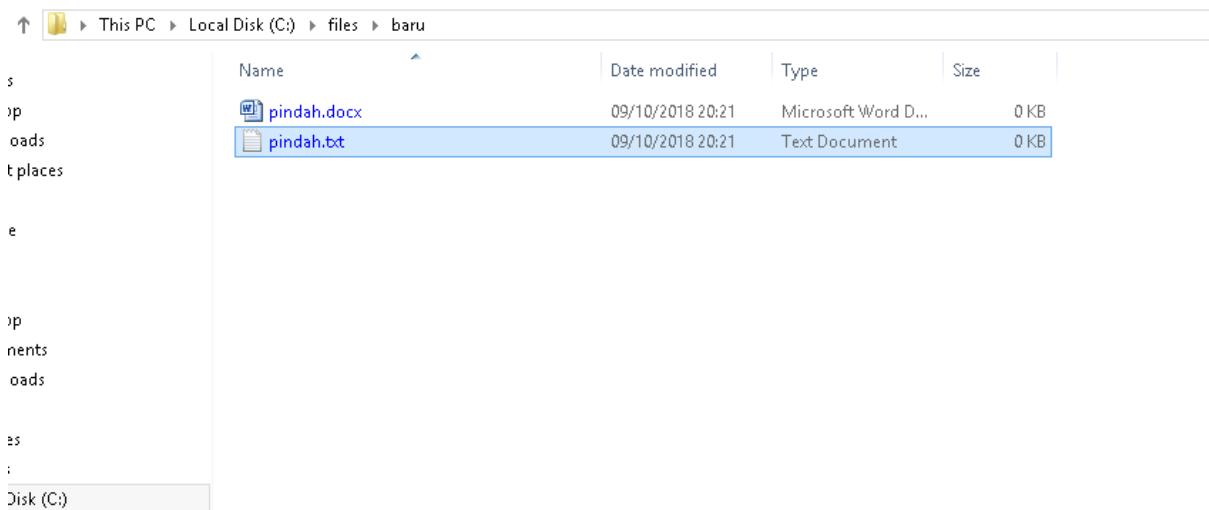
 Directory of C:\files

09/10/2018  20:14      <DIR>      .
09/10/2018  20:14      <DIR>      ..
09/10/2018  20:14      <DIR>      film
            0 File(s)      0 bytes
           3 Dir(s)  23.877.726.208 bytes free
```



MEMINDAHKAN FILE DAN MENAMPILKAN ISI FOLDER SECARA TERSTRUKTUR :

1. Pindah ke drive C bukalah explorer kemudian masuk ke C:\files\baru, buatlah file word dengan nama pindah.docx, dan buatlah file txt dengan nama pindah.txt, lalu masuk cmd ketikan perintah “move c:\files\baru\pindah.docx c:\files2” untuk memindahkan file pindah.docx ke files2, kemudian masukan perintah “move c:\files\baru\pindah.txt c:\files2” untuk memindahkan file pindah.txt ke folder files2.



```
C:\>move c:\files\baru\pindah.docx c:\files2
    1 file(s) moved.

C:\>move c:\files\baru\pindah.txt c:\files2
    1 file(s) moved.
```

2. Ketikan perintah “cd files2” untuk masuk ke direktori files2, dan ketikan “dir”, cek lah melalui explorer, kembalilah ke cmd ketikan “cd..” ketikan “tree c:\files” untuk melihat isi folder secara terstruktur, dan “tree c:\windows” untuk melihat seluruh isi folder windows

secara terstruktur.

```
C:\>cd files2
C:\files2>dir
 Volume in drive C has no label.
 Volume Serial Number is 4A1D-831D

 Directory of C:\files2

09/10/2018  20:27    <DIR>      .
09/10/2018  20:27    <DIR>      ..
09/10/2018  19:12            0 file2.docx
09/10/2018  20:21            0 pindah.docx
09/10/2018  20:21            0 pindah.txt
                           3 File(s)       0 bytes
                           2 Dir(s)  23.856.619.520 bytes free
```

This PC > Local Disk (C:) > files2				
	Name	Date modified	Type	Size
ds	file2.docx	09/10/2018 19:12	Microsoft Word D...	0 KB
laces	pindah.docx	09/10/2018 20:21	Microsoft Word D...	0 KB
	pindah.txt	09/10/2018 20:21	Text Document	0 KB

TUGAS :

```
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\G4045>D:

D:>md Multimedia

D:>copy E:\Pindah.mp3 D:\Multimedia
    1 file(s) copied.

D:>copy D:\GAMBAR\Wallpaper\pindah.jpg D:\Multimedia
    1 file(s) copied.

D:>copy D:\Pindah.txt D:\Multimedia
    1 file(s) copied.

D:>copy D:\file2.docx D:\Multimedia
    1 file(s) copied.

D:>cd Multimedia

D:\Multimedia>dir
Volume in drive D has no label.
Volume Serial Number is EC1B-3156

Directory of D:\Multimedia

09/10/2018  20:47    <DIR>
09/10/2018  20:47    <DIR>
09/10/2018  19:12            0 file2.docx
27/04/2018  19:54        674.697 pindah.jpg
02/06/2018  20:13      8.840.000 Pindah.mp3
09/10/2018  20:36            0 Pindah.txt
                           4 File(s)   9.514.697 bytes
                           2 Dir(s)  152.478.900.224 bytes free

