

**LAPORAN PRAKTIKUM
PENGENALAN SISTEM PENGEMBANGAN OS
PRAKTIKUM SISTEM OPERASI**



Oleh:

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**PROGRAM STUDI INFORMATIKA
FAKULTAS KOMUNIKASI DAN INFORMATIKA
UNIVERSITAS MUHAMMADIYAH SURAKARTA**

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.18362.1016]
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C:\Users\nila pratiwi>dir
Volume in drive C is OS
Volume Serial Number is 2A6A-81D1

Directory of C:\Users\nila pratiwi

09/24/2020  08:17 AM  <DIR>      .
09/24/2020  08:17 AM  <DIR>      ..
09/28/2019  06:17 PM  <DIR>      .gnome2
09/28/2019  06:17 PM             1,171 .gvnrgrc
09/26/2020  02:06 PM  <DIR>      .idlerc
10/16/2019  06:52 PM             218 .recently-used.xbel
05/20/2019  03:50 PM  <DIR>      .spss
09/20/2020  08:34 AM  <DIR>      3D Objects
06/12/2020  08:54 PM  <DIR>      cobra
09/20/2020  08:34 AM  <DIR>      Contacts
09/28/2020  07:59 PM  <DIR>      Desktop
09/20/2020  08:34 AM  <DIR>      Documents
09/28/2020  09:51 PM  <DIR>      Downloads
09/20/2020  08:34 AM  <DIR>      Favorites
05/15/2020  07:34 PM  <DIR>      greenfoot
09/28/2019  06:17 PM  <DIR>      GvR
09/28/2019  11:59 AM  <DIR>      GvRng apk
10/16/2019  06:48 PM             42 gvr_stderr.log
10/16/2019  06:48 PM            198 gvr_stdout.log
05/15/2020  07:37 PM  <DIR>      jf_robot
09/20/2020  08:34 AM  <DIR>      Links
09/20/2020  08:34 AM  <DIR>      Music
09/18/2020  02:29 PM  <DIR>      OneDrive
09/20/2020  08:34 AM  <DIR>      Pictures
09/20/2020  08:34 AM  <DIR>      Saved Games
09/20/2020  08:34 AM  <DIR>      Searches
09/20/2020  08:34 AM  <DIR>      Videos
         4 File(s)          1,629 bytes
        23 Dir(s)    144,390,287,360 bytes free

C:\Users\nila pratiwi>
```

```
C:\WINDOWS\system32\cmd.exe
C:\OS>dir
Volume in drive C is OS
Volume Serial Number is 2A6A-81D1

Directory of C:\OS

09/12/2019  04:11 PM  <DIR>      .
09/12/2019  04:11 PM  <DIR>      ..
09/12/2019  04:11 PM  <DIR>      Bochs-2.3.5
09/12/2019  04:11 PM  <DIR>      Dev-Cpp
12/17/2008  12:08 AM             1,096,291 1386.pdf
09/12/2019  04:11 PM  <DIR>      LAB
12/17/2008  12:07 AM             846,920 pcasm-book.pdf
12/17/2008  01:44 AM              86 Setpath.bat
12/13/2008  02:12 PM             716,512 winma81.exe
         4 File(s)    2,659,809 bytes
         5 Dir(s)    144,362,455,040 bytes free

C:\OS>setpath.bat
C:\OS>Path=C:\OS\Dev-Cpp\bin;C:\OS\Bochs-2.3.5;c:\OS\Perl;c:\Windows;c:\Windows\System32
C:\OS>
```

```
C:\WINDOWS\system32\cmd.exe
C:\OS>setpath.bat
C:\OS>Path=C:\OS\Dev-Cpp\bin;C:\OS\
C:\OS>cd lab
C:\OS\LAB>cd lab1
C:\OS\LAB\LAB1>notepad boot.asm
C:\OS\LAB\LAB1>
```

```
bootasm - Notepad
File Edit Format View Help
; *****
; LAB-1 : boot-strap loader - real mode
; untuk memindahkan file OS dari floppy disk format DOS FAT12
; *****

; atur mode kerja 16 bit (real-mode)
[BITS 16]

