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MODUL 3

LATIHAN

1.

```
C:\Bochs for Windows - Console
Microsoft Windows [Version 6.1.7601]
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C:\Users\LABRPL-11>cd /

C:\>cd os

C:\os>setpath

C:\os>Path=C:\OS\Dev-Cpp\bin;C:\OS\Bochs-2.3.5;c:\OS\Perl;C:\Windows;C:\Windows\
System32
C:\os>cd LAB/LAB3
```

2.

```
C:\os\LAB\LAB3>dir
Volume in drive C has no label.
Volume Serial Number is E8FE-923E

Directory of C:\os\LAB\LAB3

09/03/2015  01:42 PM    <DIR>          .
09/03/2015  01:42 PM    <DIR>          ..
12/17/2008  10:36 AM             10,203 bochs.log
12/15/2008  04:18 PM              1,625 bochsrc.bxrc
12/15/2008  09:04 PM             15,923 boot.asm
12/15/2008  06:59 PM                78 dosfp.bat
12/15/2008  07:04 PM          1,474,560 floppy.img
12/15/2008  05:57 PM             7,966 kernel.asm
12/15/2008  04:21 PM              228 Makefile
12/15/2008  07:05 PM                47 s.bat
               8 File(s)          1,510,630 bytes
               2 Dir(s)  124,601,294,848 bytes free

C:\os\LAB\LAB3>type s.bat
..\..\bochs-2.3.5\bochsdbg -q -f bochsrc.bxrc
```

3.

```
C:\os\LAB\LAB3>s

C:\os\LAB\LAB3>..\..\bochs-2.3.5\bochsdbg -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
Next at t=0
<0> [0xffffffff] f000:fff0 <unk. ctxt>: jmp far f000:e05b          ; ea5be000f0
<bochs:1>
```

4.

```
<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: 0x00000000:0000fff0
eflags 0x00000002
IOPL=0 id vip vif ac vm rf nt of df if tf sf zf af pf cf
<bochs:2>
```

5.

```
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> 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: 0x00000000:0000e05b
eflags 0x00000002
IOPL=0 id vip vif ac vm rf nt of df if tf sf zf af pf cf
<bochs:4>
```

6.

```
<bochs:4> vb 0:0x7c00
<bochs:5> c
<0> Breakpoint 2683464, in 0000:7c00 (0x00007c00)
Next at t=2082128
<0> [0x00007c00] 0000:7c00 <unk. ctxt>: jmp .+0x003b (0x00007c3e) ; e93b00
<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> q
# In bx_win32_gui_c::exit(void)?

Bochs is exiting. Press ENTER when you're ready to close this window.
```

7.

```

C:\Bochs for Windows - Console

C:\nos\LAB\LAB3>s
C:\nos\LAB\LAB3>..\..\bochs-2.3.5\bochsdbg -q -f bochsrc.bxrc
00000000000i[APIC?] local apic in initializing
=====
                Bochs x86 Emulator 2.3.5
                Build from CVS snapshot, on September 16, 2007
=====
00000000000i[      ] reading configuration from bochsrc.bxrc
00000000000i[      ] installing win32 module as the Bochs GUI
00000000000i[      ] using log file bochs.log
Next at t=0
<0> [0xffffffff] f000:fff0 <unk. ctxt>: jmp far f000:e05b          ; ea5be000f0
<bochs:1> vb 0x0100:0x0000
<bochs:2> c
<0> Breakpoint 2683464, in 0100:0000 <0x00001000>
Next at t=2945013
<0> [0x00001000] 0100:0000 <unk. ctxt>: mov ax, 0x0100          ; b80001
<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>
Next at t=2945024
<0> [0x00001014] 0100:0014 <unk. ctxt>: cli                      ; fa
<bochs:14>
Next at t=2945025
<0> [0x00001015] 0100:0015 <unk. ctxt>: mov word ptr es:0x84, 0x0030 ; 26c706840
03000
<bochs:15>

```

TUGAS

1. Buatlah tabel pemetaan memori pada PC selengkap mungkin!

Blok memori	Alokasi Pemakaian
F 0 0 0 0	ROM BIOS, Diagnostic, BASIC
E 0 0 0 0	ROM program
D 0 0 0 0	ROM program
C 0 0 0 0	Perluasan BIOS untuk hardisk XT
B 0 0 0 0	Monokrom Monitor
A 0 0 0 0	Monitor EGA, VGS, dll
9 0 0 0 0	Daerah kerjapemakai s/d 640 KB
8 0 0 0 0	Daerah kerjapemakai s/d 576 KB
7 0 0 0 0	Daerah kerjapemakai s/d 512 KB
6 0 0 0 0	Daerah kerjapemakai s/d 448 KB
5 0 0 0 0	Daerah kerjapemakai s/d 384 KB
4 0 0 0 0	Daerah kerjapemakai s/d 320 KB
3 0 0 0 0	Daerah kerjapemakai s/d 256 KB
2 0 0 0 0	Daerah kerjapemakai s/d 192 KB
1 0 0 0 0	Daerah kerjapemakai s/d 128 KB
0 0 0 0 0	Daerah kerjapemakai s/d 64 KB

2. Jelaskan perbedaan antara mode kerja 'Real-Mode' dan mode kerja 'Project-Mode' pada pc IBM Compatible!

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).

Modus terproteksi (protected mode) adalah sebuah modus di mana terdapat proteksi ruang alamat memori yang ditawarkan oleh mikroprosesor untuk digunakan oleh sistem operasi.