1. Lab description

Implement packet classification algorithm for IPV4 using Grid-of-Tries for two-dimensional matching.
Algorithm can be implemented using C/C++/Java.

Command Line Invocation

./grt -p rulefile -i inputaddrfile -o outputfile

2. Input Files
Number of bits in the prefix W =16.
Minimum number of bits in the prefix is 8.
Maximum number of entries in rulefile is 100,000.
Maximum number of  entries in inputaddrfile is 10000.

Rulefile: In each line, the first entry is the rule number. There are two prefix entries, each of which has two fields: IP address prefix (in IP dotted decimal format, 2 decimal number) and prefix length (in bits). For e.g-

| | | | | |
|---|---|---|---|---|
| 1 | 128.16 | 12 | 130.205 | 16 |
| 2 | 112.36 | 14 | 112.0 | 8 |
| | ... | ... | | |

Inputaddrfile: Two entries per line. Each entry has a prefix value in IP dotted decimal format with 2 decimal numbers. For e.g-

| | |
|---|---|
| 128.18 | 130.205 |
| 112.38 | 112.34 |
| ... | |

3. Output Files
For e.g

| Address 1 | Address 2 | No. of matches | Rules matched | Search time (ms or micro-sec) |
|---|---|---|---|---|
| 128.18 | 130.205 | 1 | 1 | 45 |
| 112.38 | 112.34 | 1 | 2 | 25 |

At the end of the file one line should report:

Average Search time is ... (ms) or ... (micro-sec)

4. Rulefile can have sizes: 10,000, 50,000, 80,000, 100,000