



## Q1: IP-Scanner

Starting from the IP 10.243.1.1 until the IP=10.243.23.254

- Discover which device is alive (reachable within 1500 millisecond) and print its name.
- Discover which host is your Pc and print its name and MAC address of the network interface.

*Hint: Define array of byte {10, (byte) 243, 23, 1};*

### Sample Run

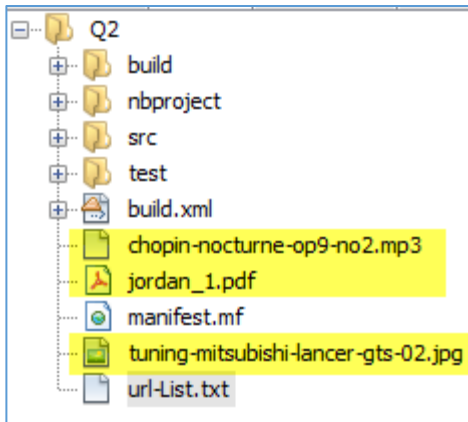
```
10.243.23.97
CIT-SSuleiman-PH3-L-1.just.edu.jo
MY NIC=Broadcom NetLink (TM) Gigabit Ethernet
MY MAC=[B@6d06d69c
10.243.23.104
10.243.23.113
10.243.23.114
10.243.23.129
lab3-03-04.just.edu.jo
lab3-01-01.just.edu.jo
10.243.23.143
10.243.23.161
lab1-01-04.just.edu.jo
lab1-01-03.just.edu.jo
lab1-01-01.just.edu.jo
lab1-03-03.just.edu.jo
lab1-03-04.just.edu.jo
10.243.23.193
10.243.23.194
lab1-05-04.just.edu.jo
lab2-05-04.just.edu.jo
lab1-04-04.just.edu.jo
10.243.23.202
lab1-04-05.just.edu.jo
lab1-04-06.just.edu.jo
10.243.23.205
lab1-05-06.just.edu.jo
lab2-04-06.just.edu.jo
lab2-04-07.just.edu.jo
lab2-03-07.just.edu.jo
10.243.23.225
10.243.23.227
lab3-02-01.just.edu.jo
lab3-03-01.just.edu.jo
BUILD SUCCESSFUL (total time: 6 minutes 10 seconds)
```

## Q2: URL Downloader

Reading the URL list in the given file, print the ip(s) for the url that its host has more than one IP, for these url(s) that has only one IP, test wither it has a file and if so download it with the same file name as in the url, when the url has one IP and has no file then just print its protocol.



### Sample Run



```
www.mfiles.co.uk has one IP:
www.mfiles.co.uk has File:chopin-nocturne-op9-no2.mp3
*****Downloading*****

filehippo.comhas many IP(s):
filehippo.com/151.101.194.217
filehippo.com/151.101.66.217
filehippo.com/151.101.130.217
filehippo.com/151.101.2.217
*****

gr8autophoto.com has one IP:
gr8autophoto.com has File:tuning-mitsubishi-lancer-gts-02.jpg
*****Downloading*****

www.just.edu.jo has one IP:
www.just.edu.jo has no File:
Protocol:http

www.timeshighereducation.com has one IP:
www.timeshighereducation.com has File:jordan_1.pdf
*****Downloading*****

BUILD SUCCESSFUL (total time: 57 seconds)
```

### Q3: Threads (Choose a or b)

- a) I have three quite large files {File1.txt, File2.txt, File3.txt} and when searching for a given letter (i.e 'a' or 'A') in each file it takes a reasonable time to print the result. Can you enhance the result using the thread? (Do not use the buffer).

### Sample Run

```
run:
File1.txt=67152
File2.txt=162864
File4.txt=265416
BUILD SUCCESSFUL (total time: 47 seconds)
```

Q3: counting without Thread (Serial manner)



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b) Resolve either Q2 or Q3 using the Thread.

```
MY NIC=Broadcom NetLink (TM) Gigabit Ethernet
MY MAC=[B@101d1f03
10.243.23.137
lab3-05-03.just.edu.jo
lab1-01-01.just.edu.jo
lab1-03-04.just.edu.jo
10.243.23.75
10.243.23.74
lab1-04-04.just.edu.jo
10.243.23.104
lab2-03-07.just.edu.jo
10.243.23.81
lab1-03-06.just.edu.jo
lab1-02-02.just.edu.jo
lab2-03-07.just.edu.jo
lab2-04-07.just.edu.jo
lab1-01-03.just.edu.jo
lab1-04-06.just.edu.jo
lab1-02-03.just.edu.jo
lab2-04-06.just.edu.jo
lab1-04-03.just.edu.jo
10.243.23.82
lab3-04-01.just.edu.jo
lab1-03-05.just.edu.jo
lab1-01-04.just.edu.jo
10.243.23.194
lab2-05-04.just.edu.jo
10.243.23.85
10.243.23.97
BUILD SUCCESSFUL (total time: 7 seconds)
```

Q1: IP-Scanner with Thread

```
www.just.edu.jo has one IP:
www.just.edu.jo has no File:
Protocol:http

www.mfiles.co.uk has one IP:
www.mfiles.co.uk has File:chopin-nocturne-op9-no2.mp3
*****Downloading*****

www.timeshighereducation.com has one IP:
www.timeshighereducation.com has File:jordan_1.pdf
*****Downloading*****

filehippo.comhas many IP(s):
filehippo.com/151.101.130.217
filehippo.com/151.101.2.217
filehippo.com/151.101.194.217
filehippo.com/151.101.66.217
*****

gr8autophoto.com has one IP:
gr8autophoto.com has File:tuning-mitsubishi-lancer-gts-02.jpg
*****Downloading*****

BUILD SUCCESSFUL (total time: 32 seconds)
```

Q2: URL Downloader with Thread



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