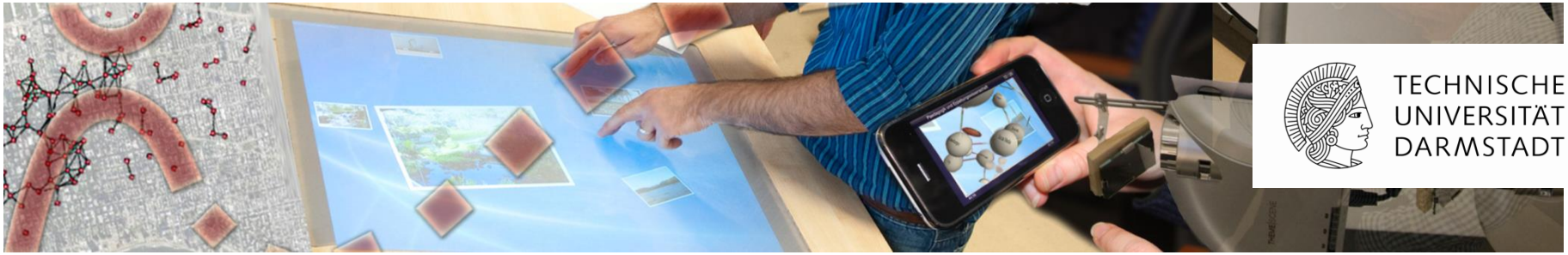
Telecooperation Lab
Prof. Dr. Max Mühlhäuser

Telekooperation 1: Exercise WS15/16

Michael Stein, MSc.
michael.stein@tk.informatik.tu-darmstadt.de
Jens Heuschkel, MSc.
jens.heuschkel@tk.informatik.tu-darmstadt.de



Tutoren gesucht!

Zur Betreuung der Übung „**Computer Netzwerke und verteilte Systeme**“

Aufgaben

- Betreuung von Übungsgruppen (2x wöchentlich)
- Übungen korrigieren

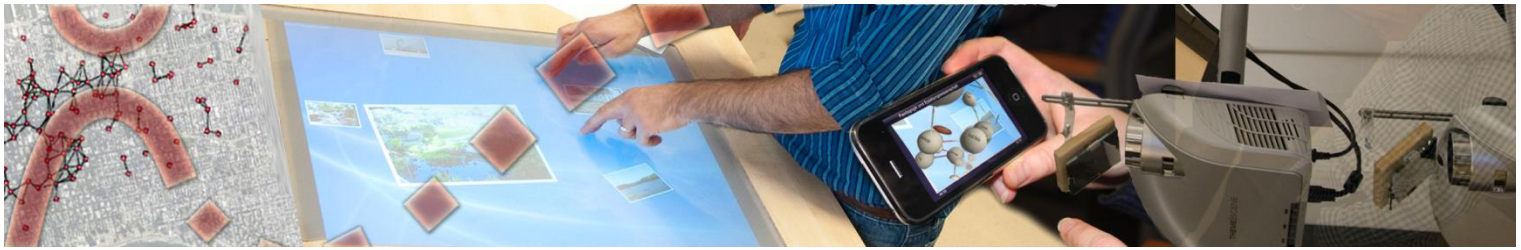
Voraussetzungen

- Vorlesung Net Centric Systems gehört/bestanden

Benefits

- StuHi-Vertrag für ein Semester (150 Stunden)
- Praktikum-in-der-Lehre Studienleistung

Bewerbungen an **kauschke@tk.tu-darmstadt.de**

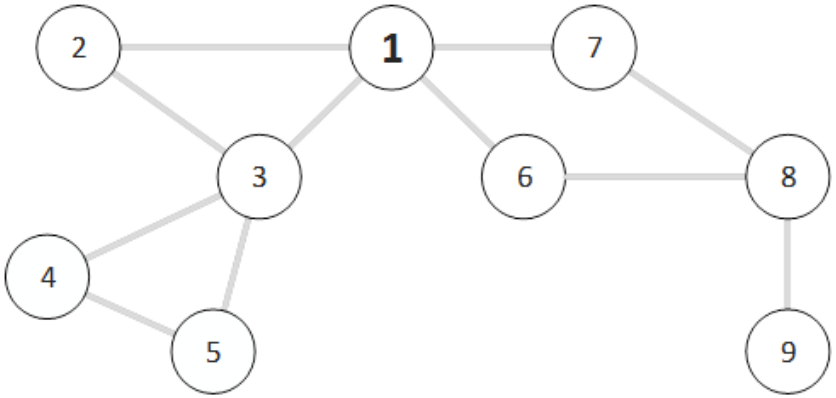


TK1 – EXERCISE
21.01.2016

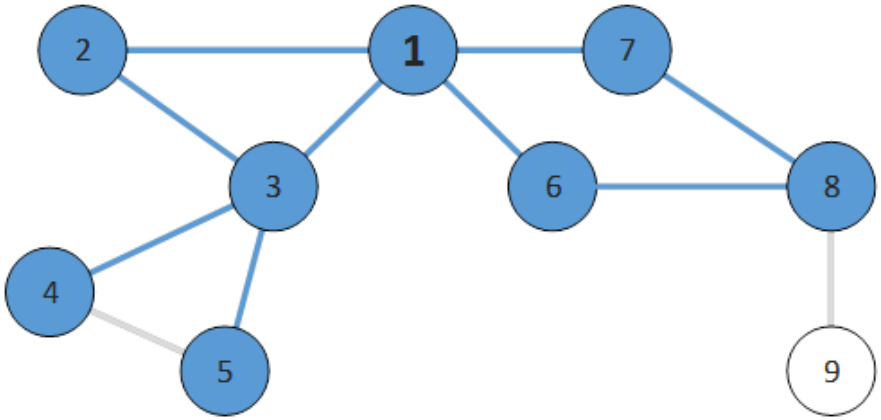
- Solution 7th Exercise
- 8th Theory Exercise

Task 1: Local View

Draw (based on the graph given below) for node 1 the 2-hop neighborhood graph $G_2(1)$.



Solution:



Task 2: LOCAL Model

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In the lecture two arguments were introduced that can be used to show that a certain problem cannot be solved in the LOCAL model. Name these two arguments. Also, for each of the arguments, give an example of a problem that cannot be solved because of the argument.

Solution:

- *Argument 1: Impossibility of Symmetry Breaking,*
  Example Problem: Assigning unique addresses in a graph
- *Argument 1: Inherently Non-Local Problem,*
  Example Problem: Construct a spanning tree

Task 3: Topology Control

Name one of the Topology Control algorithms introduced in the lecture. Which property that is particularly important for Greedy Perimeter Stateless Routing does this algorithm have?

Solution:

kTC, RNG or GG

Relevant property: The output graph is planar; i.e., the topology control algorithm removes crossing edges from the topology.