

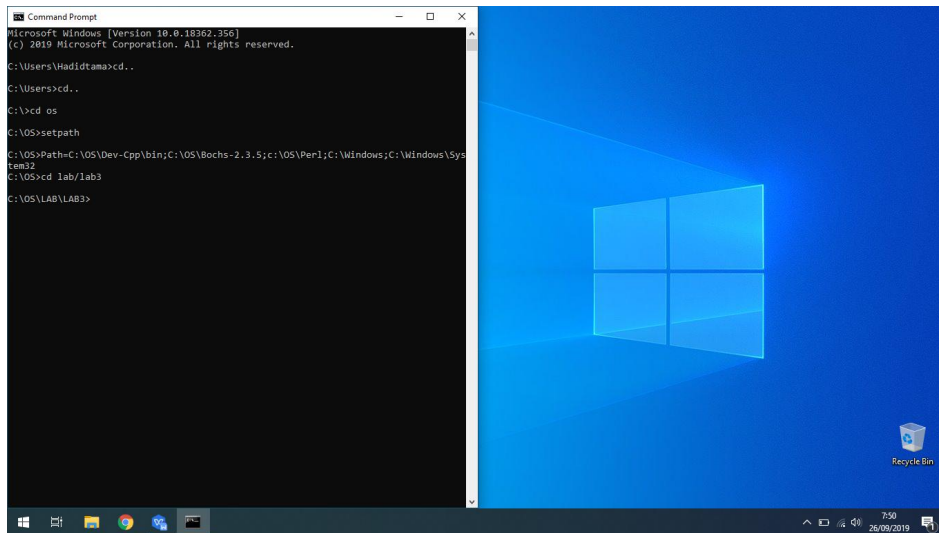
Laporan

Praktikum Sistem Operasi

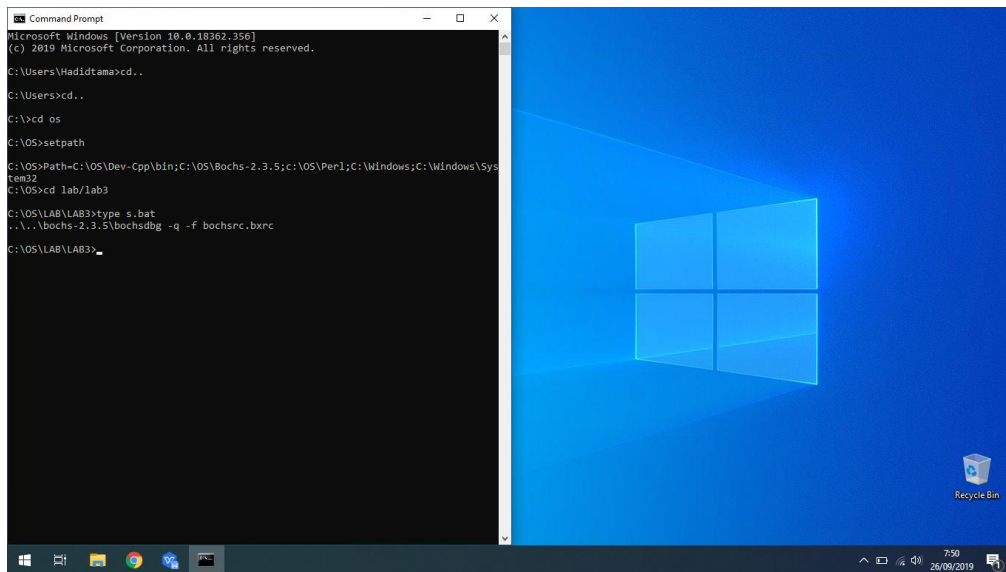
Modul 3. Mengenal Cara “Debugging” Program Bootstrap-loader