D:\Multimedia>
```

- Pertama buatlah folder atau direktori “Multimedia” di drive D.
- Lalu cari file yang ingin dicopykan.
- **Dan ketikkan perintah “copy ” seperti di atas, tergantung direktori file yang akan dicopy.**

Modul 5 :

Distro Linux :

a. Ubuntu

Ubuntu adalah salah satu distribusi Linux yang berbasiskan pada Debian. Proyek Ubuntu disponsori oleh Canonical Ltd (perusahaan milik Mark Shuttleworth). Nama Ubuntu diambil dari nama sebuah konsep ideologi di Afrika Selatan. “Ubuntu” berasal dari bahasa kuno Afrika, yang berarti “rasa perikemanusian terhadap sesama manusia”.

b. CentOS

CentOS adalah sistem operasi bebas yang didasarkan pada Red Hat Enterprise Linux (RHEL). CentOS singkatan dari Community ENTerprise Operating System (Sistem Operasi Perusahaan buatan Komunitas/Masyarakat).

c. Debian

Debian adalah sistem operasi berbasis kernel Linux. Debian adalah ‘kernel independen’, yaitu sistem operasi Debi dan dikembangkan murni tanpa mendasarkan pada sistem operasi yang telah ada.

d. Slackware

Slackware merupakan sistem operasi yang dibuat oleh Patrick Volkerding dari SlackwareLinux, Inc. Slackware merupakan salah satu distro awal, dan merupakan yang tertua yang masih dikelola. Tujuan utama Slackware adalah stabilitas dan kemudahan desain, serta menjadi distribusiLinux yang paling mirip Unix.

e. Red Hat

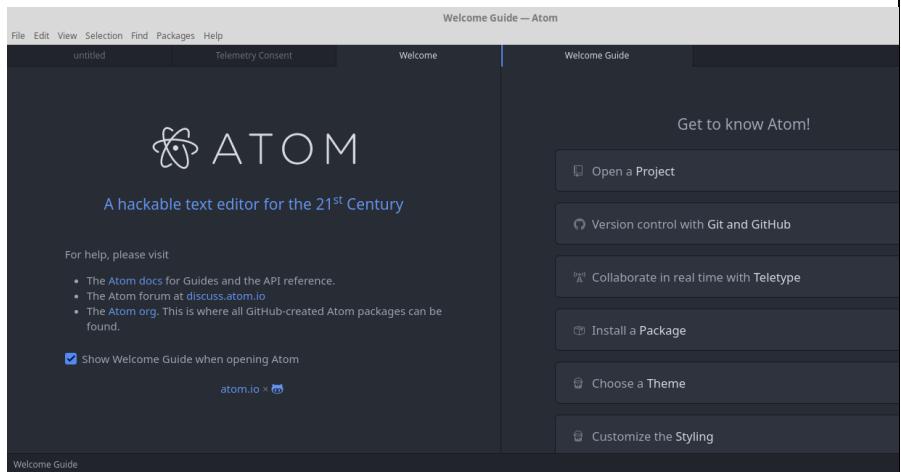
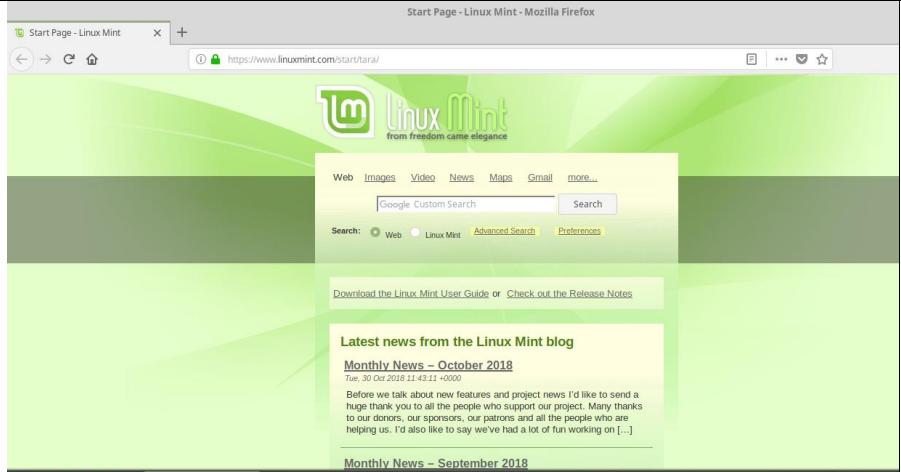
Red hat dikembangkan oleh perusahaan Red Hat Inc, 2003 diganti menjadi Red Hat Enterprise Linux khusus untuk lingkungan perusahaan. Red Hat pertama kali memperkenalkan penggunaan sistem RPM Package Manager.

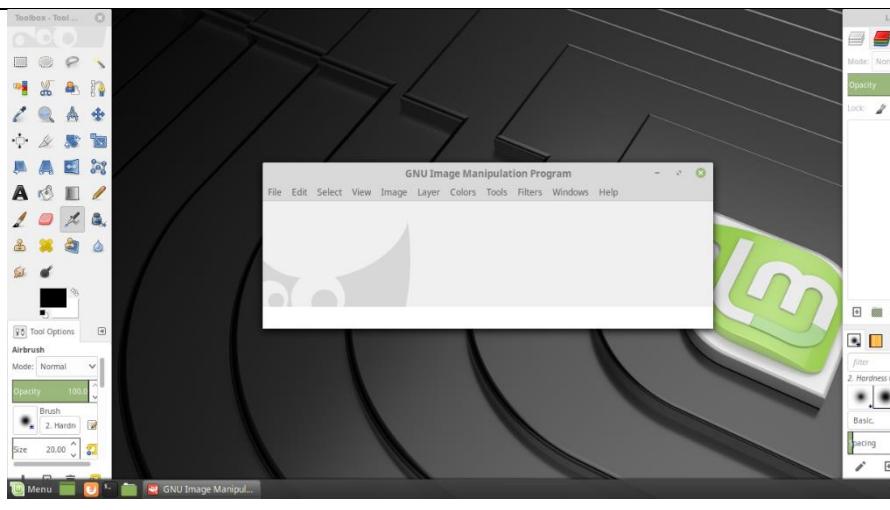
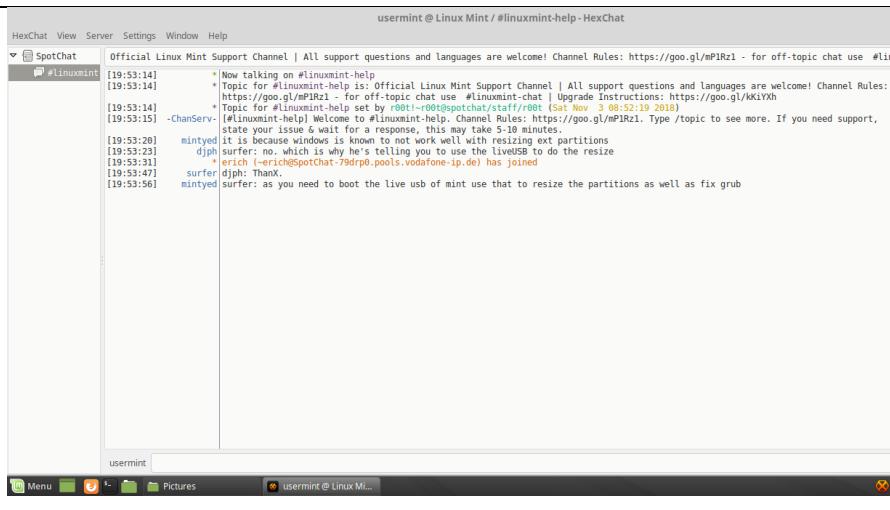
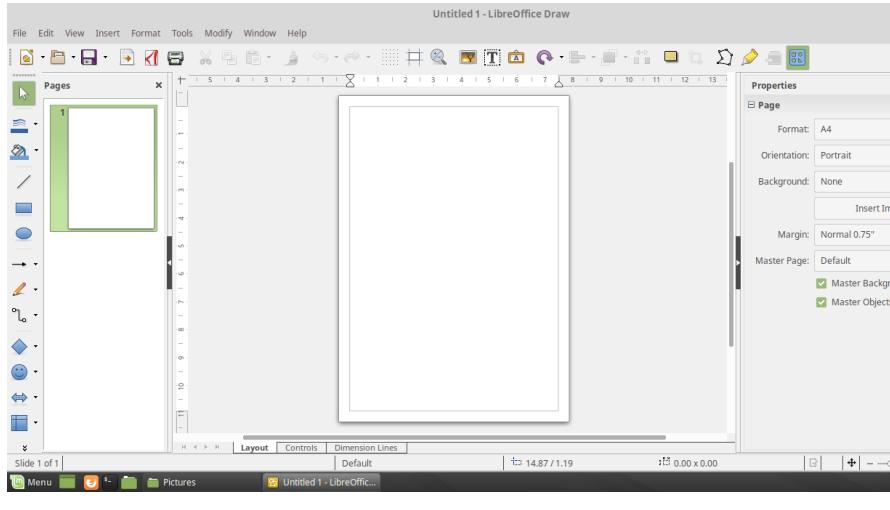
Perintah Dasar :

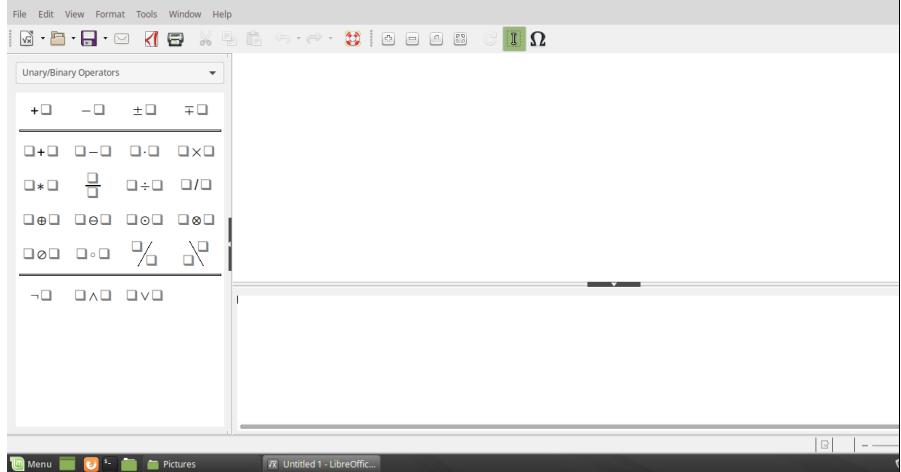
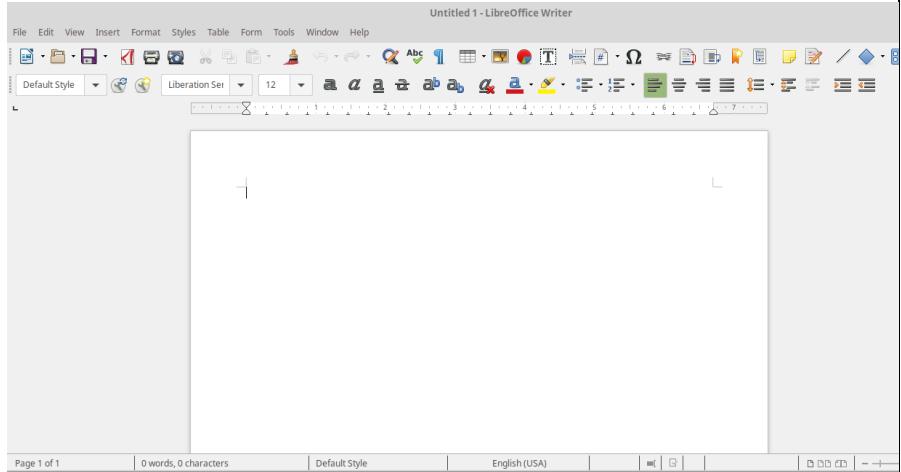
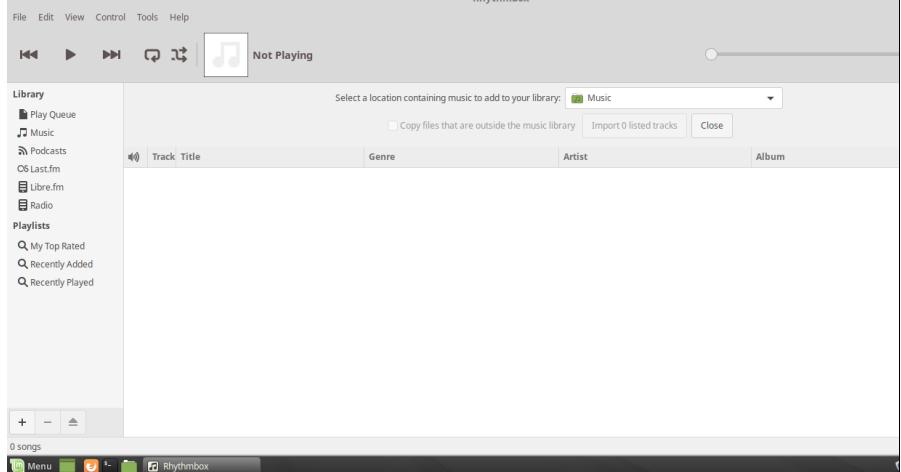
Head	: menampilkan beberapa baris awal pada file teks
Nano	: mengedit isi dari suatu file teks
Wc	: menghitung jumlah baris, kata atau karakter dari sebuah file teks
Man	: menampilkan dokumentasi (manual pages) dari sebuah perintah
Useradd	: membuat user
Chgrp	: merubah kepemilikan direktori/kelompok file
Chmod	: menambah dan mengurangi ijin pemakai untuk mengakses file/direktori
Chown	: merubah user ID
Fg	: mengembalikan suatu proses yang dihentikan sementara agar berjalan kembali di foreground
Find	: mencari letak file
Gzip	: software kompresi zip versi GNU
Halt	: memberitahu kernel supaya mematikan sistem
Hostname	: menampilkan host/domain
Less	: perintah more
Login	: masuk ke sistem dengan memasukan login ID
Logout	: keluar dari sistem
Man	: menampilkan teks/manual page
Mesg	: memberikan ijin user untuk menampilkan pesan dilayar terminal
More	: mempaging hal
Pwd	: menampilkan di direktori
Shutdown	: mematikan sistem
Su	: login sementara sebagai user lain
Talk	: percakapan melalui terminal
init 0	: untuk maintenance, diagnostic hardware, booting
init 1	: single user mode, tambah patches, backup
init 2	: multiuser mode
init 3	: memperluas multiuser mode
init 4	: alternative multiuser
init 5	: shutdown
init 6	: menghentikan OS kemudian reboot dan kembali ke init default yang ada di etc / inittab

Quota : perangkat administrasi sistem untuk membatasi dan memantau pemakaian suatu partisi oleh user atau group

Modul 6 :

N o	Aplikasi	Tampilan	Fungsi
1	Atom		Berfungsi sebagai teks editor.
2	Firefox Web Browser		Sebagai web-browser atau penjelajah web.
3	Gimp		Berfungsi sebagai aplikasi pengolah gambar.

			
4	HexChat		Berfungsi sebagai aplikasi chatting IRC.
5	LibreOffice Draw		Berfungsi untuk membuat dan memanipulasi data gambar digital 2 dimensi.

6	LibreOffice Math		<p>Berfungsi sebagai penyunting rumus atau persamaan pada dokumen teks seperti LibreOffice Writer.</p>
7	LibreOffice Writer		<p>Berfungsi sebagai aplikasi pengolah kata.</p>
8	Rhythmbox		<p>Berfungsi sebagai aplikasi pemutar lagu.</p>
9	Thunderbird		<p>Berfungsi sebagai aplikasi klien surat elektronik.</p>

10	VLC Media Player		Berfungsi sebagai aplikasi pemutar berkas multimedia.

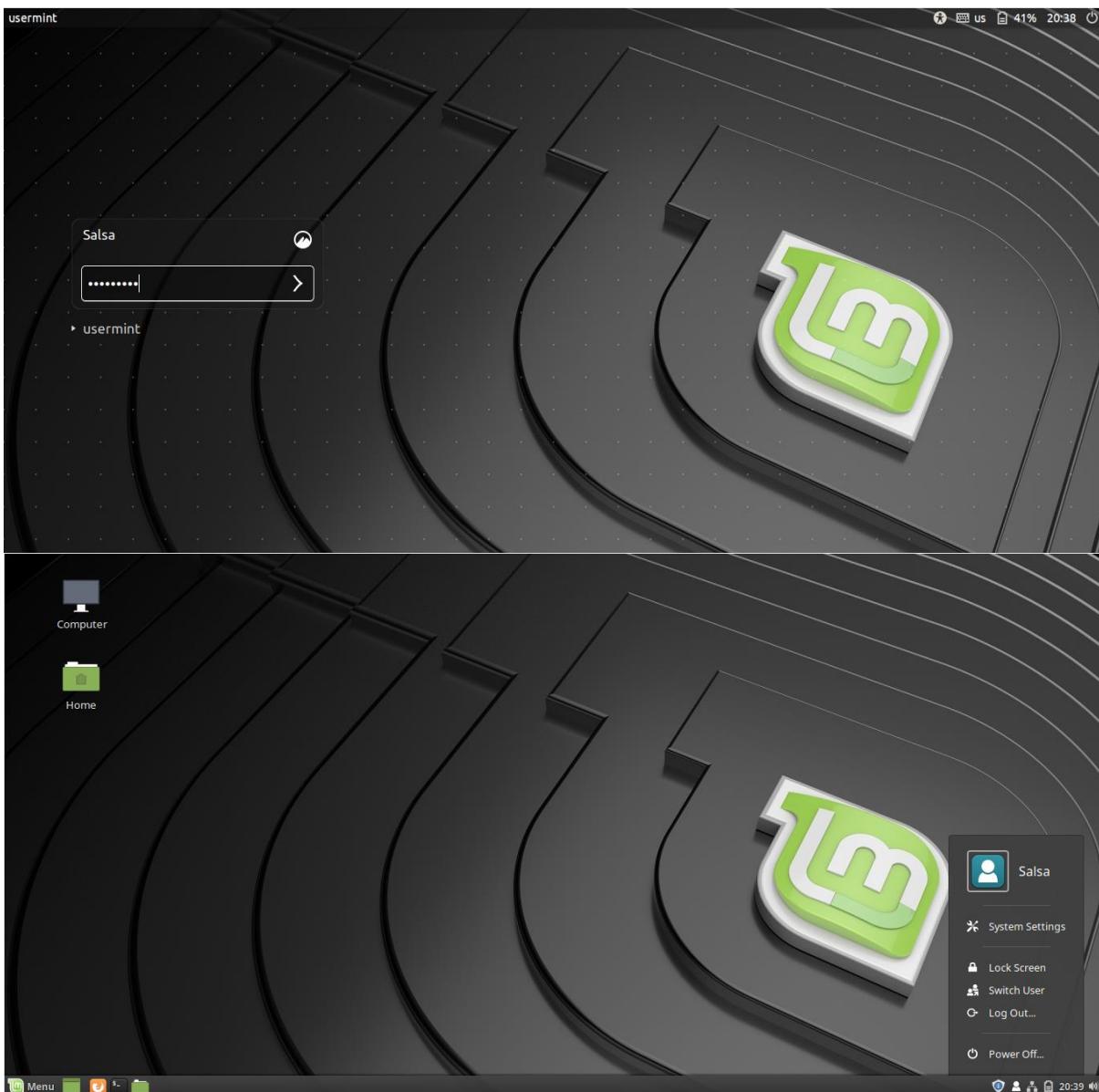
Modul 7 :

Praktikum 1 :

1. Membuat user baru