; Menentukan lokasi awal dari program
[ORG 0x0000]

; loncat ke label START
jmp     START

; Keterangan format floppy disk format FAT12

OEM_ID      db "QUASI-OS"
BytesPerSector dw 0x0200
SectorsPerCluster db 0x01
ReservedSectors dw 0x0001
TotalFATs     db 0x02
MaxRootEntries dw 0x00E0
TotalSectorsSmall dw 0xFFFF
```

```
C:\WINDOWS\system32\cmd.exe
C:\OS>setpath.bat
C:\OS>Path=C:\OS\Dev-Cpp\bin;C:\OS\
C:\OS>cd lab
C:\OS\LAB>cd lab1
C:\OS\LAB\LAB1>notepad boot.asm
C:\OS\LAB\LAB1>notepad Makefile
C:\OS\LAB\LAB1>
```

```
Makefile - Notepad
File Edit Format View Help
#
# LAB01 - Makefile
#

fp.disk: boot
dd if=boot.bin of=floppya.img

boot: boot.asm
nasm boot.asm -o boot.bin -f bin

kernel: kernel.asm
nasm kernel.asm -o kernel.bin -f bin

clean:
rm -f *.bin boot kernel
```

```
C:\WINDOWS\system32\cmd.exe

C:\OS>setpath.bat

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 lab1

C:\OS\LAB\LAB1>notepad boot.asm

C:\OS\LAB\LAB1>notepad Makefile

C:\OS\LAB\LAB1>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\LAB1>
```

```
C:\WINDOWS\system32\cmd.exe

C:\OS>setpath.bat

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 lab1

C:\OS\LAB\LAB1>notepad boot.asm

C:\OS\LAB\LAB1>notepad Makefile

C:\OS\LAB\LAB1>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\LAB1>dir
Volume in drive C is OS
Volume Serial Number is 2A6A-81D1

Directory of C:\OS\LAB\LAB1

09/12/2019  04:11 PM  <DIR>          .
09/12/2019  04:11 PM  <DIR>          ..
09/10/2019  04:19 PM             10,235 bochsout.txt
12/15/2008  04:17 PM             1,628 bochsrc.bxrc
12/14/2008  12:02 PM             14,365 boot.asm
09/28/2020  10:21 PM              512 boot.bin
09/16/2015  07:51 AM              512 boots.bin
12/15/2008  12:47 AM               78 dosfp.bat
09/28/2020  10:21 PM      1,474,560 floppya.img
12/14/2008  11:45 AM             7,966 kernel.asm
12/15/2008  04:21 PM              227 Makefile
12/15/2008  12:20 PM               44 s.bat
          10 File(s)      1,510,127 bytes
           2 Dir(s)    144,370,749,440 bytes free

C:\OS\LAB\LAB1>
```

```
C:\WINDOWS\system32\cmd.exe
Volume in drive C is OS
Volume Serial Number is 2A6A-81D1

Directory of C:\OS\LAB\LAB1

09/12/2019  04:11 PM  <DIR>          .
09/12/2019  04:11 PM  <DIR>          ..
09/10/2019  04:19 PM                10,235 bochsout.txt
12/15/2008  04:17 PM                1,628 bochsrc.bxrc
12/14/2008  12:02 PM                14,365 boot.asm
09/28/2020  10:21 PM                 512 boot.bin
09/16/2015  07:51 AM                 512 boots.bin
12/15/2008  12:47 AM                 78 dosfp.bat
09/28/2020  10:21 PM            1,474,560 floppya.img
12/14/2008  11:45 AM                7,966 kernel.asm
12/15/2008  04:21 PM                 227 Makefile
12/15/2008  12:20 PM                  44 s.bat
          10 File(s)            1,510,127 bytes
          2 Dir(s)      144,370,749,440 bytes free