Langkah kerja

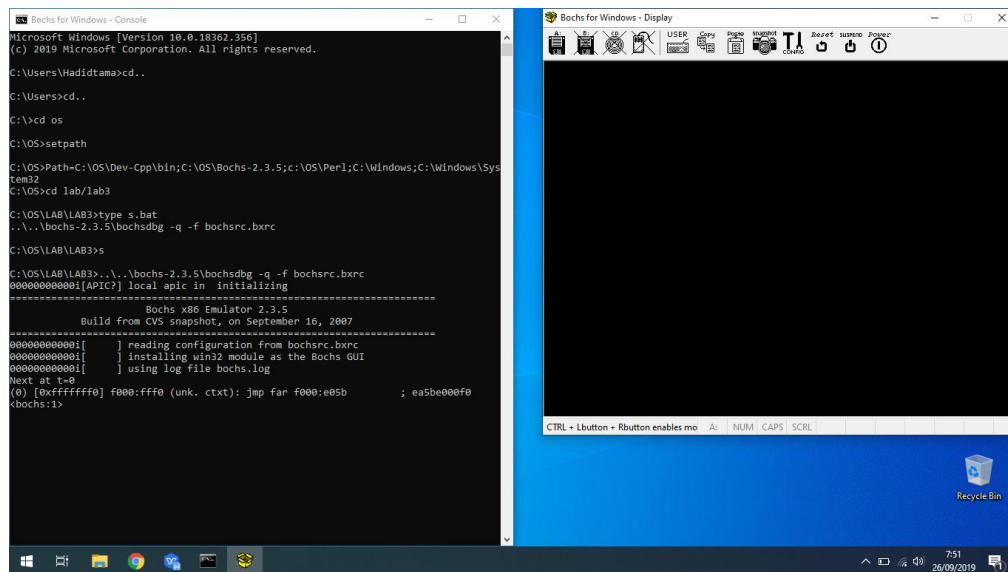
1. Menuju direktori kerja ‘C:\OS\LAB\LAB3’



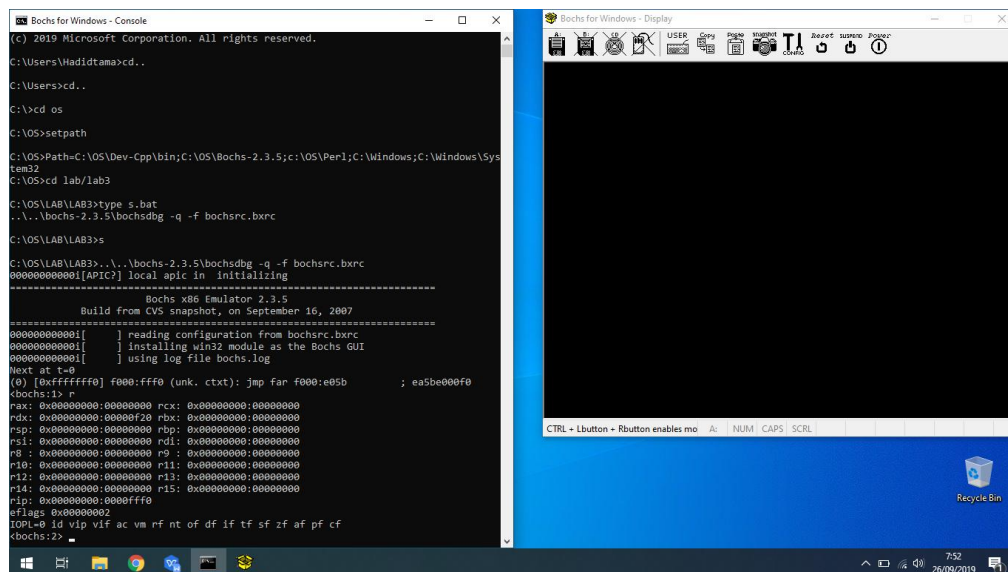
2. Mengaktifkan program versi debug “Bochsdbg”, perintah “type s.bat”