```
root@usermint:/home/usermint
File Edit View Search Terminal Help
usermint@usermint:~$ sudo su
[sudo] password for usermint:
root@usermint:/home/usermint# adduser userl200170113
Adding user `userl200170113' ...
Adding new group `userl200170113' (1001) ...
Adding new user `userl200170113' (1001) with group `userl200170113' ...
Creating home directory `/home/userl200170113' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for userl200170113
Enter the new value, or press ENTER for the default
    Full Name []: Salsa
    Room Number []: E
    Work Phone []: 081336692257
    Home Phone []:
    Other []:
Is the information correct? [Y/n] Y
root@usermint:/home/usermint#
```

2. Login ke user baru



Praktikum 2:

1. Membuat file baru

```
File Edit View Search Terminal Help
userl200170113@usermint: ~ touch latihan
userl200170113@usermint: ~ chmod 666 latihan
userl200170113@usermint: ~ ls -l
total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
-rw-rw-rw- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint: ~
```

2. Membuat izin akses menjadi read dan write untuk semua pengguna

```
File Edit View Search Terminal Help
userl200170113@usermint: ~ touch latihan
userl200170113@usermint: ~ chmod 666 latihan
userl200170113@usermint: ~ ls -l
total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
-rw-rw-rw- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint: ~ chmod 640 latihan
userl200170113@usermint: ~ ls -l
total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
-rw-r----- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:41 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint: ~
```

3. Membuat izin akses menjadi read, write untuk user dan read untuk group

```
user1200170113@usermint:~
```

File Edit View Search Terminal Help

```
user1200170113@usermint:~$ touch latihan
user1200170113@usermint:~$ chmod 666 latihan
user1200170113@usermint:~$ ls -l
total 32
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Downloads
-rw-rw-rw- 1 user1200170113 user1200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Pictures
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Videos
user1200170113@usermint:~$ chmod 640 latihan
user1200170113@usermint:~$ ls -l
total 32
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Downloads
-rw-r----- 1 user1200170113 user1200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:41 Pictures
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Videos
user1200170113@usermint:~$
```

4. Membuat izin akses menjadi execute untuk semua pengguna

```
File Edit View Search Terminal Help userl200170113@usermint:~  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads  
-rw-rw-rw- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Pictures  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos  
userl200170113@usermint:~$ chmod 640 latihan  
userl200170113@usermint:~$ ls -l  
total 32  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads  
-rw-r----- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:41 Pictures  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos  
userl200170113@usermint:~$ chmod 111 latihan  
userl200170113@usermint:~$ ls -l  
total 32  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads  
-r--r--r-- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:42 Pictures  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates  
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos  
userl200170113@usermint:~$
```

5. Membuat izin akses menjadi write untuk semua pengguna

```
user1200170113@usermint:~
```

File Edit View Search Terminal Help

```
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Downloads
-rw-r----- 1 user1200170113 user1200170113 0 Nov 18 20:39 latihan
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:41 Pictures
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Videos
user1200170113@usermint:~$ chmod 111 latihan
user1200170113@usermint:~$ ls -l
total 32
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Downloads
---x--x-x 1 user1200170113 user1200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:42 Pictures
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Videos
user1200170113@usermint:~$ chmod 222 latihan
user1200170113@usermint:~$ ls -l
total 32
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Downloads
-rw-rw-r-- 1 user1200170113 user1200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:42 Pictures
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 user1200170113 user1200170113 4096 Nov 18 20:39 Videos
user1200170113@usermint:~$ 
```

6. Membuat izin akses menjadi write dan execute untuk semua pengguna

```
File Edit View Search Terminal Help
userl200170113@usermint: ~

drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
---x--x-x 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:42 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint: ~ chmod 222 latihan
userl200170113@usermint: ~ ls -l
total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
drwxr--w- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:42 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint: ~ chmod 333 latihan
userl200170113@usermint: ~ ls -l
total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
drwxr-wx-wx 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:43 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint: ~ ]
```

Praktikum 3

1. Tidak memberikan hak akses

