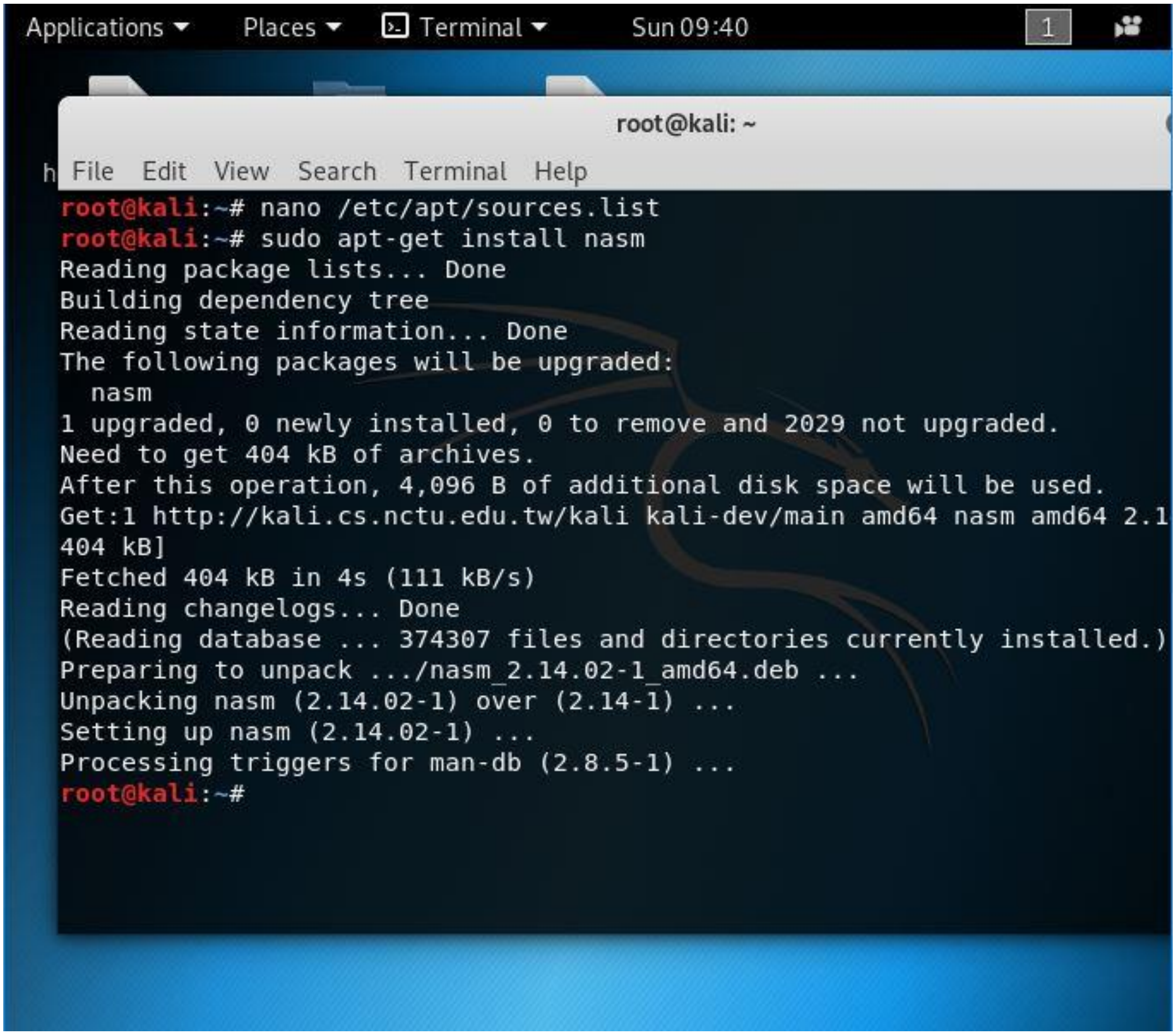
ShellCode