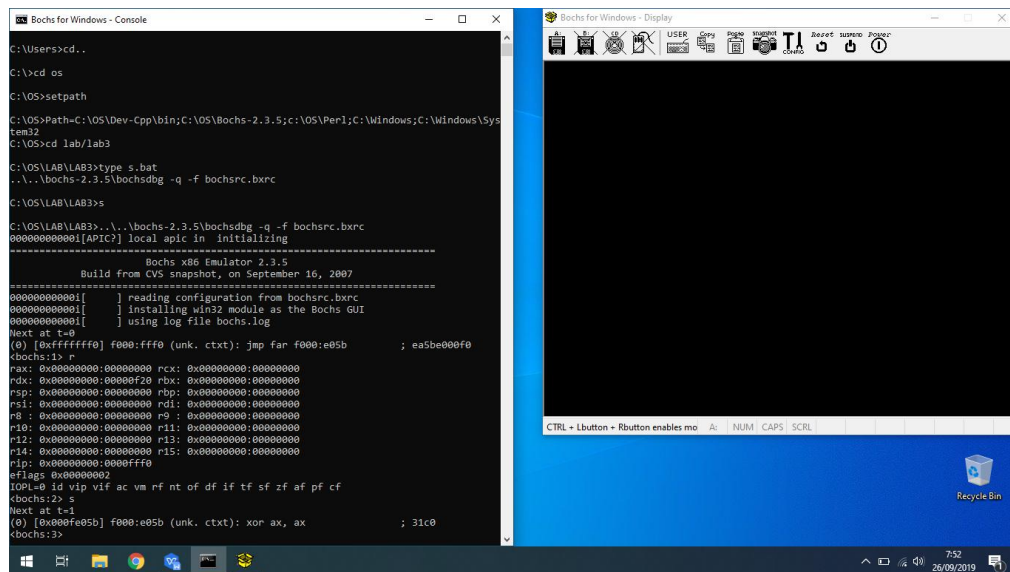
3. Memulai “Debugging”, perintah ‘s’