```
userl200170113@usermint:~
```

File Edit View Search Terminal Help

```
userl200170113@usermint:~$ chmod 000 latihan
userl200170113@usermint:~$ ls -l
total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
drwxr-xr-x 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:40 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:43 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint:~$ chmod +r latihan
userl200170113@usermint:~$ ls -l
```

total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
drwxr-xr-x 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:43 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint:~\$

2. Menambah hak akses read

```
userl200170113@usermint:~
```

File Edit View Search Terminal Help

```
userl200170113@usermint:~$ chmod 000 latihan
userl200170113@usermint:~$ ls -l
total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
drwxr-xr-x 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:43 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint:~$ chmod +r latihan
userl200170113@usermint:~$ ls -l
total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
drwxr-xr-x 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:43 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint:~$ 
```

3. Menambahkan hak akses write


```
userl200170113@usermint: ~
File Edit View Search Terminal Help
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
-rw-r--r-- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:47 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint: $ chmod +x latihan
userl200170113@usermint: $ ls -l
total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
-rw-r--r-- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:50 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint: $ chmod -x latihan
userl200170113@usermint: $ ls -l
```

6. Menghilangkan hak akses write

```
userl200170113@usermint: ~
File Edit View Search Terminal Help
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
-rw-r--r-- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:50 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint: $ chmod -x latihan
userl200170113@usermint: $ ls -l
total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
-rw-r--r-- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:50 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint: $ chmod -w latihan
userl200170113@usermint: $ ls -l
```

7. Menghilangkan hak akses read

```
File Edit View Search Terminal Help
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
-rw-r--r-- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:50 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint:~$ chmod -w latihan
userl200170113@usermint:~$ ls -l
total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
-r--r--r-- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:50 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint:~$ ls -l latihan
----- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
userl200170113@usermint:~$ rm latihan
userl200170113@usermint:~$ ls -l latihan
total 32
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Desktop
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Documents
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Downloads
----- 1 userl200170113 userl200170113 0 Nov 18 20:40 latihan
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Music
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:51 Pictures
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Public
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Templates
drwxr-xr-x 2 userl200170113 userl200170113 4096 Nov 18 20:39 Videos
userl200170113@usermint:~$ 
```

Praktikum 4

1. Masuk ke bin

```
File Edit View Search Terminal Help
usermint@usermint:~$ sudo su
[sudo] password for usermint:
root@usermint:/home/usermint# usermod -aG sudo userl200170113
root@usermint:/home/usermint# su userl200170113
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

userl200170113@usermint:/home/usermint$ whoami
userl200170113
userl200170113@usermint:/home/usermint$ cd /bin
userl200170113@usermint:/bin$ sudo su
[sudo] password for userl200170113:
root@usermint:/bin# nano infol200170113.sh
root@usermint:/bin# 
```

2. Membuat file dan sekaligus ketik isi

```
File Edit View Search Terminal Help  
usermint@usermint:~$ sudo su  
[sudo] password for usermint:  
root@usermint:/home/usermint# usermod -aG sudo userl200170113  
root@usermint:/home/usermint# su userl200170113  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
userl200170113@usermint:/home/usermint$ whoami  
userl200170113  
userl200170113@usermint:/home/usermint$ cd /bin  
userl200170113@usermint:/bin$ sudo su  
[sudo] password for userl200170113:  
root@usermint:/bin# nano infol200170113.sh  
root@usermint:/bin# nano infol200170113.sh  
root@usermint:/bin#
```

```
File Edit View Search Terminal Help  
GNU nano 2.9.3 infol200170113.sh  
  
#!/bin/sh  
WAKTU="Tanggal dan jam saat ini: \c"  
JMLUSER="Jumlah user: \c"  
AKU="Status personal: \c"  
echo -e "$WAKTU"  
date  
echo -e "$JMLUSER"  
who | wc -l  
echo -e "$AKU"  
whoami  
exit 0  
  
[ Read 11 lines ]  
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos  
^X Exit ^R Read File ^V Replace ^U Uncut Text ^T To Linter ^L Go To Line
```

3. Masukkan perintah logininfo.sh

The image shows two terminal windows side-by-side. Both windows have a title bar 'root@usermint:/bin' and a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The top window shows a user named 'userl200170113' attempting to gain root privileges by running 'sudo su'. After entering the password, they run the command 'nano infol200170113.sh'. The bottom window shows the same user running the same commands, but when they attempt to execute the script with './infol200170113.sh', they receive a 'Permission denied' error message.

```
usermint@usermint:~$ sudo su
[sudo] password for usermint:
root@usermint:/home/usermint# usermod -aG sudo userl200170113
root@usermint:/home/usermint# su userl200170113
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

userl200170113@usermint:/home/usermint$ whoami
userl200170113
userl200170113@usermint:/home/usermint$ cd /bin
userl200170113@usermint:/bin$ sudo su
[sudo] password for userl200170113:
root@usermint:/bin# nano infol200170113.sh
root@usermint:/bin# nano infol200170113.sh
root@usermint:/bin# infol200170113.sh
```



```
usermint@usermint:~$ sudo su
[sudo] password for usermint:
root@usermint:/home/usermint# usermod -aG sudo userl200170113
root@usermint:/home/usermint# su userl200170113
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

userl200170113@usermint:/home/usermint$ whoami
userl200170113
userl200170113@usermint:/home/usermint$ cd /bin
userl200170113@usermint:/bin$ sudo su
[sudo] password for userl200170113:
root@usermint:/bin# nano infol200170113.sh
root@usermint:/bin# nano infol200170113.sh
root@usermint:/bin# infol200170113.sh
bash: /bin/infol200170113.sh: Permission denied
root@usermint:/bin#
```

5. Ubah hak akses

```
root@usermint:/bin
File Edit View Search Terminal Help
usermint@usermint:~$ sudo su
[sudo] password for usermint:
root@usermint:/home/usermint# usermod -aG sudo userl200170113
root@usermint:/home/usermint# su userl200170113
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

userl200170113@usermint:/home/usermint$ whoami
userl200170113
userl200170113@usermint:/home/usermint$ cd /bin
userl200170113@usermint:/bin$ sudo su
[sudo] password for userl200170113:
root@usermint:/bin# nano infol200170113.sh
root@usermint:/bin# nano infol200170113.sh
root@usermint:/bin# infol200170113.sh
bash: /bin/infol200170113.sh: Permission denied
root@usermint:/bin# chmod 777 infol200170113.sh
root@usermint:/bin#
```

6. Lihat hasilnya

```
root@usermint:/bin
File Edit View Search Terminal Help
usermint@usermint:~$ sudo su
[sudo] password for usermint:
root@usermint:/home/usermint# usermod -aG sudo userl200170113
root@usermint:/home/usermint# su userl200170113
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

userl200170113@usermint:/home/usermint$ whoami
userl200170113
userl200170113@usermint:/home/usermint$ cd /bin
userl200170113@usermint:/bin$ sudo su
[sudo] password for userl200170113:
root@usermint:/bin# nano infol200170113.sh
root@usermint:/bin# nano infol200170113.sh
root@usermint:/bin# infol200170113.sh
bash: /bin/infol200170113.sh: Permission denied
root@usermint:/bin# chmod 777 infol200170113.sh
root@usermint:/bin# infol200170113.sh
-e Tanggal dan jam saat ini: Tue Nov 20 09:27:15 WIB 2018
-e Jumlah user: 2
-e Status personal: root
root@usermint:/bin#
```

Modul 8 :

Fork.c

The screenshot shows a Linux Mint 19 desktop environment with a terminal window open. The terminal window title is "root@usermint: /home/usermint". The window contains the source code for a C program named "fork.c". The code includes headers for stdio.h, stdlib.h, unistd.h, and sys/types.h. It defines a main function that initializes a variable x to 5, creates a child process using fork(), and prints the process IDs and x value of both the child and parent processes. The terminal window has a toolbar at the bottom with various text editing commands like Get Help, Write Out, Read File, Where Is, Replace, Cut Text, Uncut Text, Justify, To Spell, Cur Pos, Go To Line, Undo, Redo, Mark Text, To Bracket, Previous, Copy Text, WhereIs, Next, and a status bar showing the current user (root) and terminal path (/home/usermint).

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/types.h>

int main(){
    pid_t pid;
    int x = 5;
    x++;
    if(pid < 0){
        printf("Process creation error");exit(-1);
    }
    else if(pid == 0){
        printf("\nProcess id is %d", getpid());
        printf("\nValue of x is %d", x);
        printf("\nProcess id of parent is %d\n\n", getppid());
    }
    else{
        printf("Parent process:");
        printf("\nProcess id is %d", getpid());
        printf("\nValue of x is %d", x);
        printf("\nProcess id of parent is %d\n\n", getppid());
    }
}
```

The screenshot shows a Linux Mint 19 desktop environment with a terminal window open. The terminal window title is "root@usermint: /home/usermint". The window displays the output of the command "nano fork.c", which shows the source code of the program. Below that, it shows the command "gcc fork.c -o fork" being run twice, and finally the command "fork" being run, which outputs "[1]+ Stopped nano fork.c". The terminal window has a toolbar at the bottom with various text editing commands like Get Help, Write Out, Read File, Where Is, Replace, Cut Text, Uncut Text, Justify, To Spell, Cur Pos, Go To Line, Undo, Redo, Mark Text, To Bracket, Previous, Copy Text, WhereIs, Next, and a status bar showing the current user (root) and terminal path (/home/usermint).

```
root@usermint:/home/usermint# nano fork.c
Use "fg" to return to nano.

[1]+  Stopped                  nano fork.c
root@usermint:/home/usermint# nano fork.c
root@usermint:/home/usermint# gcc fork.c -o fork
root@usermint:/home/usermint# gcc fork.c -o fork
root@usermint:/home/usermint# fork
root@usermint:/home/usermint#
```