C:\OS\LAB\LAB1>del floppya.img /P
C:\OS\LAB\LAB1>floppya.img, Delete (Y/N)? y

C:\OS\LAB\LAB1>dir
Volume in drive C is OS
Volume Serial Number is 2A6A-81D1

Directory of C:\OS\LAB\LAB1

09/28/2020  10:24 PM  <DIR>          .
09/28/2020  10:24 PM  <DIR>          ..
09/10/2019  04:19 PM                10,235 bochsout.txt
12/15/2008  04:17 PM                1,628 bochsrc.bxrc
12/14/2008  12:02 PM                14,365 boot.asm
09/28/2020  10:21 PM                 512 boot.bin
09/16/2015  07:51 AM                 512 boots.bin
12/15/2008  12:47 AM                 78 dosfp.bat
12/14/2008  11:45 AM                7,966 kernel.asm
12/15/2008  04:21 PM                 227 Makefile
12/15/2008  12:20 PM                  44 s.bat
          9 File(s)              35,567 bytes
          2 Dir(s)      144,370,495,488 bytes free

C:\OS\LAB\LAB1>
```

```
C:\WINDOWS\system32\cmd.exe - bximage
12/15/2008  04:17 PM                1,628 bochsrc.bxrc
12/14/2008  12:02 PM                14,365 boot.asm
09/28/2020  10:21 PM                 512 boot.bin
09/16/2015  07:51 AM                 512 boots.bin
12/15/2008  12:47 AM                 78 dosfp.bat
09/28/2020  10:21 PM            1,474,560 floppya.img
12/14/2008  11:45 AM                7,966 kernel.asm
12/15/2008  04:21 PM                 227 Makefile
12/15/2008  12:20 PM                  44 s.bat
          10 File(s)            1,510,127 bytes
          2 Dir(s)      144,370,749,440 bytes free

C:\OS\LAB\LAB1>del floppya.img /P
C:\OS\LAB\LAB1>floppya.img, Delete (Y/N)? y

C:\OS\LAB\LAB1>dir
Volume in drive C is OS
Volume Serial Number is 2A6A-81D1

Directory of C:\OS\LAB\LAB1

09/28/2020  10:24 PM  <DIR>          .
09/28/2020  10:24 PM  <DIR>          ..
09/10/2019  04:19 PM                10,235 bochsout.txt
12/15/2008  04:17 PM                1,628 bochsrc.bxrc
12/14/2008  12:02 PM                14,365 boot.asm
09/28/2020  10:21 PM                 512 boot.bin
09/16/2015  07:51 AM                 512 boots.bin
12/15/2008  12:47 AM                 78 dosfp.bat
12/14/2008  11:45 AM                7,966 kernel.asm
12/15/2008  04:21 PM                 227 Makefile
12/15/2008  12:20 PM                  44 s.bat
          9 File(s)              35,567 bytes
          2 Dir(s)      144,370,495,488 bytes free

C:\OS\LAB\LAB1>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]
```

```
C:\WINDOWS\system32\cmd.exe - bximage
12/15/2008 12:47 AM          78 dosfp.bat
09/28/2020 10:21 PM      1,474,560 floppy.img
12/14/2008 11:45 AM          7,966 kernel.asm
12/15/2008 04:21 PM          227 Makefile
12/15/2008 12:20 PM          44 s.bat
          10 File(s)      1,510,127 bytes
          2 Dir(s)      144,370,749,440 bytes free

C:\OS\LAB\LAB1>del floppy.img /P
C:\OS\LAB\LAB1>del floppy.img, Delete (Y/N)? y

C:\OS\LAB\LAB1>dir
Volume in drive C is OS
Volume Serial Number is 2A6A-81D1

Directory of C:\OS\LAB\LAB1

09/28/2020 10:24 PM <DIR>          .
09/28/2020 10:24 PM <DIR>          ..
09/10/2019 04:19 PM          10,235 bochsout.txt
12/15/2008 04:17 PM          1,628 bochsrc.bxrc
12/14/2008 12:02 PM      14,365 boot.asm
09/28/2020 10:21 PM          512 boot.bin
09/16/2015 07:51 AM          512 boots.bin
12/15/2008 12:47 AM          78 dosfp.bat
12/14/2008 11:45 AM          7,966 kernel.asm
12/15/2008 04:21 PM          227 Makefile
12/15/2008 12:20 PM          44 s.bat
          9 File(s)      35,567 bytes
          2 Dir(s)      144,370,495,488 bytes free