4. Melihat isi register CS dan IP, perintah ‘r’

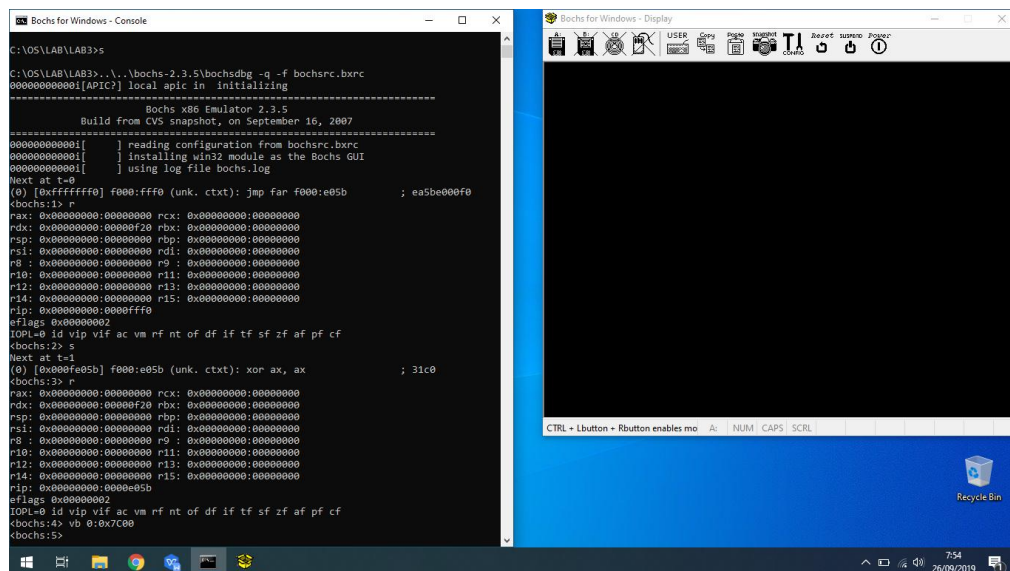


5. Mengeksekusi, perintah “s” dilanjutkan “r”

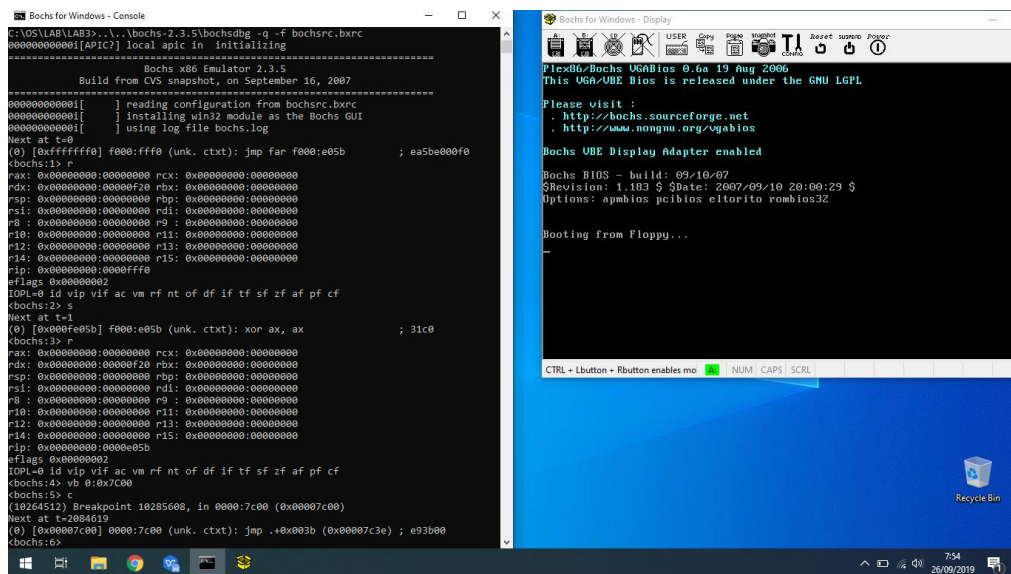


6.

a) Membuat titik pemberhentian pada alamat 0000:7C000, perintah ‘vb 0:0x7C00’

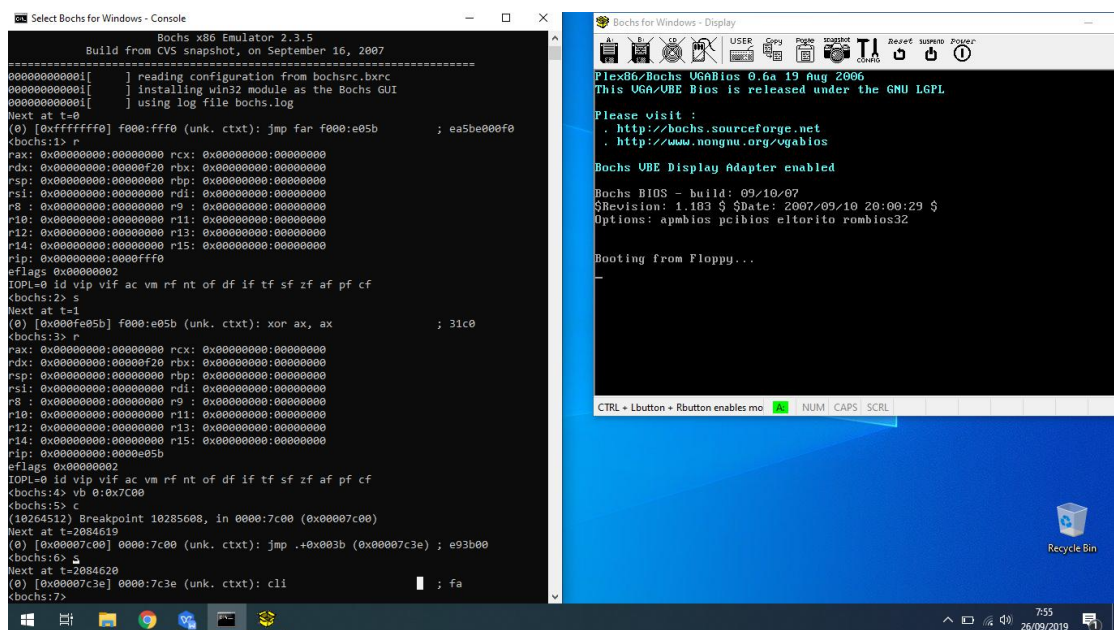


b) Memeriksa RAM dan peralatan lain hingga titik pemberhentian, perintah 'c'

