## Theoretical assignment

1. Suppose we have a router that connects three different subnets: Subnet 1, Subnet 2 and Subnet 3 and that all interfaces in the three subnets must have the address prefix 223.1.17/24. Suppose also that Subnet 1 should contain up to 63 interfaces, Subnet 2 should contain up to 95 interface and Subnet 3 should contain up to 16 interface. Given these conditions, give examples of how the network addresses (of the form abcd / x) for the three subnets could look like.

2. You want to send a UDP datagram that is 3500 bytes long. A link on the path has an MTU of 1024 bytes. How does the fragments that arrive at the receiver look like?

3. CSMA/CD includes an exponential backoff phase. How large is the probability of getting a K value of 4 after five collisions? How long delay corresponds to K = 4 in a 100Mbps Ethernet?

4. Do the following exercise on MAC addresses and ARP

## Programming Task

The specification for the task is given in the PDF file below. The program should consist of the six C-files below, where you have to write new code in files node0.c, node1.c, node2.c and node3.c. Only the basic assignment has to be done.

## Requirements

The program should be test-run by a supervisor and answers to the questions as well as the code of the program should be submitted in it's learning.