C:\OS\LAB\LAB1>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] _
```

```
C:\WINDOWS\system32\cmd.exe - bximage
12/15/2008 04:17 PM          1,628 bochsrc.bxrc
12/14/2008 12:02 PM      14,365 boot.asm
09/28/2020 10:21 PM          512 boot.bin
09/16/2015 07:51 AM          512 boots.bin
12/15/2008 12:47 AM          78 dosfp.bat
12/14/2008 11:45 AM          7,966 kernel.asm
12/15/2008 04:21 PM          227 Makefile
12/15/2008 12:20 PM          44 s.bat
          9 File(s)      35,567 bytes
          2 Dir(s)      144,370,495,488 bytes free

C:\OS\LAB\LAB1>bximage
=====
bximage
Disk Image Creation Tool for Bochs
$Id: bximage.c,v 1.32 2006/06/16 07:29:33 vruppert Exp $
=====

Do you want to create a floppy disk image or a hard disk image?
Please type hd or fd. [hd] fd

Choose the size of floppy disk image to create, in megabytes.
Please type 0.16, 0.18, 0.32, 0.36, 0.72, 1.2, 1.44, 1.68, 1.72, or 2.88.
[1.44] 1.44
I will create a floppy image with
  cyl=80
  heads=2
  sectors per track=18
  total sectors=2880
  total bytes=1474560

What should I name the image?
[a.img] floppy.img

Writing: [ ] Done.

I wrote 1474560 bytes to floppy.img.

The following line should appear in your bochsrc:
  floppy: image="floppy.img", status=inserted
(The line is stored in your windows clipboard, use CTRL-V to paste)