LinuxMint19 [Running] - Oracle VM VirtualBox

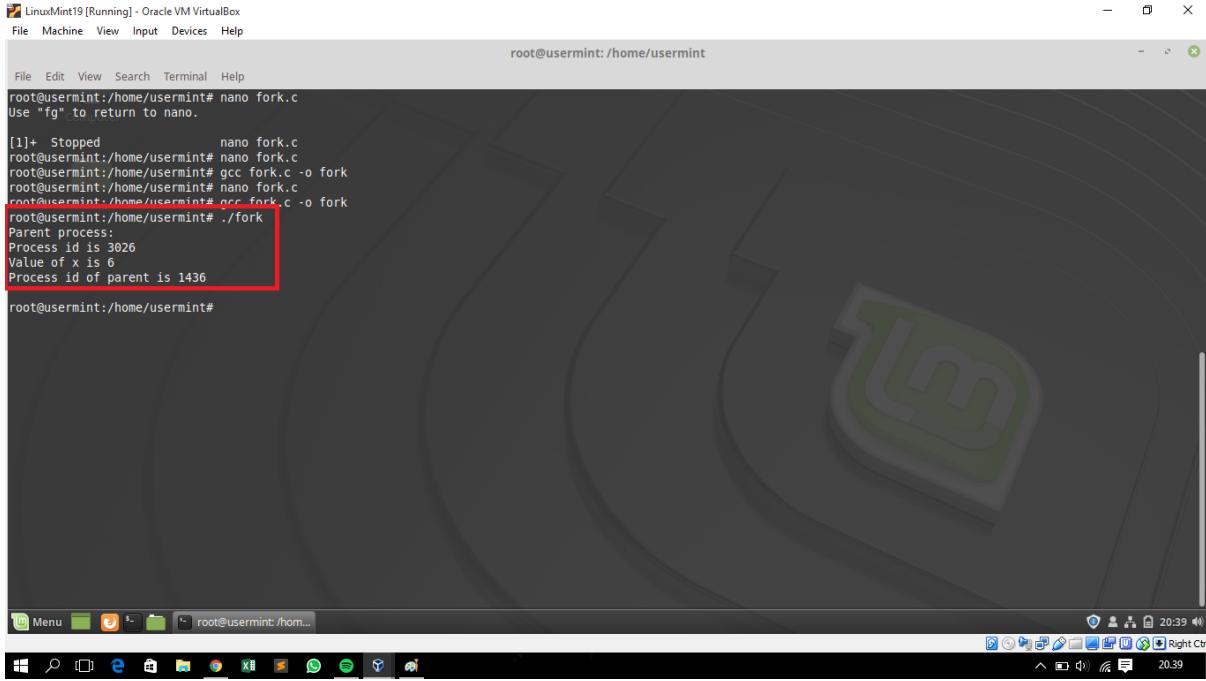
File Machine View Input Devices Help

root@usermint:/home/usermint# nano fork.c

Use "fg" to return to nano.

```
[1]+ Stopped nano fork.c
root@usermint:/home/usermint# nano fork.c
root@usermint:/home/usermint# gcc fork.c -o fork
root@usermint:/home/usermint# nano fork.c
root@usermint:/home/usermint# gcc fork.c -o fork
root@usermint:/home/usermint# ./fork
Parent process:
Process id is 3026
Value of x is 6
Process id of parent is 1436
```

root@usermint:/home/usermint#



Wait.c

LinuxMint19 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

root@usermint:/home/usermint

File Edit View Search Terminal Help

GNU nano 2.9.3

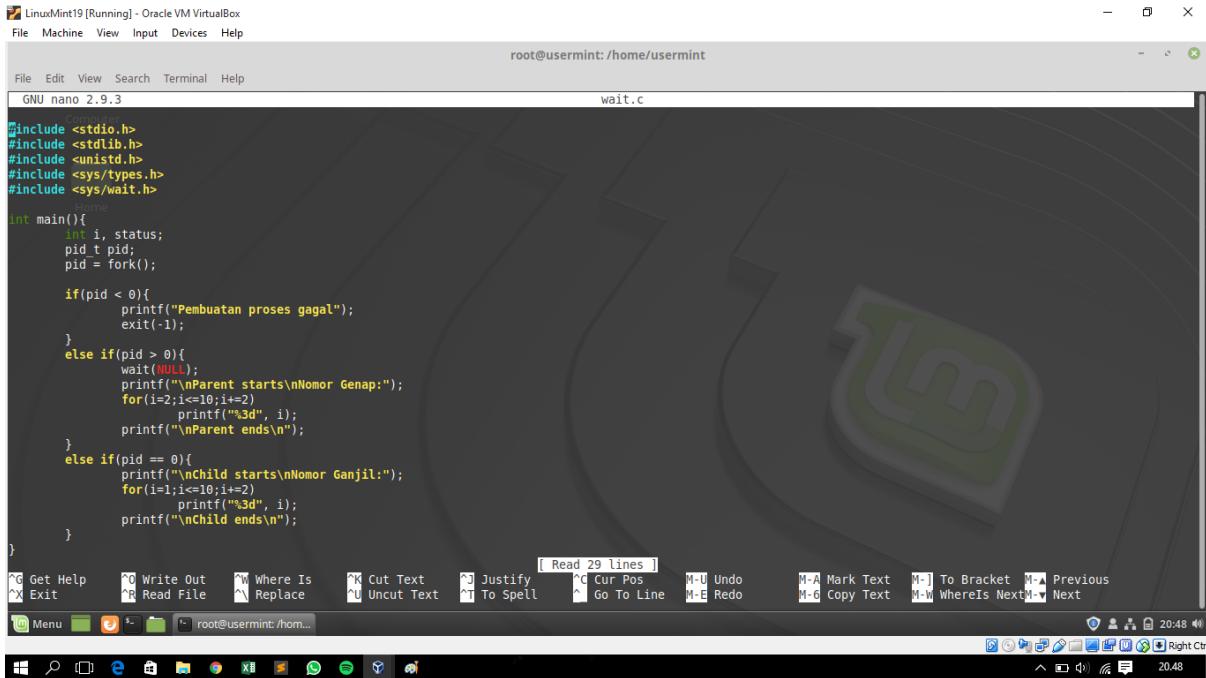
```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/types.h>
#include <sys/wait.h>

int main(){
    int i, status;
    pid_t pid;
    pid = fork();

    if(pid < 0){
        printf("Pembuatan proses gagal");
        exit(-1);
    }
    else if(pid > 0){
        wait(NULL);
        printf("\nParent starts\nNomor Genap:");
        for(i=2;i<10;i+=2)
            printf("%d", i);
        printf("\nParent ends\n");
    }
    else if(pid == 0){
        printf("\nChild starts\nNomor Ganjil:");
        for(i=1;i<10;i+=2)
            printf("%d", i);
        printf("\nChild ends\n");
    }
}
```

[Read 29 lines]

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos M-U Undo M-A Mark Text M-] To Bracket M-▲ Previous
^X Exit ^R Read File ^H Replace ^U Uncut Text ^T To Spell ^G Go To Line M-E Redo M-B Copy Text M-W WhereIs Next M-▼ Next



```
LinuxMint19 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
File Edit View Search Terminal Help
root@usermint:/home/usermint#
root@usermint:/home/usermint# nano fork.c
Use "fg" to return to nano.

[1]+ Stopped nano fork.c
root@usermint:/home/usermint# nano fork.c
root@usermint:/home/usermint# gcc fork.c -o fork
root@usermint:/home/usermint# nano fork.c
root@usermint:/home/usermint# gcc fork.c -o fork
root@usermint:/home/usermint# ./fork
Parent process:
Process id is 3026
Value of x is 6
Process id of parent is 1436

root@usermint:/home/usermint# nano wait.c
root@usermint:/home/usermint# gcc wait.c -o wait
wait.c:3:10: fatal error: unistd.h: No such file or directory
 #include <unistd.h>
 ^
compilation terminated.
root@usermint:/home/usermint# nano wait.c
root@usermint:/home/usermint# nano wait.c
root@usermint:/home/usermint# gcc wait.c -o wait
wait.c: In function 'main':
wait.c:16:10: error: 'p' undeclared (first use in this function)
 else if(p > 0){
^
wait.c:16:10: note: each undeclared identifier is reported only once for each function it appears in
root@usermint:/home/usermint# nano wait.c
root@usermint:/home/usermint# gcc wait.c -o wait
root@usermint:/home/usermint# nano wait.c
root@usermint:/home/usermint# gcc wait.c -o wait
root@usermint:/home/usermint# ./wait
root@usermint:/home/usermint#
```

```
LinuxMint19 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
File Edit View Search Terminal Help
root@usermint:/home/usermint#
root@usermint:/home/usermint# ./fork
Parent process:
Process id is 3026
Value of x is 6
Process id of parent is 1436

root@usermint:/home/usermint# nano wait.c
root@usermint:/home/usermint# gcc wait.c -o wait
wait.c:3:10: fatal error: unistd.h: No such file or directory
 #include <unistd.h>
 ^
compilation terminated.
root@usermint:/home/usermint# nano wait.c
root@usermint:/home/usermint# nano wait.c
root@usermint:/home/usermint# gcc wait.c -o wait
wait.c: In function 'main':
wait.c:16:10: error: 'p' undeclared (first use in this function)
 else if(p > 0){
^
wait.c:16:10: note: each undeclared identifier is reported only once for each function it appears in
root@usermint:/home/usermint# nano wait.c
root@usermint:/home/usermint# gcc wait.c -o wait
root@usermint:/home/usermint# nano wait.c
root@usermint:/home/usermint# gcc wait.c -o wait
root@usermint:/home/usermint# ./wait
root@usermint:/home/usermint#
```

