Report for Lab Assignment 1

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The first problem we encountered is how to get the absolute path to the directory where the shell script is located. In reference to the book, we use the **CUR_DIR=$(cd `dirname $0`; pwd)**, Among them, the **pwd** command aim to get the full path of the "current working directory". Then we use the **cd `dirname $0`** command to get the absolute path where the script is located.

And the next, we use the dict to handle these two problems, the first is which IP number get the most bytes sent to them(-t), we correspond one by one to the IP number of the number of bytes obtained by this IP number. The second is DNS names should be compared with each entry in the blacklist(-e), we load DNS blacklist and its corresponding IP number into dictionary.

Thirdly, regarding the option part, we first want to convert the DNS name to IP number. However, we found that several DNS names show that it's unknown host, then we set a waiting time which at most 1ms so that reduce the waiting time if this DNS name can't resolve during the ping process. (figure 1)

```
ping: cannot resolve admoda.com: Unknown host
ping: cannot resolve mobgold.com: Unknown host
ping: cannot resolve vcmedia.vn: Unknown host
ping: cannot resolve vrvm.com: Unknown host
ping: cannot resolve mojiva.com: Unknown host
ping: cannot resolve 2mdn.net: Unknown host
ping: cannot resolve mocean.mobi: Unknown host
ping: cannot resolve where.com: Unknown host
ping: cannot resolve ybcdn.net: Unknown host
ping: cannot resolve ubiyoo.com: Unknown host
ping: cannot resolve rackcdn.com: Unknown host
ping: cannot resolve adultmoda.com: Unknown host
```

Figure 1

Finally, after some testing, we find we overlooked that when option n not given in option part. In order to get top result when the option **n** not given, we use the following code to output all results.(figure 2)

```
do
    # get top result. if option n not given, output all results
    if [ $SHOW_CNT -ne 0 -a $SHOW_NUM -ge $SHOW_CNT ];then
        break
    fi
```

Figure 2