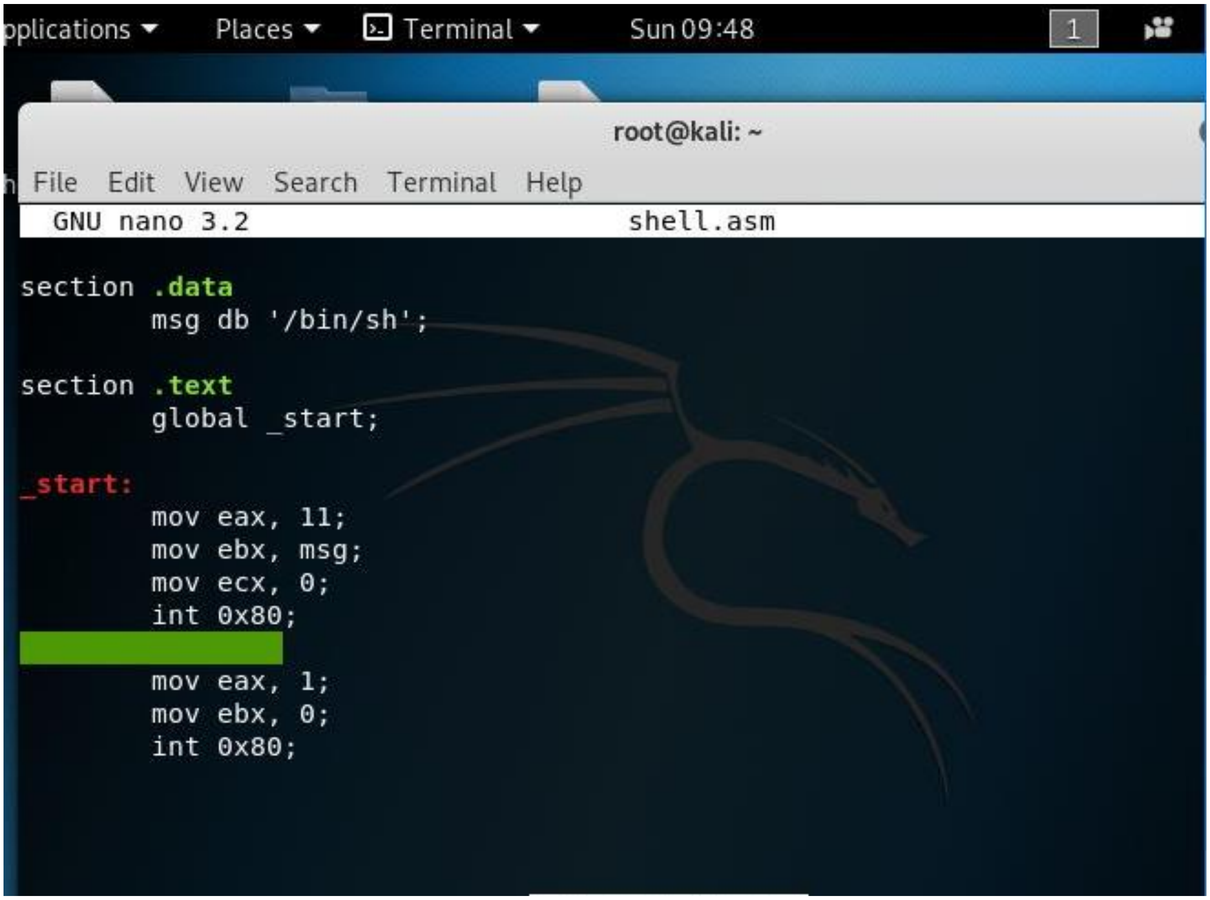
Part 1

Installing nasm:



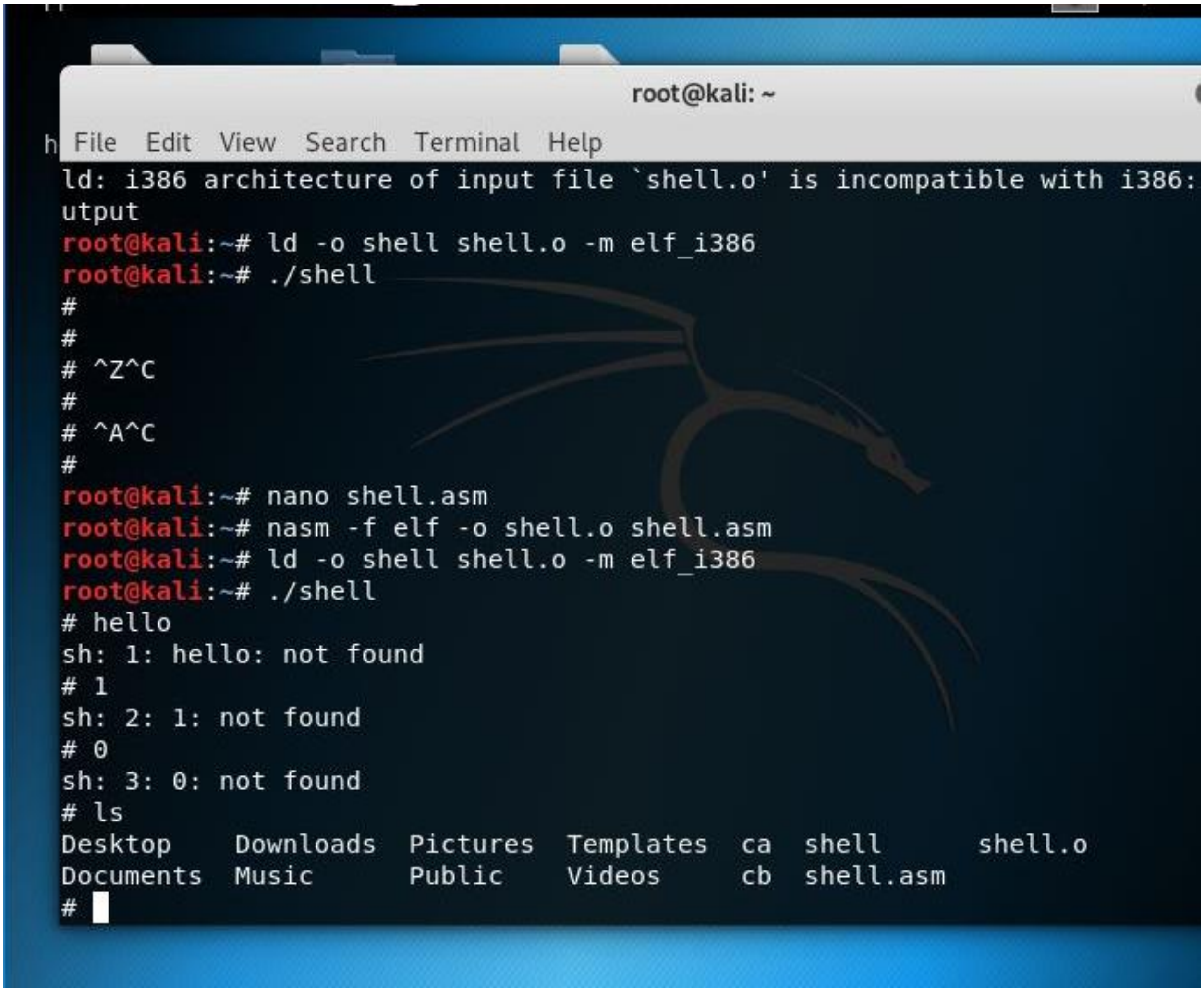
```
root@kali:~# nano /etc/apt/sources.list
root@kali:~# sudo apt-get install nasm
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages will be upgraded:
  nasm
1 upgraded, 0 newly installed, 0 to remove and 2029 not upgraded.
Need to get 404 kB of archives.
After this operation, 4,096 B of additional disk space will be used.
Get:1 http://kali.cs.nctu.edu.tw/kali kali-dev/main amd64 nasm amd64 2.1
404 kB]
Fetched 404 kB in 4s (111 kB/s)
Reading changelogs... Done
(Reading database ... 374307 files and directories currently installed.)
Preparing to unpack .../nasm_2.14.02-1_amd64.deb ...
Unpacking nasm (2.14.02-1) over (2.14-1) ...
Setting up nasm (2.14.02-1) ...
Processing triggers for man-db (2.8.5-1) ...
root@kali:~#
```