Press any key to continue
```

```
Bochs for Windows - Console
Disk Image Creation Tool for Bochs
$Id: bimage.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, 0.44, 0.88, 1.44, 2.88, 4.0, 8.0, 14.4, 28.8, 360, 720, 1440, 2880, 5760, 11520, 23040, 46080, 92160, 184320, 368640, 737280, 1474560, 2949120, 5898240, 11796480, 23592960, 47185920, 94371840, 188743680, 377487360, 754974720, 1509949440, 3019898880, 6039797760, 12079595520, 24159191040, 48318382080, 96636764160, 193273528320, 386547056640, 773094113280, 1546188226560, 3092376453120, 6184752906240, 12369505812480, 24739011624960, 49478023249920, 98956046499840, 197912092999680, 395824185999360, 791648371998720, 1583296743997440, 3166593487994880, 6333186975989760, 12666373951979520, 25332747903959040, 50665495807918080, 101330991615836160, 202661983231672320, 405323966463344640, 810647932926689280, 1621295865853378560, 3242591731706757120, 6485183463413514240, 12970366926827028480, 25940733853654056960, 51881467707308113920, 103762935414616227840, 207525870829232455680, 415051741658464911360, 830103483316929822720, 1660206966633859645440, 3320413933267719290880, 6640827866535438581760, 13281655733070877163520, 26563311466141754327040, 53126622932283508654080, 106253245864567017308160, 212506491729134034616320, 425012983458268069232640, 850025966916536138465280, 1700051933833072276930560, 3400103867666144553861120, 6800207735332289107722240, 13600415470664578215444480, 27200830941329156430888960, 54401661882658312861777920, 108803323765316625723555840, 217606647530633251447111680, 435213295061266502894223360, 870426590122533005788446720, 1740853180245066011576893440, 3481706360490132023153786880, 6963412720980264046307573760, 13926825441960528092615147520, 27853650883921056185230295040, 55707301767842112370460590080, 111414603535684224740921180160, 222829207071368449481842360320, 445658414142736898963684720640, 891316828285473797927369441280, 1782633656570947595854738882560, 3565267313141895191709477765120, 7130534626283790383418955530240, 14261069252567580766837911060480, 28522138505135161533675822120960, 57044277010270323067351644241920, 114088554020540646134703288483840, 228177108041081292269406576967680, 456354216082162584538813153935360, 912708432164325169077626307870720, 1825416864328650338155252615741440, 3650833728657300676310505231482880, 7301667457314601352621010462965760, 14603334914629202705242020925931520, 29206669829258405410484041851863040, 58413339658516810820968083703726080, 116826679317033621641936167407452160, 233653358634067243283872334814904320, 467306717268134486567744669629808640, 934613434536268973135489339259617280, 1869226869072537946270978678519234560, 3738453738145075892541957357038469120, 7476907476290151785083914714076938240, 14953814952580303570167829428153876480, 29907629905160607140335658856307752960, 59815259810321214280671317712615505920, 119630519620642428561342635425231011840, 239261039241284857122685270850462023680, 478522078482569714245370541700924047360, 957044156965139428490741083401848094720, 1914088313930278856981482166803696189440, 3828176627860557713962964333607392378880, 7656353255721115427925928667214784757760, 15312706511442230855851857334429569515520, 30625413022884461711703714668859139031040, 61250826045768923423407429337718278062080, 122501652091537846846814858675436556124160, 245003304183075693693629717350873112248320, 490006608366151387387259434701746224496640, 980013216732302774774518869403492448993280, 1960026433464605549549037738806984897986560, 3920052866929211099098075477613969795973120, 7840105733858422198196150955227939591946240, 15680211467716844396392301910455879183892480, 31360422935433688792784603820911758367784960, 62720845870867377585569207641823516735569920, 125441691741734755171138415283647033471139840, 250883383483469510342276830567294066942279680, 501766766966939020684553661134588133884559360, 1003533533933878041369107322269176267769118720, 2007067067867756082738214644538352535538237440, 4014134135735512165476429289076705071076474880, 8028268271471024330952858578153410142152949760, 16056536542942048661905717156306820284305899520, 32113073085884097323811434312613640568611799040, 64226146171768194647622868625227281137223598080, 128452292343536389295245737250454562274447196160, 256904584687072778590491474500909124548894392320, 513809169374145557180982949001818249097788784640, 1027618338748291114361965898003636498195577569280, 2055236677496582228723931796007272996391155138560, 4110473354993164457447863592014545992782310277120, 8220946709986328914895727184029091985564620554240, 16441893419972657829791454368058183971129241108480, 32883786839945315659582908736116367942258482216960, 65767573679890631319165817472232735884516964433920, 131535147359781262638331634944465471769033928867840, 263070294719562525276663269888930943538067857735680, 526140589439125050553326539777861887076135715471360, 1052281178878250101106653079555723774152271430942720, 2104562357756500202213306159111447548304542861885440, 4209124715513000404426612318222895096609085723770880, 8418249431026000808853224636445790193218171447541760, 16836498862052001617706449272891580386436342895083520, 33672997724104003235412898545783160772872685790167040, 67345995448208006470825797091566321545745371580334080, 134691990896416012941651594183132643091490743160668160, 269383981792832025883303188366265286182981486321336320, 538767963585664051766606376732530572365962972642672640, 1077535927171328103533212753465061144731925945285345280, 2155071854342656207066425506930122289463851890570690560, 4310143708685312414132851013860244578927703781141381120, 8620287417370624828265702027720489157855407562282762240, 17240574834741249656531404055440978315710815124565524480, 34481149669482499313062808110881956631421630249131048960, 68962299338964998626125616221763913262843260498262097920, 137924598677929997252251232443527826525686520996524195840, 275849197355859994504502464887055653051373041993048391680, 551698394711719989009004929774111306102746083986096783360, 1103396789423439978018009859548222612205492167972193566720, 2206793578846879956036019719096445224410984335944387133440, 4413587157693759912072039438192890448821968671888774266880, 