Child starts
Nomor Ganjal: 1 3 5 7 9
Child ends

Parent starts
Nomor Ganap: 2 4 6 8 10
Parent ends

Exec.c

LinuxMint19 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

root@usermint:/home/usermint

File Edit View Search Terminal Help

GNU nano 2.9.3 exec.c

```
#include <stdio.h>
#include <sys/types.h>
#include <unistd.h>
#include <stdlib.h>
#include <sys/wait.h>

int main(int argc, char*argv[]){
    pid_t pid;
    int i;

    if(argc != 3){
        printf("\nInsufficient arguments to load program");
        printf("\nUsage: ./a.out <path> <cmd>\n");
        exit(-1);
    }

    switch(pid = fork())
    {
        case -1:
            printf("Fork failed");
            exit(-1);
        case 0:
            printf("Child process\n");
            i = exec(argv[1], argv[2], NULL);
            if (i < 0){
                printf("%s program not loaded using exec system call\n", argv[2]);
                exit(-1);
            }
        default:
            wait(NULL);
    }
}
```

[Read 34 lines]

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Menu root@usermint:/hom... 21:47 Right Ctrl

LinuxMint19 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

root@usermint:/home/usermint

File Edit View Search Terminal Help

GNU nano 2.9.3 exec.c

```
Computer
switch(pid = fork())
{
    case -1:
        printf("Fork failed");
        exit(-1);
    case 0:
        printf("Child process\n");
        i = exec(argv[1], argv[2], NULL);
        if (i < 0){
            printf("%s program not loaded using exec system call\n", argv[2]);
            exit(-1);
        }
    default:
        wait(NULL);
        printf("Child Terminated\n");
        exit(0);
}
```

[Read 34 lines]

Get Help Write Out Where Is Cut Text Justify Cur Pos Undo Mark Text To Bracket Previous
Exit Read File Replace Uncut Text To Spell Go To Line Redo Copy Text WhereIs Next Next

Menu root@usermint:/hom... 21:50 Right Ctrl

```
usermint@usermint:~$ sudo su
[sudo] password for usermint:
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# gcc exec.c -o exec
root@usermint:/home/usermint#
```

```
usermint@usermint:~$ sudo su
[sudo] password for usermint:
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# gcc exec.c -o exec
root@usermint:/home/usermint# ./a.out /bin/ls ls
Child process
a.out  Desktop  dirlist.c  Downloads  exec.c  fork.c    Music    Public  stat.c  Videos  wait.c
coba.c  dirlist  Documents  exec    fork   fork.c.save  Pictures  stat   Templates  wait
Child Terminated
```

Stat.c

LinuxMint19 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

root@usermint: /home/usermint

File Edit View Search Terminal Help

GNU nano 2.9.3 stat.c

```
#include <stdio.h>
#include <sys/stat.h>
#include <stdlib.h>
#include <time.h>

int main(int argc, char*argv[]){
    struct stat
    file; int n;
    if(argc!=2){
        printf("Usage: ./a.out <filename>\n");
        exit(-1);
    }
    if ((n = stat(argv[1], &file)) == -1)
    {
        perror(argv[1]);
        exit(-1);
    }
    printf("User id: %d\n", file.st_uid);
    printf("Group id: %d\n", file.st_gid);
    printf("Block size: %ld\n", file.st_blksize);
    printf("Blocks Allocated: %ld\n", file.st_blocks);
    printf("Inode no.: %ld\n", file.st_ino);
    printf("Last Access: %s", ctime(&(file.st_atime)));
    printf("Last Modified: %s", ctime(&(file.st_mtime)));
    printf("File size: %ld bytes\n", file.st_size);
    printf("No. of links: %d\n", file.st_nlink);
    printf("Permission");
    printf( (S_ISDIR(file.st_mode)) ? "d" : "-");
    printf( (file.st_mode & S_IRUSR) ? "r" : "-");
    printf( (file.st_mode & S_IWUSR) ? "w" : "-");
    printf( (file.st_mode & S_IXUSR) ? "x" : "-");
    printf( (file.st_mode & S_IRGRP) ? "r" : "-");
    printf( (file.st_mode & S_IWGRP) ? "w" : "-");
    printf( (file.st_mode & S_IXGRP) ? "x" : "-");
    printf( (file.st_mode & S_IROTH) ? "r" : "-");
    printf( (file.st_mode & S_IWOTH) ? "w" : "-");
    printf( (file.st_mode & S_IXOTH) ? "x" : "-");
    printf("\n");
    if(file.st_mode & S_IFREG)
        printf("File type: Regular\n");
    if(file.st_mode & S_IFDIR)
        printf("File type: Directory\n");
}
```

[Read 43 lines]

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LinuxMint19 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

root@usermint: /home/usermint

File Edit View Search Terminal Help

GNU nano 2.9.3 stat.c

```
Computer exit(-1);
{
    printf("User id: %d\n", file.st_uid);
    printf("Group id: %d\n", file.st_gid);
    printf("Block size: %ld\n", file.st_blksize);
    printf("Blocks Allocated: %ld\n", file.st_blocks);
    printf("Inode no.: %ld\n", file.st_ino);
    printf("Last Access: %s", ctime(&(file.st_atime)));
    printf("Last Modified: %s", ctime(&(file.st_mtime)));
    printf("File size: %ld bytes\n", file.st_size);
    printf("No. of links: %d\n", file.st_nlink);
    printf("Permission");
    printf( (S_ISDIR(file.st_mode)) ? "d" : "-");
    printf( (file.st_mode & S_IRUSR) ? "r" : "-");
    printf( (file.st_mode & S_IWUSR) ? "w" : "-");
    printf( (file.st_mode & S_IXUSR) ? "x" : "-");
    printf( (file.st_mode & S_IRGRP) ? "r" : "-");
    printf( (file.st_mode & S_IWGRP) ? "w" : "-");
    printf( (file.st_mode & S_IXGRP) ? "x" : "-");
    printf( (file.st_mode & S_IROTH) ? "r" : "-");
    printf( (file.st_mode & S_IWOTH) ? "w" : "-");
    printf( (file.st_mode & S_IXOTH) ? "x" : "-");
    printf("\n");
    if(file.st_mode & S_IFREG)
        printf("File type: Regular\n");
    if(file.st_mode & S_IFDIR)
        printf("File type: Directory\n");
}
```

Get Help Write Out Where Is Cut Text Justify Cur Pos Undo Mark Text To Bracket Previous

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Menu root@usermint:/home... 21:52 Right Ctrl

LinuxMint19 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

File Edit View Search Terminal Help

```
usermint@usermint:~$ sudo su
[sudo] password for usermint:
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# gcc exec.c -o exec
root@usermint:/home/usermint# ./a.out /bin/ls
Child process
a.out Desktop dirlist.c Downloads exec.c fork.c Music Public stat.c Videos wait.c
coba.c dirlist Documents exec fork fork.c.save Pictures stat Templates wait
Child Terminated
root@usermint:/home/usermint# nano stat.c
root@usermint:/home/usermint# gcc stat.c -o stat
root@usermint:/home/usermint#
```

root@usermint:/home/usermint#

LinuxMint19 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

File Edit View Search Terminal Help

```
usermint@usermint:~$ sudo su
[sudo] password for usermint:
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# gcc exec.c -o exec
root@usermint:/home/usermint# ./a.out /bin/ls
Child process
a.out Desktop dirlist.c Downloads exec.c fork.c Music Public stat.c Videos wait.c
coba.c dirlist Documents exec fork fork.c.save Pictures stat Templates wait
Child Terminated
root@usermint:/home/usermint# nano stat.c
root@usermint:/home/usermint# gcc stat.c -o stat
root@usermint:/home/usermint# ./stat
Usage: ./a.out <filename>
root@usermint:/home/usermint# ./a.out fork.c

Insufficient arguments to load program
Usage: ./a.out <path> <cmd>
root@usermint:/home/usermint# ./a.out fork

Insufficient arguments to load program
Usage: ./a.out <path> <cmd>
root@usermint:/home/usermint# ./a.out wait

Insufficient arguments to load program
Usage: ./a.out <path> <cmd>
root@usermint:/home/usermint# ./stat
Usage: ./a.out <filename>
root@usermint:/home/usermint#
```

root@usermint:/home/usermint#

Dirlist.c

LinuxMint19 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

root@usermint:/home/usermint

File Edit View Search Terminal Help

GNU nano 2.9.3

```
#include <stdio.h>
#include <dirent.h>
#include <stdlib.h>

int main(int argc, char *argv[]){
    struct dirent *dptr;
    DIR *dname;

    if(argc != 2){
        printf("Usage: ./a.out <dirname>\n");
        exit(-1);
    }
    if((dname = opendir(argv[1])) == NULL)
    {
        perror(argv[1]);
        exit(-1);
    }
    while(dptr=readdir(dname))
        printf("%s\n", dptr->d_name);

    closedir(dname);
}
```

[Read 22 lines]

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Menu root@usermint:/hom...

21:43 21:42

LinuxMint19 [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

root@usermint:/home/usermint

File Edit View Search Terminal Help

```
exec.c:23:3: warning: missing sentinel in function call [-Wformat=]
    i = execl(argv[1], argv[2], 0);
^
root@usermint:/home/usermint# g++ exec.c -std=c++11 -Wformat
root@usermint:/home/usermint# gcc exec.c -o exec
exec.c: In function 'main':
exec.c:23:3: warning: missing sentinel in function call [-Wformat=]
    i = execl(argv[1], argv[2], 0);
^
root@usermint:/home/usermint# g++ exec.c -std=c++98 -Wformat
root@usermint:/home/usermint# gcc exec.c -o exec
exec.c: In function 'main':
exec.c:23:3: warning: missing sentinel in function call [-Wformat=]
    i = execl(argv[1], argv[2], 0);
^
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# gcc exec.c -o exec
exec.c: In function 'main':
exec.c:23:3: warning: missing sentinel in function call [-Wformat=]
    i = execl(argv[1], argv[2], 0);
^
root@usermint:/home/usermint# nano dirlist.c
root@usermint:/home/usermint# gcc dirlist.c -o dirlist
dirlist.c:5:16: error: expected ')' before 'char'
int main(argc, char *argv[]){
               ^
root@usermint:/home/usermint# nano dirlist.c
root@usermint:/home/usermint# gcc dirlist.c -o dirlist
root@usermint:/home/usermint# gcc dirlist.c -o dirlist
root@usermint:/home/usermint#
```

Menu root@usermint:/hom...