This is the assembly program: shell.asm



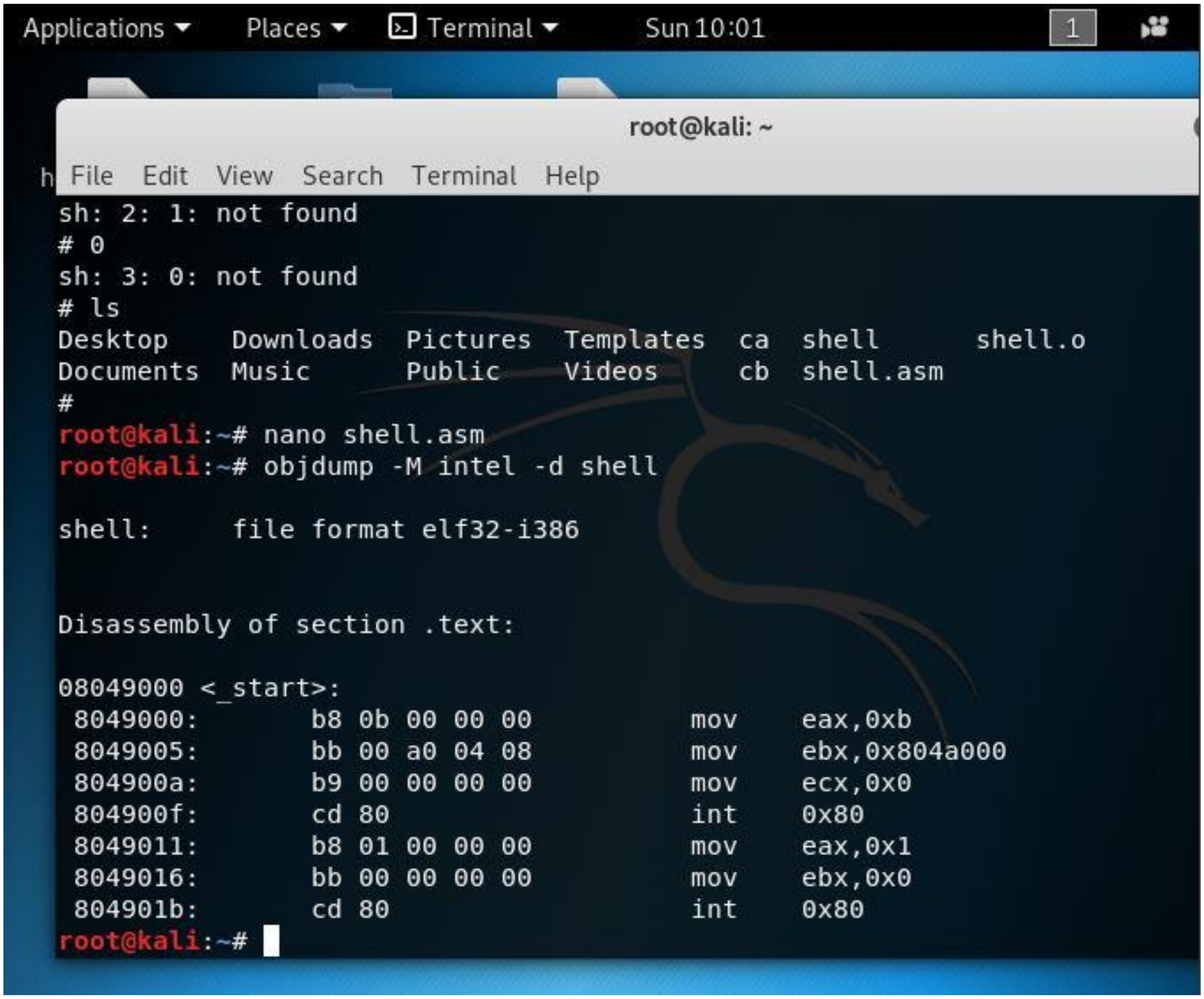
```
section .data
        msg db '/bin/sh';

section .text
        global _start;

_start:
        mov eax, 11;
        mov ebx, msg;
        mov ecx, 0;
        int 0x80;

        mov eax, 1;
        mov ebx, 0;
        int 0x80;
```

Compiling and running the shell:



```
ld: i386 architecture of input file `shell.o' is incompatible with i386:
utput
root@kali:~# ld -o shell shell.o -m elf_i386
root@kali:~# ./shell
#
#
# ^Z^C
#
# ^A^C
#
root@kali:~# nano shell.asm
root@kali:~# nasm -f elf -o shell.o shell.asm
root@kali:~# ld -o shell shell.o -m elf_i386
root@kali:~# ./shell
# hello
sh: 1: hello: not found
# 1
sh: 2: 1: not found
# 0
sh: 3: 0: not found
# ls
Desktop    Downloads  Pictures  Templates  ca  shell      shell.o
Documents  Music      Public    Videos     cb  shell.asm
# 
```

Extracting the shellcode:



```
sh: 2: 1: not found
# 0
sh: 3: 0: not found
# ls
Desktop    Downloads  Pictures  Templates  ca  shell      shell.o
Documents  Music      Public    Videos     cb  shell.asm
#
root@kali:~# nano shell.asm
root@kali:~# objdump -M intel -d shell

shell:     file format elf32-i386


Disassembly of section .text:

08049000 <_start>:
 8049000:       b8 0b 00 00 00          mov    eax,0xb
 8049005:       bb 00 a0 04 08          mov    ebx,0x804a000
 804900a:       b9 00 00 00 00          mov    ecx,0x0
 804900f:       cd 80                   int    0x80
 8049011:       b8 01 00 00 00          mov    eax,0x1
 8049016:       bb 00 00 00 00          mov    ebx,0x0
 804901b:       cd 80                   int    0x80
root@kali:~# 
```