

Assignment #1 Marking Scheme

CS 3C03 / SE 4C03: Computer Networks & Security

TOTAL: 10 marks

- **6 marks:** Test Case
 - **3 marks** are awarded for a correct output before the cache size is reached
 - **2 marks** are awarded for a correct output after the cache size is reached
 - **1 mark** is awarded for formatting the output as given in the assignment description
- **4 marks:** Written Report
 - **1 mark** is awarded for describing how you solved the problem
 - **1 mark** is awarded for describing how your program was tested and including a sample run of your program (and an output dump of the sample run)
 - **2 marks** are awarded for describing your design decisions
 - * **1 mark** for deciding what happens if a particular MAC-address is discovered to be associated with two ports
 - * **1 mark** for deciding how to update the trie efficiently after deleting the least-recently-used entry
- **–1 mark** if you hardcoded the input file name instead of prompting the user either via command line or user prompt

NOTE

An assignment that does not run (on MOORE and/or MILLS) receives a mark of **0**. You may receive up to **3** extra marks for well-done written report.

TEST CASE:

Input:

64

16

51 2C:37:BB:25:74:F8 B8:97:D7:45:34:FF
32 AA:F1:35:C5:94:E3 88:87:47:DE:D4:32
12 AB:E2:46:2C:78:11 AA:F1:35:C5:94:E3
23 86:61:23:E4:10:D5 29:3B:8D:C9:B1:AE
19 86:61:23:E4:10:D4 86:61:23:E4:10:D5
44 D1:38:10:F5:1D:21 86:61:23:E4:10:D4
33 A0:E3:80:6B:62:29 A0:E3:80:6B:62:29
14 BE:6E:3C:3F:D9:9F 69:2B:84:99:AC:B4
38 E2:99:0D:67:13:2F BE:6E:3C:3F:D9:9F
20 9D:3C:24:0C:76:0E 98:D1:C1:24:35:8F
21 9D:3C:24:0C:76:0E 7D:F4:FD:BA:34:D7
64 59:9D:02:DE:36:AF 17:26:CA:7E:A8:E6
17 92:19:48:9F:80:5B CA:FF:09:19:CC:5A
55 CF:1E:97:F3:2B:0D 01:C4:DE:C3:E9:14
60 29:F4:6E:39:E9:8C 2C:37:BB:25:74:F8
42 53:66:09:51:21:3D CF:1E:97:F3:2B:0D
63 28:7A:DB:2B:58:12 CA:FF:09:19:CC:5A
26 A0:E3:80:6B:62:29 E2:E7:4F:CD:51:86
18 52:E5:30:80:2F:49 28:7A:DB:2B:58:12
51 EC:58:84:7A:22:36 CA:FF:09:19:CC:5A
51 2C:37:BB:25:74:F8 B8:97:D7:45:34:FF
32 FA:F1:35:C5:94:E3 88:87:47:DE:D4:32
12 AB:E2:46:2C:78:11 AA:F1:35:C5:94:E3
17 17:26:CA:7E:A8:E6 9D:3C:24:0C:76:0E

Expected Output:

This is a sample out. This may vary depending on some design decisions that were made, e.g., what you do if a particular MAC-address is discovered to be associated with two ports. These variations will be taken into account when the assignment is being marked. In particular, this output assumes that the most recent port number associated with a MAC-address is used.

```
B8:97:D7:45:34:FF all ports except 51
88:87:47:DE:D4:32 all ports except 32
AA:F1:35:C5:94:E3 Root --> A --> AA --> port 32
29:3B:8D:C9:B1:AE all ports except 23
86:61:23:E4:10:D5 Root --> 8 --> 86 --> 866 --> 8661 --> 86612 --> 866123 --> 866123E
--> 866123E4 --> 866123E41 --> 866123E410 --> 866123E410D --> 866123E410D5 --> port 23
86:61:23:E4:10:D4 Root --> 8 --> 86 --> 866 --> 8661 --> 86612 --> 866123 --> 866123E
--> 866123E4 --> 866123E41 --> 866123E410 --> 866123E410D --> 866123E410D4 --> port 19
A0:E3:80:6B:62:29 Root --> A --> A0 --> port 33
69:2B:84:99:AC:B4 all ports except 14
BE:6E:3C:3F:D9:9F Root --> B --> port 14
98:D1:C1:24:35:8F all ports except 20
7D:F4:FD:BA:34:D7 all ports except 21
17:26:CA:7E:A8:E6 all ports except 64
CA:FF:09:19:CC:5A all ports except 17
01:C4:DE:C3:E9:14 all ports except 55
2C:37:BB:25:74:F8 Root --> 2 --> 2C --> port 51
CF:1E:97:F3:2B:0D Root --> C --> port 55
CA:FF:09:19:CC:5A all ports except 63
E2:E7:4F:CD:51:86 all ports except 26
28:7A:DB:2B:58:12 Root --> 2 --> 28 --> port 63
CA:FF:09:19:CC:5A all ports except 51
B8:97:D7:45:34:FF all ports except 51
88:87:47:DE:D4:32 all ports except 32
AA:F1:35:C5:94:E3 all ports except 12
9D:3C:24:0C:76:0E Root --> 9 --> 9D --> port 21
```