8827174315387519824144078876385780897643937343777548533760, 17654348630775039648288157752771561795287874687555097067520, 35308697261550079296576315505543123590575749375110194135040, 70617394523100158593152631011086247181151498750220388270080, 141234789046200317186305262022172494362302997500440776540160, 282469578092400634372610524044344988724605995000881553080320, 564939156184801268745221048088689977449211990001763106160640, 1129878312369602537490442096177379954898423980003526212321280, 2259756624739205074980884192354759909796847960007052424642560, 4519513249478410149961768384709519819593695920014104849285120, 9039026498956820299923536769419039639187391840028209698570240, 18078052997913640599847073538838079278374783680056419397140480, 36156105995827281199694147077676158556749567360112838794280960, 72312211991654562399388294155352317113499134720225677588561920, 144624423983309124798776588310704634226998269440451355177123840, 289248847966618249597553176621409268453996538880902710354247680, 578497695933236499195106353242818536907993077761805420708495360, 1156995391866472998390212706485637073815986155523610841416990720, 2313990783732945996780425412971274147631972311047221682833981440, 4627981567465891993560850825942548295263944622094443365667962880, 9255963134931783987121701651885096590527889244188886731335925760, 18511926269863567974243403303770193181055778488377773462671851520, 37023852539727135948486806607540386362111556976755546925343703040, 74047705079454271896973613215080772724223113953511093850687406080, 148095410158908543793947226430161545448446227907022187701374812160, 296190820317817087587894452860323090896892455814044375402749624320, 592381640635634175175788905720646181793784911628088750805499248640, 1184763281271268350351577811441292363587569823256177501610998497280, 2369526562542536700703155622882584727175139646512355003221996994560, 4739053125085073401406311245765169454350279293024710006443993989120, 9478106250170146802812622491530338908700558586049420012887987978240, 18956212500340293605625244983060677817401117172098840025775975956480, 37912425000680587211250489966121355634802234344197680051551951912960, 75824850001361174422500979932242711269604468688395360103103903825920, 151649700002722348845001959864485422539208937376790720206207807651840, 303299400005444697690003919728970845078417874753581440412415615303680, 606598800010893395380007839457941690156835749507162880824831230607360, 1213197600021786790760015678915883380313671499014325761649662461214720, 2426395200043573581520031357831766760627342998028651523299324922429440, 4852790400087147163040062715663533521254685996057303046598649844858880, 9705580800174294326080125431327067042509371992114606093197299689717760, 19411161600288588652160250862654134085018743984229212186394599379435520, 38822323200577177304320501725308268170037487968458424372789198758871040, 77644646401154354608641003450616536340074975936916848745578397517742080, 155289292802308709217282006901233072680149951873833697491156795035484160, 310578585604617418434564013802466145360299903747667394982313590070968320, 621157171209234836869128027604932290720599807495334789964627180141936640, 1242314342418469673738256055209864581441199614990669579929254360283873280, 2484628684836939347476512110419729162882399229981339159858508720567746560, 4969257369673878694953024220839458325764798459962678319717017441135493120, 9938514739347757389906048441678916651529596919925356639434034882270986240, 19877029478695514779812096883357833303059193839850713278868069764541972480, 39754058957391029559624193766715666606118387679701426557736139529083944960, 79508117914782059119248387533431333212236775359402853115472279058167889920, 159016235829564118238496775066862666424473550718805706230944558116335779840, 318032471659128236476993550133725332848947101437611412461889116232671559680, 636064943318256472953987100267450665697894202875222824923778232465343119360, 1272129886636512945907974200534901331395788405750445649847556464930686238720, 2544259773273025891815948401069802662791576811500891299695112929861372477440, 5088519546546051783631896802139605325583153623001782599390225859722744954880, 10177039093092103567263793604279210651166307246003565198780451719445489909760, 20354078186184207134527587208558421302332614492007130397560903438890979819520, 40708156372368414269055174417116842604665228984014260795121806877781959639040, 81416312744736828538110348834233685209330457968028521590243613755563919278080, 162832625489473657076220697668467370418660915936057043180487227511127838556160, 325665250978947314152441395336934740837321831872114086360974455022255677112320, 651330501957894628304882790673869481674643663744228172721948910044511354224640, 1302661003915789256609765581347738963349287327488456345443897820089022708449280, 2605322007831578513219531162695477926698574654976912690887795640178045416898560, 5210644015663157026439062325390955853397149309953825381775591280356090833797120, 10421288031326314052878124650781911706794298619907650763551182560712181667594240, 20842576062652628105756249301563823413588597239815301527102365121424363335188480, 41685152125305256211512498603127646827177194479630603054204730242848726670376960, 83370304250610512423024997206255293654354388959261206108409460485697453340753920, 166740608501221024846049994412510587308708777918522412216818920971394906681507840, 333481217002442049692099988825021174617417555837044824433637841942789813363015680, 666962434004884099384199977650042349234835111674089648867275683885579626726031360, 1333924868009768198768399955300084698469670223348179297734551367771159253452062720, 2667849736019536397536799910600169396939340446696358595469102735542318506904125440, 5335699472039072795073599821200338793878680893392717190938205471084637013808250880, 10671398944078145590147199642400677587757361786785434381876410942169274027616501760, 21342797888156291180294399284801355175514723573570868763752821884338548055233003520, 42685595776312582360588798569602710351029447147141737527505643768677096110466007040, 85371191552625164721177597139205420702058894294283475055011287537354192220932014080, 17074238310525032944235519427841084140411778858856695011002257507470838444186402
```