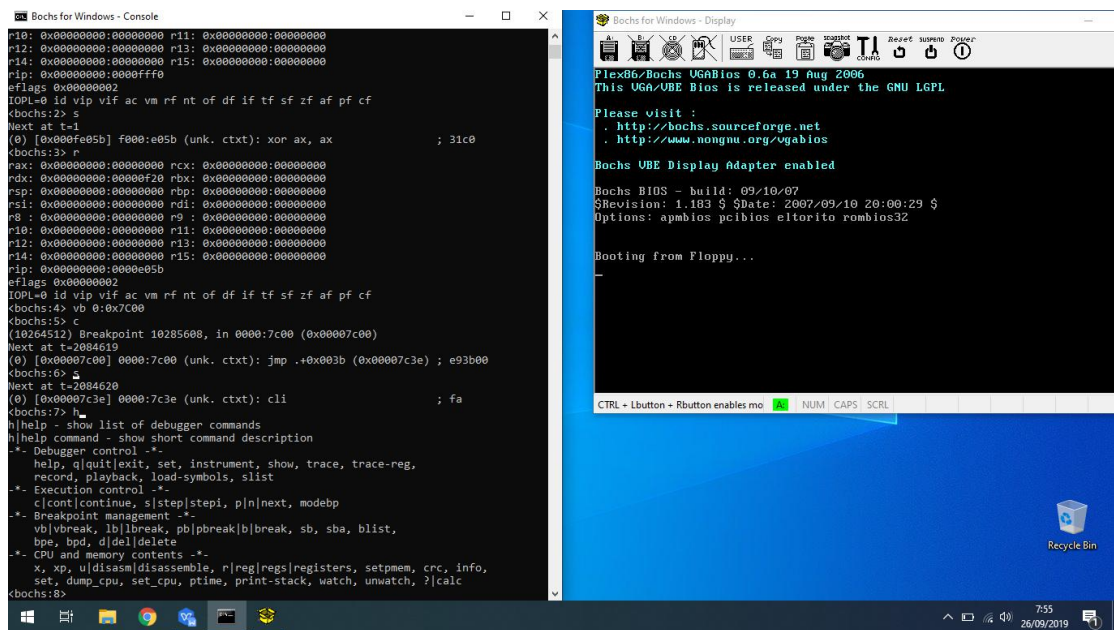


7.

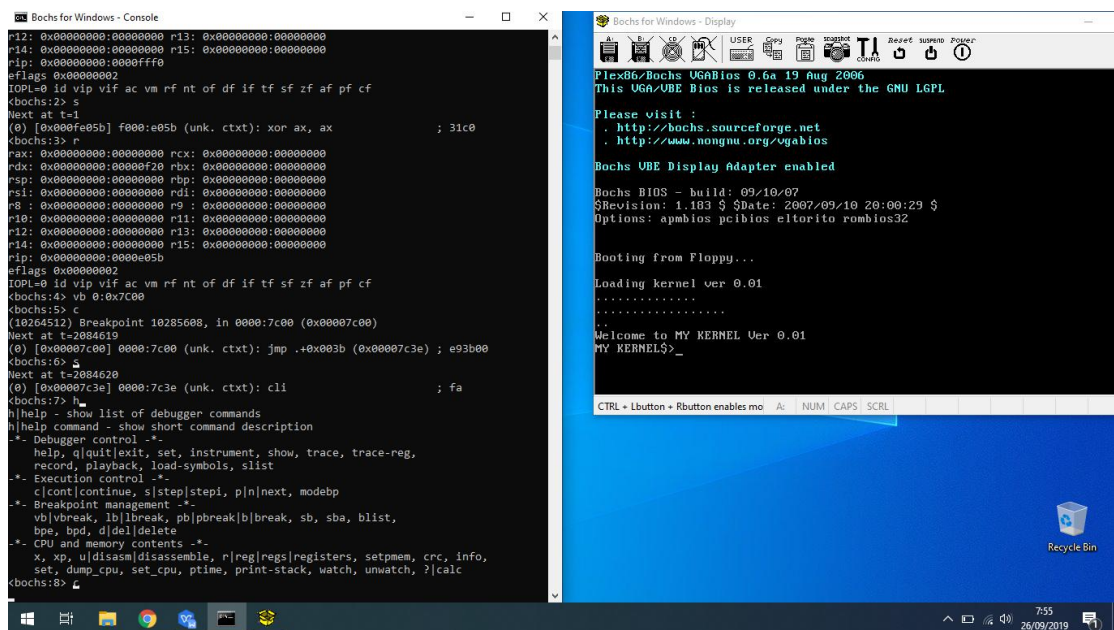
a) Melakukan debugging, perintah 's'



b) Melihat daftar menu, perintah 'h'

