

## ACN Course – Exercise I and II

### Instructions

**Send you exercises to:** mayutan.arumaithurai@cs.uni-goettingen.de

**Subject of email:** "submission of ACN course exercise I and II"

**name of zip folder:** <firstname>\_<lastname>\_<matriculation\_number>.zip

**Last date to submit:** 6/6/2019

### Exercise for ICN-I lecture (18.4.2019)

1. What is ICN/CCN/NDN? What are the benefits compared to standard IP ? (1 point)
2. Explain the Data structures of CCN? (1 point)
3. Is query response enough in NDN? Explain the need for pub/sub in NDN? (1 point)
4. Explain the packets and Subscription table in COPSS? (1 point)
5. Please draw and explain the router architecture for ICN. (1 point)
6. Write a simple application in ndnSim satisfying the following requirements (5 point)
  - \* at least a 3 node end-to-end topology with the 1st node representing Consumer, 1 or more intermediate nodes representing Routers and the last node representing Producer
  - \* The consumer generates 20 Interests (the Interest name should be either your name or your matriculation no) per second and the data rate of 1Mbps
  - \* The producer responds to all Interest the Interest with the prefix that you chose to send in Interest (either Name or Matriculation no)
  - \* The payload sent from the Producer should also contain your name or matriculation no.

### Exercise for ICN-II lecture (25.4.2019)

1. What is the need for Congestion control ? (1 point)
2. Explain how the congestion window grows and decreases in TCP (2 point)
3. What is multicast ? What is the need for congestion control in multicast? (1 point)
4. What is the crying baby problem? What does SAID do differently? (2 point)
5. Explain with an example the out-of-synch problem. (4 points)