```
C:\WINDOWS\system32\cmd.exe
The following line should appear in your bochsrc:
    floppy: image="floppya.img", status=inserted
(The line is stored in your windows clipboard, use CTRL-V to paste)

Press any key to continue

C:\OS\LAB\LAB1>dosfp

C:\OS\LAB\LAB1>cd "..\..\Bochs-2.3.5\dos"

C:\OS\Bochs-2.3.5\dos>..\bochs -q -f bochsrc2.txt
000000000000i[APIC?] local apic in  initializing
=====
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
=====
000000000000i[      ] reading configuration from bochsrc2.txt
000000000000i[      ] installing win32 module as the Bochs GUI
000000000000i[      ] using log file bochsout.txt
# In bx_win32_gui_c::exit(void)!
=====
Bochs is exiting with the following message:
[WGUI ] POWER button turned off.
=====

C:\OS\Bochs-2.3.5\dos>cd "C:\os\lab\lab1"

C:\OS\LAB\LAB1>
C:\OS\LAB\LAB1>dd if=floppya.img of=boots.bin count=1
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\LAB1>debug boots.bin
'debug' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB1>quit
'quit' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB1>
```

```
C:\WINDOWS\system32\cmd.exe

C:\OS\LAB\LAB1>quit
'quit' is not recognized as an internal or external command,
operable program or batch file.

C:\OS\LAB\LAB1>tdump boots.bin
Turbo Dump Version 5.0.16.12 Copyright (c) 1988, 2000 Inprise Corporation
Display of File BOOTS.BIN

000000: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000010: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000020: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000030: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000040: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000050: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000060: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000070: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000080: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000090: 00 00 00 00 00 00 00 00 00 00 00 00 .....
0000A0: 00 00 00 00 00 00 00 00 00 00 00 00 .....
0000B0: 00 00 00 00 00 00 00 00 00 00 00 00 .....
0000C0: 00 00 00 00 00 00 00 00 00 00 00 00 .....
0000D0: 00 00 00 00 00 00 00 00 00 00 00 00 .....
0000E0: 00 00 00 00 00 00 00 00 00 00 00 00 .....
0000F0: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000100: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000110: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000120: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000130: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000140: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000150: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000160: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000170: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000180: 00 00 00 00 00 00 00 00 00 00 00 00 .....
000190: 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001A0: 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001B0: 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001C0: 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001D0: 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001E0: 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001F0: 00 00 00 00 00 00 00 00 00 00 00 00 .....

C:\OS\LAB\LAB1>
```



```
C:\WINDOWS\system32\cmd.exe
operable program or batch file.

C:\OS\LAB\LAB1>tdump boots.bin
Turbo Dump Version 5.0.16.12 Copyright (c) 1988, 2000 Inprise Corporation
Display of File BOOTS.BIN

000000: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000010: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000020: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000040: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000050: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000060: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000070: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000080: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000090: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0000A0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0000B0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0000C0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0000D0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0000E0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0000F0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000100: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000110: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000120: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000130: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000140: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000150: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000160: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000170: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000180: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000190: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001A0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001B0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001C0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001D0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001E0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001F0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....

C:\OS\LAB\LAB1>type s.bat
..\..\bochs-2.3.5\bochs -q -f bochsrc.bxrc

C:\OS\LAB\LAB1>
```

```
Bochs for Windows - Console
Bochs for Windows - Display
Panic
This message was generated by the bochs debugger.
Please report this message to the bochs developers.
Device: [BIOS]
Message: No bootable device.
Continue
Continue and don't ask again.
Abort (dump core)
OK
Cancel

Booting from Floppy...
Boot from Floppy failed: not a bootable disk
FATAL: No bootable device.