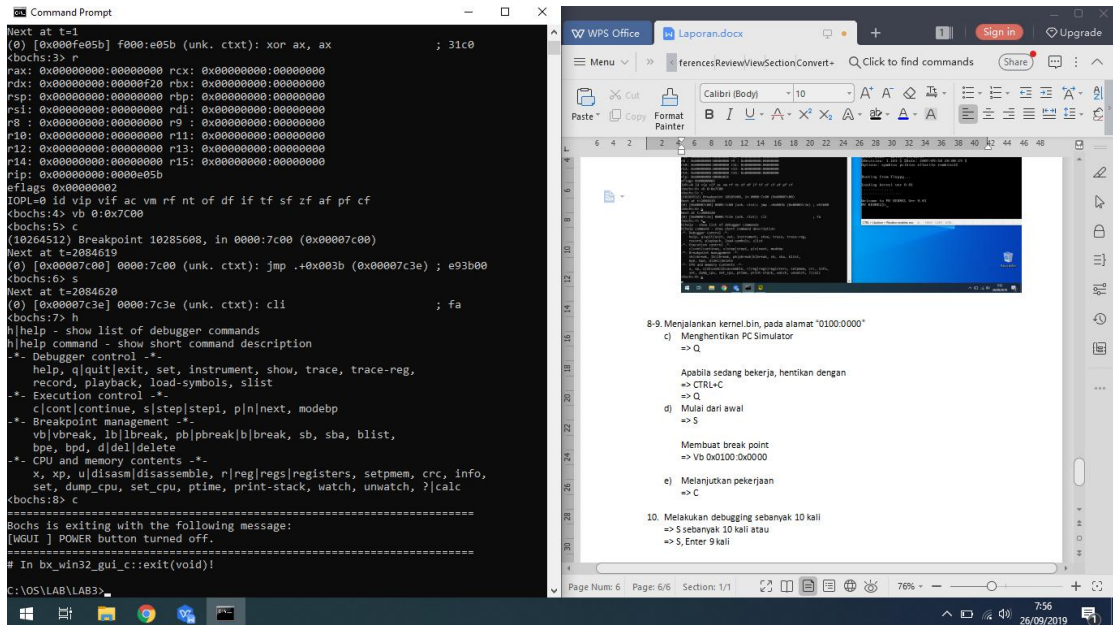


c) Melanjutkan proses, perintah 's'