21:43 21:43

```
LinuxMint19 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
File Edit View Search Terminal Help
usermint@usermint:~$ sudo su
[sudo] password for usermint:
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# gcc exec.c -o exec
root@usermint:/home/usermint# ./a.out /bin/ls ls
Child process
a.out Desktop dirlist.c Downloads exec.c fork.c Music Public stat.c Videos wait.c
coba.c dirlist Documents exec fork fork.c.save Pictures stat Templates wait
Child Terminated
root@usermint:/home/usermint# nano stat.c
root@usermint:/home/usermint# gcc stat.c -o stat
root@usermint:/home/usermint# ./stat
Usage: ./a.out <filename>
root@usermint:/home/usermint# ./a.out fork.c

Insufficient arguments to load program
Usage: ./a.out <path> <cmd>
root@usermint:/home/usermint# ./a.out fork

Insufficient arguments to load program
Usage: ./a.out <path> <cmd>
root@usermint:/home/usermint# ./a.out wait

Insufficient arguments to load program
Usage: ./a.out <path> <cmd>
root@usermint:/home/usermint# ./a.out stat
Usage: ./a.out <filename>
root@usermint:/home/usermint# gcc dirlist.c -o dirlist
root@usermint:/home/usermint#
```

```
LinuxMint19 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
File Edit View Search Terminal Help
usermint@usermint:~$ sudo su
[sudo] password for usermint:
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# nano exec.c
root@usermint:/home/usermint# gcc exec.c -o exec
root@usermint:/home/usermint# ./a.out /bin/ls ls
Child process
a.out Desktop dirlist.c Downloads exec.c fork.c Music Public stat.c Videos wait.c
coba.c dirlist Documents exec fork fork.c.save Pictures stat Templates wait
Child Terminated
root@usermint:/home/usermint# nano stat.c
root@usermint:/home/usermint# gcc stat.c -o stat
root@usermint:/home/usermint# ./stat
Usage: ./a.out <filename>
root@usermint:/home/usermint# ./a.out fork.c

Insufficient arguments to load program
Usage: ./a.out <path> <cmd>
root@usermint:/home/usermint# ./a.out fork

Insufficient arguments to load program
Usage: ./a.out <path> <cmd>
root@usermint:/home/usermint# ./a.out wait

Insufficient arguments to load program
Usage: ./a.out <path> <cmd>
root@usermint:/home/usermint# ./a.out stat
Usage: ./a.out <filename>
root@usermint:/home/usermint# gcc dirlist.c -o dirlist
root@usermint:/home/usermint# ./dirlist
Usage: ./a.out <dirname>
root@usermint:/home/usermint#
```

Modul 9 : FCREATE :

```
File Edit View Search Terminal Help
nano 2.6.0
File: fcreate.c

#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <fcntl.h>

int main(int argc, char *argv[]) {
    int fd, n, len;
    char buf[100];
    if (argc != 2) {
        printf("Usage : ./a.out <filename>\n");
        exit(-1);
    }
    fd = open(argv[1], O_WRONLY|O_CREAT|O_TRUNC, 0644);
    if (fd < 0)
    {
        printf("File creation problem\n");
        exit(-1);
    }

    printf("Tekan Ctrl+D di akhir baris:\n");

    while((n = read(0,buf,sizeof(buf)))>0)
    {
        len = strlen(buf);
        write(fd,buf,len);
    }

    close(fd);
}

^G Get Help      ^O Write Out      ^W Where Is      ^K Cut Text      ^J Justify      ^C Cur Pos      ^Y Prev Page      M-\ First Line      M-W WhereIs Next  ^A Mark Text
^X Exit          ^R Read File      ^E Replace      ^U Uncut Text     ^T To Spell      ^G Go To Line     ^V Next Page      M-/ Last Line      M-B To Bracket   M-C Copy Text
```

```
File Edit View Search Terminal Help
jarkom@lab-jarkom:~$ gcc -o fread Fread.c
jarkom@lab-jarkom:~$ ./fcreate test.txt
Tekan Ctrl+D di akhir baris:
HELLO WORDjarkom@lab-jarkom:~$
```

FREAD :

```
File Edit View Search Terminal Help
nano 2.6.0
jarkom@lab-jarkom: ~
File: fread.c

#include <unistd.h>
#include <stdio.h>
#include <stdlib.h>
#include <fncl.h>
int main (int argc, char *argv[]){
    int fd, i;
    char buf[100];
    if (argc<2)
    {
        printf("Usage: ./a.out <filename>\n");
        exit(-1);
    }

    fd = open(argv[1], O_RDONLY);
    if(fd == -1)
    {
        printf("%s file does not exist\n", argv[1]);
        exit(-1);
    }

    printf("Isi dari file %s adalah : \n", argv[1]);
    while(read(fd, buf, sizeof(buf))>0)
        printf("%s", buf);

    close(fd);
}

[ Read 26 lines ]
^G Get Help      ^O Write Out      ^W Where Is      ^K Cut Text      ^J Justify      ^C Cur Pos      ^Y Prev Page      M-\ First Line      M-W WhereIs Next  ^A Mark Text
^X Exit          ^R Read File       ^E Replace       ^U Uncut Text     ^T To Spell      ^_ Go To Line     ^V Next Page      M-/ Last Line      M-B To Bracket   M-C Copy Text
```

```
File Edit View Search Terminal Help
jarkom@lab-jarkom: ~
jarkom@lab-jarkom: ~$ ./fread test.txt
Isi dari file test.txt adalah :
HELLO WORD
jarkom@lab-jarkom: ~$
```

FAPPEND:

The screenshot shows a terminal window titled "jarkom@lab-jarkom: ~". The file being edited is "Fappend.c". The code implements a command-line tool for appending files. It includes error handling for missing arguments and incorrect file descriptors. It reads from standard input and writes to a specified file using the O_APPEND flag.

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <fcntl.h>
int main (argc, char *argv[]) {
    int fd, n, len;
    char buf[100];
    if (argc !=2)
    {
        printf("Usage: ./a.out <filename>\n");exit(-1);
    }
    fd = open(argv[1], O_APPEND|O_WRONLY|O_CREAT, 0644);
    if (fd < 0)
    {
        perror(argv[1]);
        exit(-1);
    }
    while((n = read(0, buf, sizeof(buf))) > 0)
    {
        len = strlen(buf);
        write(fd, buf, len);
    }
    close(fd);
}
```

[Read 25 lines]

Key bindings at the bottom:

- ^G Get Help
- ^O Write Out
- ^W Where Is
- ^K Cut Text
- ^J Justify
- ^C Cur Pos
- ^Y Prev Page
- M-\ First Line
- M-W WhereIs Next
- M-A Mark Text
- ^X Exit
- ^R Read File
- ^Y Replace
- ^U Uncut Text
- ^T To Spell
- ^L Go To Line
- ^V Next Page
- M-/ Last Line
- M-J To Bracket
- M-C Copy Text

Modul 10 :

List.c

The screenshot shows a terminal window titled "jarkom@lab-jarkom: ~". The file being edited is "list.c". The code demonstrates how to use the scandir() function to list directory contents. It prints each entry's name, preceded by a 20-space width field.

```
#include <stdio.h>
#include <dirent.h>
main()
{
    struct dirent
    *namelist; int n,i;
    char pathname[100];
    getcwd(pathname);

    n = scandir(pathname, &namelist, 0, alphasort);
    if(n < 0)
        printf("Error\n");
    else
        for(i=0; i<n; i++) if(namelist[i]->d_name[0] != '.')
            printf("%-20s", namelist[i]->d_name);
}
```

[Read 25 lines]

Key bindings at the bottom:

- ^G Get Help
- ^O Write Out
- ^W Where Is
- ^K Cut Text
- ^J Justify
- ^C Cur Pos
- ^Y Prev Page
- M-\ First Line
- M-W WhereIs Next
- M-A Mark Text
- ^X Exit
- ^R Read File
- ^Y Replace
- ^U Uncut Text
- ^T To Spell
- ^L Go To Line
- ^V Next Page
- M-/ Last Line
- M-J To Bracket
- M-C Copy Text

Mygrep.c

```

nano 2.6.0                                         File: mygrep.c

#include <stdio.h>
#include <string.h>
#include <stdlib.h>
main(int argc,char *argv[])
{
FILE *fd;
char str[100];
char c;
int i, flag, j, m, k;
char temp[30];

if (argc != 3)
{
    printf("Usage: gcc mygrep.c -o mygrep\n");
    printf("Usage: ./mygrep <search_text> <filename>\n");
    exit(-1);
}

Fd = Fopen(argv[2],"r");
if(Fd == NULL)
{
    printf("%s is not exist\n",argv[2]);
    exit(-1);
}

while(!feof(Fd))
{
    i = 0;
    while(1)
    {
        [ Read 55 lines ]

```

File menu: File Edit View Search Terminal Help

File: mygrep.c

Key bindings:

- PG Get Help
- W Write Out
- W Where Is
- Cut Text
- Justify
- Cur Pos
- Prev Page
- M-1 First Line
- M-W WhereIs Next
- Mark Text
- X Exit
- R Read File
- R Replace
- Uncut Text
- To Spell
- Go To Line
- N Next Page
- M-2 Last Line
- M-J To Bracket
- M-C Copy Text

Copy.c