C:\OS\LAB\LAB1>s
..\..\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 bochsout.txt
```

```
Bochs for Windows - Console
000100: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000100: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001A0:
0001B0:
0001C0:
0001D0:
0001E0:
0001F0:
Bochs for Windows - Display
MSCDEX Version 2.23
Copyright (C) Microsoft Corp. 1986-1993. All rights reserved.
Drive R: = Driver DSLAB unit 0
C:\OS\A:\>format B: /S
..\>Insert new diskette for drive B:
and press ENTER when ready...
C:\OS\A:\>
Checking existing disk format.
C:\OS\A:\>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
# In b
512 bytes in each allocation unit.
Bochs 1 2,414 allocation units available on disk.
[WGUI ]
Volume Serial Number is 2F2A-1EE6
C:\OS\A:\>Format another (Y/N)?y
C:\OS\A:\>CTRL + Lbutton + Rbutton enables mo A: B: HD:0-M CD:0-S NUM CAPS SCRL
C:\OS\Bochs-2.3.5\dos>..\bochs -q -f bochsrc2.txt
00000000000i[APIC?] local apic in initializing
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
00000000000i[ ] reading configuration from bochsrc2.txt
00000000000i[ ] installing win32 module as the Bochs GUI
00000000000i[ ] using log file bochsout.txt
```

```
Bochs for Windows - Console
000100: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000100: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
0001A0:
0001B0:
0001C0:
0001D0:
0001E0:
0001F0:
Bochs for Windows - Display
Volume Serial Number is 2F2A-1EE6
Format another (Y/N)?y
C:\OS\A:\>Insert new diskette for drive B:
and press ENTER when ready...
C:\OS\A:\>
Checking existing disk format.
C:\OS\A:\>Verifying 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
# In b
512 bytes in each allocation unit.
Bochs 1 2,414 allocation units available on disk.
[WGUI ]
Volume Serial Number is 405E-1F00
C:\OS\A:\>Format another (Y/N)?n
C:\OS\A:\>CTRL + Lbutton + Rbutton enables mo A: B: HD:0-M CD:0-S NUM CAPS SCRL
C:\OS\Bochs-2.3.5\dos>..\bochs -q -f bochsrc2.txt
00000000000i[APIC?] local apic in initializing
Bochs x86 Emulator 2.3.5
Build from CVS snapshot, on September 16, 2007
00000000000i[ ] reading configuration from bochsrc2.txt
00000000000i[ ] installing win32 module as the Bochs GUI
00000000000i[ ] using log file bochsout.txt
```

```
C:\WINDOWS\system32\cmd.exe

C:\OS\LAB\LAB1>type s.bat
..\..\bochs-2.3.5\bochs -q -f bochsrc.bxrc

C:\OS\LAB\LAB1>s

C:\OS\LAB\LAB1>..\..\bochs-2.3.5\bochs -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 bochsout.txt
# In bx_win32_gui_c::exit(void)!
=====
Bochs is exiting with the following message:
[WGUI ] POWER button turned off.
=====

C:\OS\LAB\LAB1>dosfp

C:\OS\LAB\LAB1>cd "..\..\Bochs-2.3.5\dos"

C:\OS\Bochs-2.3.5\dos>..\bochs -q -f bochsrc2.txt
0000000000i[APIC?] local apic in  initializing
=====
                Bochs x86 Emulator 2.3.5
                Build from CVS snapshot, on September 16, 2007
=====
0000000000i[      ] reading configuration from bochsrc2.txt
0000000000i[      ] installing win32 module as the Bochs GUI
0000000000i[      ] using log file bochsout.txt
# In bx_win32_gui_c::exit(void)!
=====
Bochs is exiting with the following message:
[WGUI ] POWER button turned off.
=====

C:\OS\Bochs-2.3.5\dos>cd "C:\os\lab\lab1"

C:\OS\LAB\LAB1>
```

Sekian Terimakasih.