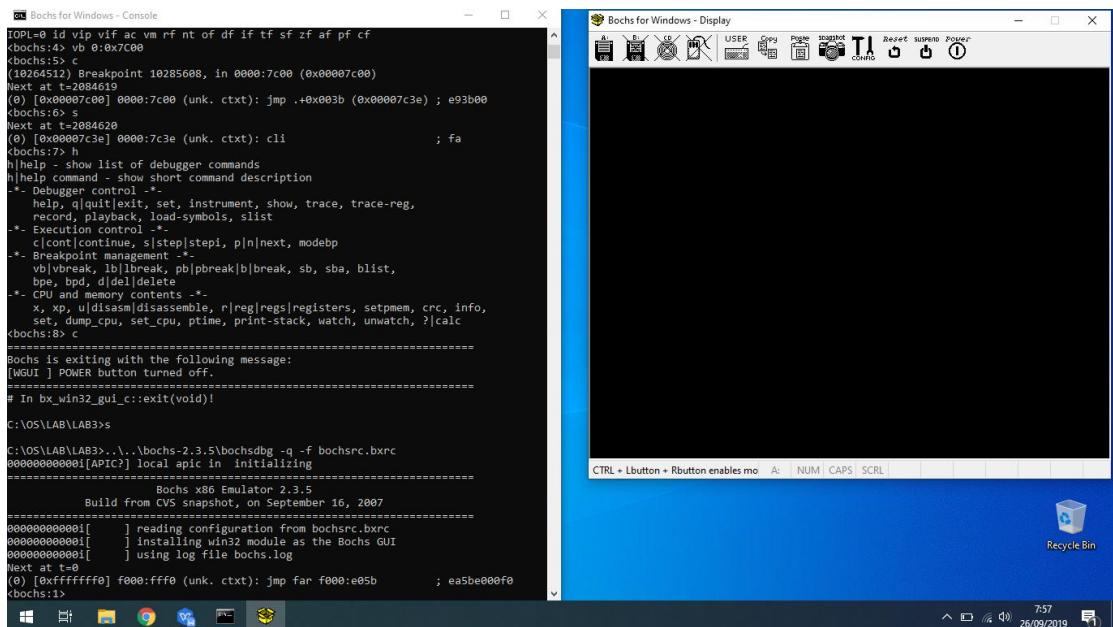


8. dan 9

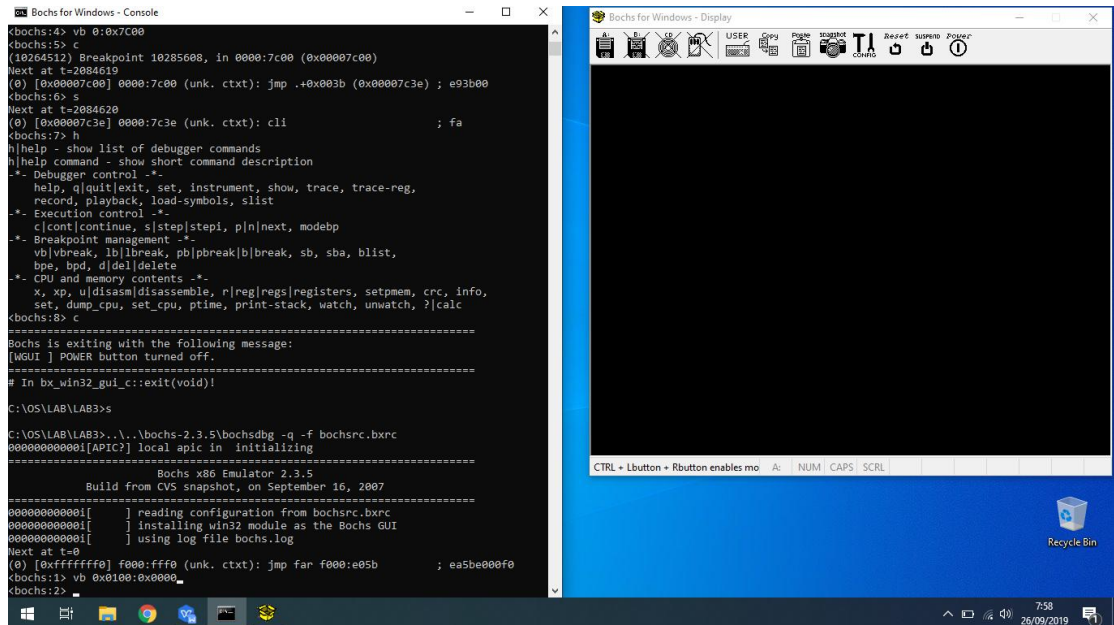
a) Menghentikan PC Simulator



b) Mulai dari awal, perintah 's'



- c) Membuat titik pemberhentian program 'kernel.bin' pada alamat '0100:0000', perintah 'vb 0x0100:0x0000'



```
Bochs for Windows - Console
cbochs:4> vb 0:0x7c00
cbochs:5> c
(10764512) Breakpoint 10285608, in 0000:7c00 (0x00007c00)
Next at t=2084619
(0) [0x00007c00] 0000:7c00 (unk. ctxt): jmp .+0x003b (0x00007c3e) ; e93b00
cbochs:6> s
Next at t=2084628
(0) [0x00007c3e] 0000:7c3e (unk. ctxt): cli ; fa
cbochs:7> h
h|help - show list of debugger commands
h|help command - show short command description
-- Debugger control --
help, q|quit|exit, set, instrument, show, trace, trace-reg,
record, playback, load-symbols, slist
-- Execution control --
c|cont|continue, s|step|stepi, p|n|next, modebp
-- Breakpoint management --
vb|vbreak, b|bbreak, pb|pbreak|b|break, sb, sba, blist,
bpe, bpd, d|del|delete
-- CPU and memory contents --
x, xp, u|disasm|disassemble, r|reg|regs|registers, setpmem, crc, info,
set, dump_cpu, set_cpu, ptme, print-stack, watch, unwatch, ?|calc
cbochs:8> c
Bochs is exiting with the following message:
[MGUI ] POWER button turned off.
=====
# In bx_win32_gui_c::exit(void)!
C:\OS\LAB\LAB3>s
C:\OS\LAB\LAB3>...\bochs-2.3.5\bochsdg -q -f bochsrc.bxrc
0000000000i[APIC?] local apic in initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
0000000000i[ ] reading configuration from bochsrc.bxrc
0000000000i[ ] installing win32 module as the Bochs GUI
0000000000i[ ] using log file bochs.log
Next at t=0
(0) [0xffffffff] f000:ffff (unk. ctxt): jmp far f000:e05b ; ea5be00f0
cbochs:1> vb 0x0100:0x0000
cbochs:2>
```