```

nano 2.6.0                                         File: copy.c

#include <stdio.h>
#include <stdlib.h>
#include <fcntl.h>
#include <sys/stat.h>
#define SIZE 1024
main(int argc, char *argv[])
{
int src, dest, nread;
char buf[SIZE];
if (argc != 3)
{
    printf("Usage: gcc copy.c -o copy\n");
    printf("Usage: ./copy <filename> <newfile> \n");
    exit(-1);
}
if ((src = open(argv[1], O_RDONLY)) == -1)
{
    perror(argv[1]);
    exit(-1);
}
if ((dest = creat(argv[2], 0644)) == -1)
{
    perror(argv[2]);
    exit(-1);
}
while ((nread = read(src, buf, SIZE)) > 0)
{
    if (write(dest, buf, nread) == -1)
    {
        printf("can't write\n");
    }
    [ Read 35 lines ]

```

File menu: File Edit View Search Terminal Help

File: copy.c

Key bindings:

- PG Get Help
- W Write Out
- W Where Is
- Cut Text
- Justify
- Cur Pos
- Prev Page
- M-1 First Line
- M-W WhereIs Next
- Mark Text
- X Exit
- R Read File
- R Replace
- Uncut Text
- To Spell
- Go To Line
- N Next Page
- M-2 Last Line
- M-J To Bracket
- M-C Copy Text

Del.c

A screenshot of a terminal window titled "jarkom@lab-jarkom: ~". The window title bar shows "File Edit View Search Terminal Help" and the date "Wed, 5 Dec 2018 13:47". The main area of the window displays the content of a file named "del.c" using the nano 2.6.0 editor. The code in "del.c" includes includes for stdio.h, stdlib.h, and fcntl.h, a main function that checks for command-line arguments, opens a file for reading, and then closes and unlinks it if successful. The status bar at the bottom shows various keyboard shortcuts for nano, such as "Read 19 lines", "Get Help", "Write Out", "Where Is", "Cut Text", "Justify", "Cur Pos", "Prev Page", "First Line", "WhereIs Next", "Mark Text", "Exit", "Read File", "Replace", "Uncut Text", "To Spell", "Go To Line", "Next Page", "Last Line", "To Bracket", and "Copy Text".

```
#include <stdio.h>
#include <stdlib.h>
#include <fcntl.h>
main(int argc, char* argv[]) {
    int fd;
    if (argc != 2)
    {
        printf("Usage: gcc del.c -o del\n");
        printf("Usage: .del <filename>\n");
        exit(-1);
    }
    fd = open(argv[1], O_RDONLY);
    if (fd != -1)
    {
        close(fd);
        unlink(argv[1]);
    } else
        perror(argv[1]);
}
```

A screenshot of a terminal window titled "jarkom@lab-jarkom: ~". The window title bar shows "File Edit View Search Terminal Help" and the date "Wed, 5 Dec 2018 13:48". The terminal session shows the user running several commands: "grep 'printf' list.c" which finds multiple occurrences of the printf function, "nano del.c" to edit the file, "ls" to list files in the directory, "grep" with various options and usage information, "cp" with a missing operand, "gcc list.c -o list" to compile the program, and finally "list" to run the compiled executable. The output of the "list" command shows a warning about implicit declarations.

```
jarkom@lab-jarkom:~$ grep 'printf' list.c
jarkom@lab-jarkom:~$ grep 'printf' list.c
jarkom@lab-jarkom:~$ grep 'printf' list.c
jarkom@lab-jarkom:~$ grep 'printf' list.c
jarkom@lab-jarkom:~$ nano del.c
jarkom@lab-jarkom:~$ ls
copy.c   Downloads     fread.c      latihan    Music       Pictures
create   Fappend.c    fread.c.save  Latihan    mygrep    Public
del.c    Fappend.c.save L200170011  latihan.txt mygrep.c  Templates
Desktop  Fcreate     L200170029  list       nano.save  Videos
Documents Fcreate.c  L200170100  list.c     perintah.odt
jarkom@lab-jarkom:~$ grep
Usage: grep [OPTION]... PATTERN [FILE]...
Try 'grep --help' for more information.
jarkom@lab-jarkom:~$ cp
cp: missing file operand
Try 'cp --help' for more information.
jarkom@lab-jarkom:~$ nano list.c
jarkom@lab-jarkom:~$ nano mygrep.c
jarkom@lab-jarkom:~$ nano copy.c
jarkom@lab-jarkom:~$ nano del.c
jarkom@lab-jarkom:~$ gcc list.c -o list
list.c:3:1: warning: return type defaults to 'int' [-Wimplicit-int]
 main() {
 ^
list.c: In function 'main':
list.c:7:5: warning: implicit declaration of function 'getcwd' [-Wimplicit-function-declaration]
     getcwd(pathname);
     ^
jarkom@lab-jarkom:~$
```

```
File Edit View Search Terminal Help
jarkom@lab-jarkom:~
```

```
jarkom@lab-jarkom:~$ grep 'printf' list.c
jarkom@lab-jarkom:~$ grep 'Error\n';
jarkom@lab-jarkom:~$ nano del.c
jarkom@lab-jarkom:~$ ls
copy.c  Downloads  fread.c    latihan    Music      Pictures
create   Fappend.c  Fread.c.save  Latihan   mygrep    Public
del.c    Fappend.c.save L200170011  latihan.txt mygrep.c  Templates
Desktop  Create    L200170029  list     nano.save  Videos
Documents Create.c L200170100  list.c    perintah.odt
jarkom@lab-jarkom:~$ grep
Usage: grep [OPTION]... PATTERN [FILE]...
Try 'grep --help' for more information.
jarkom@lab-jarkom:~$ cp
cp: missing file operand
Try 'cp --help' for more information.
jarkom@lab-jarkom:~$ nano list.c
jarkom@lab-jarkom:~$ nano mygrep.c
jarkom@lab-jarkom:~$ nano copy.c
jarkom@lab-jarkom:~$ nano del.c
jarkom@lab-jarkom:~$ gcc list.c -o list
list.c:3:1: warning: return type defaults to 'int' [-Wimplicit-int]
main() {
^
list.c: In function 'main':
list.c:7:5: warning: implicit declaration of function 'getcwd' [-Wimplicit-function-declaration]
    getcwd(pathname);
^
jarkom@lab-jarkom:~$ gcc mygrep.c -o mygrep
mygrep.c:4:1: warning: return type defaults to 'int' [-Wimplicit-int]
main(int argc,char *argv[]) {
^
jarkom@lab-jarkom:~$
```

```
File Edit View Search Terminal Help
jarkom@lab-jarkom:~$ cp
cp: missing file operand
Try 'cp --help' for more information.
jarkom@lab-jarkom:~$ nano list.c
jarkom@lab-jarkom:~$ nano mygrep.c
jarkom@lab-jarkom:~$ nano copy.c
jarkom@lab-jarkom:~$ nano del.c
jarkom@lab-jarkom:~$ gcc list.c -o list
list.c:3:1: warning: return type defaults to 'int' [-Wimplicit-int]
main() {
^
list.c: In Function 'main':
list.c:7:5: warning: implicit declaration of function 'getcwd' [-Wimplicit-function-declaration]
    getcwd(pathname);
^
jarkom@lab-jarkom:~$ gcc mygrep.c -o mygrep
mygrep.c:4:1: warning: return type defaults to 'int' [-Wimplicit-int]
main(int argc,char *argv[]) {
^
jarkom@lab-jarkom:~$ gcc copy.c -o copy
copy.c:6:1: warning: return type defaults to 'int' [-Wimplicit-int]
main(int argc, char *argv[]) {
^
copy.c: In Function 'main':
copy.c:25:21: warning: implicit declaration of function 'read' [-Wimplicit-function-declaration]
    while ((nread = read(src, buf, SIZE)) > 0)
        ^
copy.c:27:13: warning: implicit declaration of function 'write' [-Wimplicit-function-declaration]
    if (write(dst, buf, nread) == -1)
        ^
copy.c:33:5: warning: implicit declaration of function 'close' [-Wimplicit-function-declaration]
    close(src);
    ^
jarkom@lab-jarkom:~$
```

```
File Edit View Search Terminal Help
jarkom@lab-jarkom:~
```

```
list.c: In Function `main':
list.c:7:5: warning: implicit declaration of Function `getcwd' [-Wimplicit-function-declaration]
    getcwd(pathname);
    ^
jarkom@lab-jarkom:~$ gcc mygrep.c -o mygrep
mygrep.c:4:1: warning: return type defaults to `int' [-Wimplicit-int]
main(int argc,char *argv[]) {
^
copy.c: In Function `main':
copy.c:6:1: warning: return type defaults to `int' [-Wimplicit-int]
main(int argc, char *argv[]) {
^
copy.c: In Function `main':
copy.c:25:21: warning: implicit declaration of Function `read' [-Wimplicit-function-declaration]
    while ((nread = read(src, buf, SIZE)) > 0)
        ^
copy.c:27:13: warning: implicit declaration of Function `write' [-Wimplicit-function-declaration]
    if (fwrite(dst, buf, nread) == -1)
        ^
copy.c:33:5: warning: implicit declaration of Function `close' [-Wimplicit-function-declaration]
    close(src);
^
jarkom@lab-jarkom:~$ gcc del.c -o del
del.c:4:1: warning: return type defaults to `int' [-Wimplicit-int]
main(int argc, char* argv[]) {
^
del.c: In Function `main':
del.c:15:2: warning: implicit declaration of Function `close' [-Wimplicit-function-declaration]
    close(fd);
^
del.c:16:2: warning: implicit declaration of Function `unlink' [-Wimplicit-function-declaration]
    unlink(argv[1]);
^
jarkom@lab-jarkom:~$
```