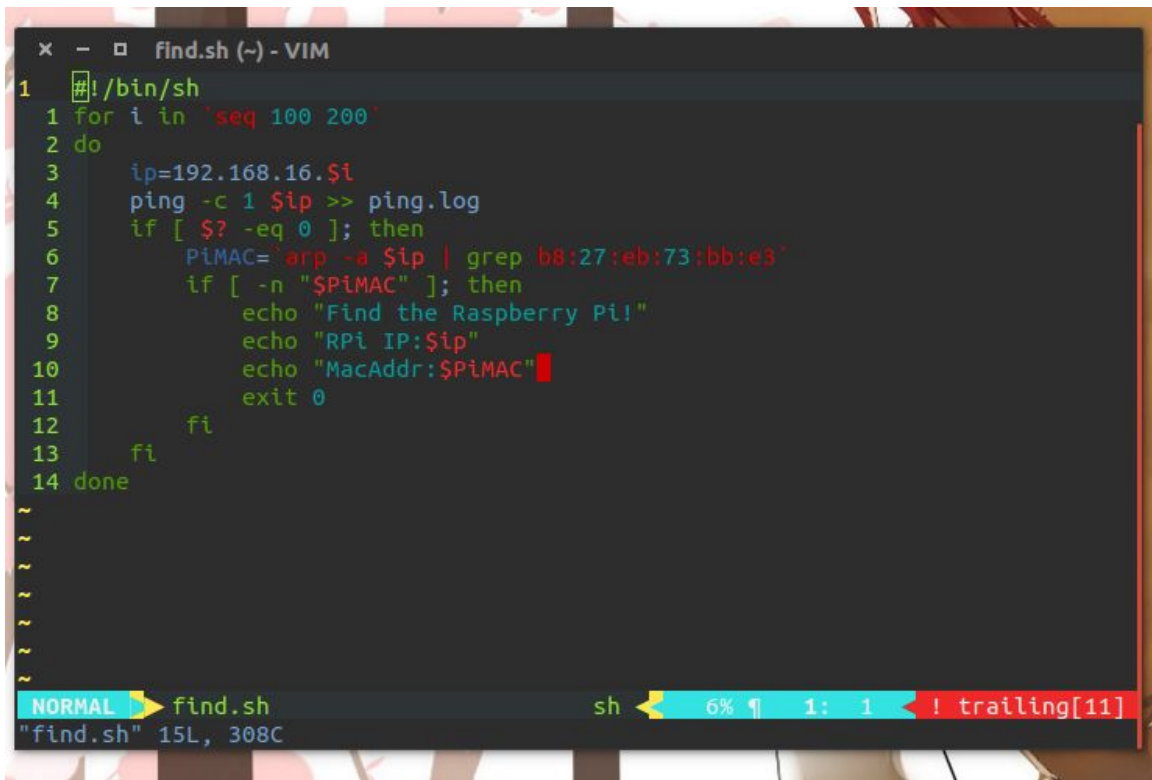# Task2.Find RPi in LAN

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Use the shell to make a program to ping all the IP that is available in the LAN.
The LAN IP in our room begins at 192.168.16.100, ends at 192.168.16.200.

The following program is to ping every ip and get its mac address (when the packets is send successfully), then match it with the given address of RPi.

Program ends when the RPi is found or every ip of the LAN is searched.

The ping result is redirected to ping.log .

```sh
#!/bin/sh
for i in `seq 100 200`
do
    ip=192.168.16.$i
    ping -c 1 $ip >> ping.log
    if [ $? -eq 0 ]; then
        PiMAC=`arp -a $ip | grep b8:27:eb:73:bb:e3`
        if [ -n "$PiMAC" ]; then
            echo "Find the Raspberry Pi!"
            echo "RPi IP:$ip"
            echo "MacAddr:$PiMAC"
            exit 0
        fi
    fi
done
```

```
x — ☐   tiny@WyTiny: ~
PING 192.168.16.110 (192.168.16.110) 56(84) bytes of data.

--- 192.168.16.110 ping statistics ---
1 packets transmitted, 0 received, 100% packet loss, time 0ms

PING 192.168.16.111 (192.168.16.111) 56(84) bytes of data.
From 192.168.16.109 icmp_seq=1 Destination Host Unreachable

--- 192.168.16.111 ping statistics ---
1 packets transmitted, 0 received, +1 errors, 100% packet loss, time 0ms

PING 192.168.16.112 (192.168.16.112) 56(84) bytes of data.
From 192.168.16.109 icmp_seq=1 Destination Host Unreachable

--- 192.168.16.112 ping statistics ---
1 packets transmitted, 0 received, +1 errors, 100% packet loss, time 0ms

PING 192.168.16.113 (192.168.16.113) 56(84) bytes of data.
64 bytes from 192.168.16.113: icmp_seq=1 ttl=64 time=21.5 ms

--- 192.168.16.113 ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 21.510/21.510/21.510/0.000 ms
tiny@WyTiny:~$
```

```
x — ☐   tiny@WyTiny: ~
BackUp      Music                         Tiny           Work
Desktop     Pictures                      tiny-tmp       workspace
Documents   PlayOnLinux's virtual drives  tmp            ZJU
Downloads   Public                        Videos
iso         PycharmProjects               VirtualSystem
tiny@WyTiny:~$ rm log.ping
tiny@WyTiny:~$ touch ping.log
tiny@WyTiny:~$ ls
;           kernel                        Snapshots      vmware
a.sh        Music                         Templates      webstormProjects
BackUp      Pictures                      Tiny           Work
Desktop     ping.log                      tiny-tmp       workspace
Documents   PlayOnLinux's virtual drives  tmp            ZJU
Downloads   Public                        Videos
iso         PycharmProjects               VirtualSystem
tiny@WyTiny:~$ rm ;
rm: missing operand
Try 'rm --help' for more information.
tiny@WyTiny:~$ mv a.sh find.sh
tiny@WyTiny:~$ ./find.sh
Find the Raspberry Pi!
RPi IP:192.168.16.113
MacAddr:? (192.168.16.113) at b8:27:eb:73:bb:e3 [ether] on wlan0
tiny@WyTiny:~$
```