Computer Networks
Jacobs University Bremen
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Course: 320301
Date: 2014-09-26
Due: 2014-10-03

Problem Sheet #2

Problem 2.1: *ethernet traffic monitor* (10 points)

Write a traffic monitor that periodically displays the amount of traffic observed on a network interface (or all network interfaces). The program should display a top-N traffic matrix showing the top N stations generating traffic. Stations are identified by their MAC addresses. For each src/dst pair, display the number of frames that your monitor has seen as well as the sum of octets exchanged (including layer two headers).

```
 src          dst | 7c:d1:c3:dc:50:bd | 00:e0:81:47:c9:34 |
-----------------+-------------------+-------------------+
7c:d1:c3:dc:50:bd |    0 p,  0 B      | 2345 p, 5432 kB   |
00:e0:81:47:c9:34 | 1234 p, 5432 kB   |    0 p, 0 B       |
```

Your program should be able to read live data from all interfaces (default), from a specific interface (-i option), or recorded data from a `.pcap` file (-f option). Output should be generated every 5 seconds while doing a live capture (adjustable using the -d option). While reading a pcap file, output is only generated at when the end of the file has been reached. The default is to show the top three talkers (adjustable using the -N option) in terms of octets exchanged in both directions.