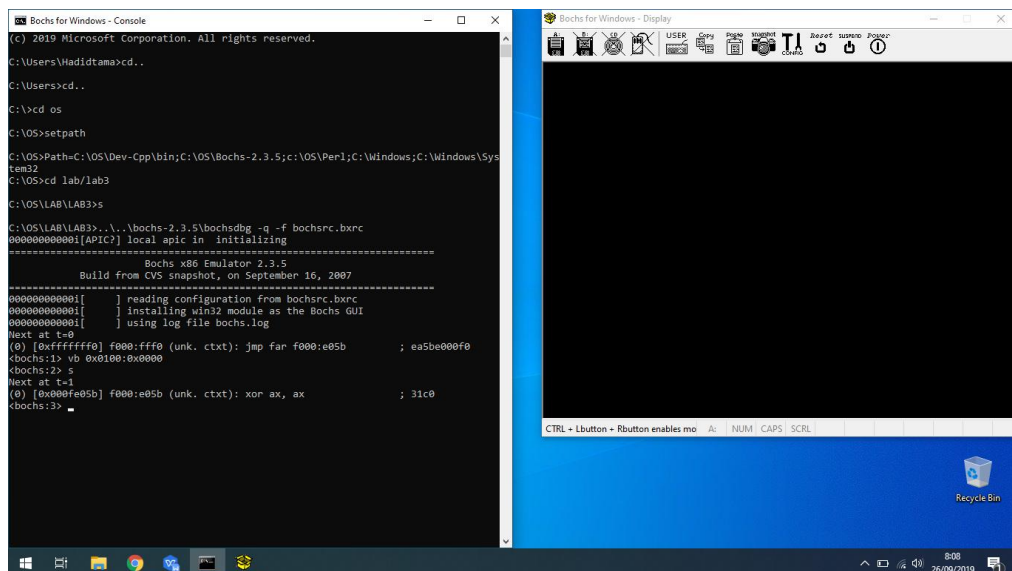
Bochs for Windows - Display

CTRL + Lbutton = Rbutton enables mo A: NUM CAPS SCRL

Recycle Bin

7:58 26/09/2019

- d) Melanjutkan pekerjaan, perintah 'c'



```
Bochs for Windows - Console
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\Hadiatama>cd..
C:\Users>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\System32
C:\OS>cd lab/lab3
C:\OS\LAB\LAB3>s
C:\OS\LAB\LAB3>...\bochs-2.3.5\bochsdg -q -f bochsrc.bxrc
0000000000i[APIC?] local apic in initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
0000000000i[ ] reading configuration from bochsrc.bxrc
0000000000i[ ] installing win32 module as the Bochs GUI
0000000000i[ ] using log file bochs.log
Next at t=0
(0) [0xffffffff] f000:ffff (unk. ctxt): jmp far f000:e05b ; ea5be00f0
cbochs:1> vb 0x0100:0x0000
cbochs:2> s
Next at t=1
(0) [0x0000e05b] f000:e05b (unk. ctxt): xor ax, ax ; 31c0
cbochs:3>
```

Bochs for Windows - Display

CTRL + Lbutton = Rbutton enables mo A: NUM CAPS SCRL

Recycle Bin

8:08 26/09/2019

10. Melakukan debugging sebanyak 10 kali, perintah 's' <ENTER> sebanyak 10 kali

