Technische Universität Berlin

Distributed Algorithms

Exercise 1&2:

Agenda

- Organization
- Submission guidlines
- Teachnet Introduction

Mareike Höger
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Room: EN-174
Phone: 030 314 78946
Office Hours: by appointment

Organizational matters

Material published on the ISIS website:

- lecture slides
- Guidelines & tools (e.g. code templates)

Exam authorization:

- 3 of the 4 exercise sheets have to be completed successfully
- Assignments consist of a theoretical and an implementation part.

Exercise schedule published on the ISIS website

Organizational matters

Procedure

- 4 projects
- 1 exercise Sheet per project
- Introductory presentation at beginning of a project
- Work in teams of 3-4 students
- After 2 weeks: presentation & explanation of solution by students
- Theoretical Part as PDF with group number and Names + Matrikelnr of Group members
- Implementation tar.gz or .zip
  - Group number and names + Matrikelnr in every class implemented
  - Short description in JavaDoc

Submission

```
/**
*group 0X
*Konrad Zuse 301910
*Carl Petri 301926
*Ada Lovelace 301815
*This class will help you understand the submission guidelines
*/
public class Submission {
    /**
    * This prints the confirmation that we understood what to do
    */
    public static void main (String[ ] args){
        System.out.println(„OK, i got it“);
    }
}
```

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Organizational matters

Project 1	Today	Introduction
	21.11.	Submission
Project 2	Today	Introduction
	12.12.	Submission
Project 3	2.1.	Introduction
	16.1.	Submission
Project 4	30.1.	Introduction
	13.2.	Submission

Organizational matters

- If you have questions please use the ISIS Discussion Forum
  - Other Students may help faster
  - The best way to learn something is to explain it to someone
  - Solutions will be available to everyone
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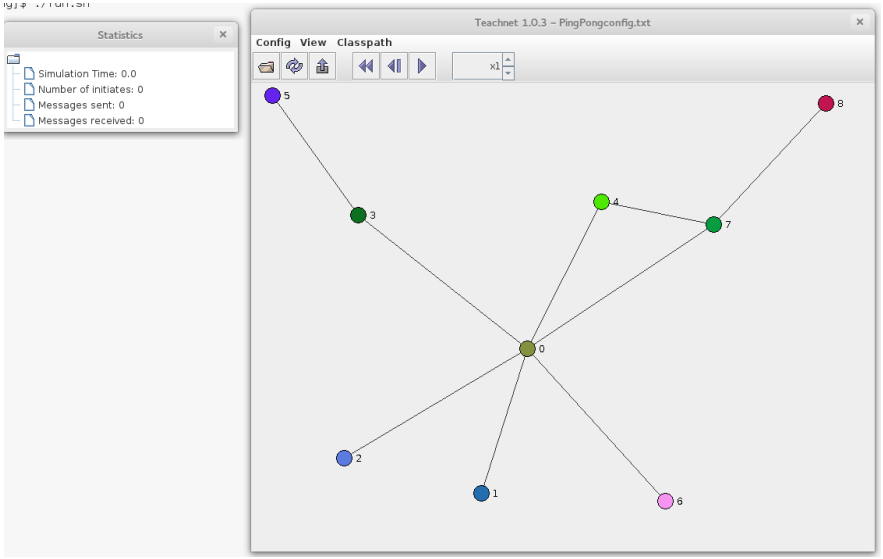
Teachnet

Event-driven simulation of distributed algorithms

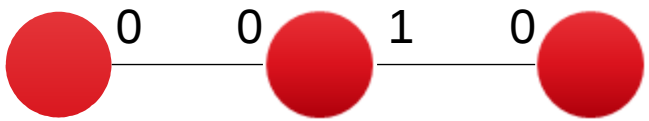
- Makes it easy to simulate distributed algorithms
- GUI for visualization
- Easy to write Algorithms
- Fast configurable to different graph settings



Teachnet

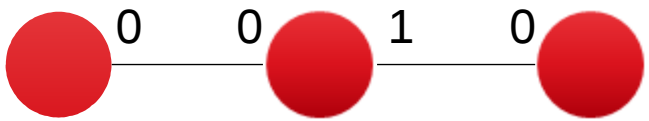
Configurable
- Create Topology
- Configure Network Properties
- Every Node will execute a Protocol
- Initialization of node

Each node has 0-n interfaces
Every connection between nodes is a connection between particular interfaces



Teachnet

- Topology does not change during simulation
- Channels are Reliable
- Channels are not ordered
- Channels are bidirectional
- Capacity is limited by executing machine



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How to work with Teachnet

- Definition of behavior of node and send messages
- Write Java class which extends BasicAlgorithm
- Implement the methods
  - void initiate()
  - void receive(int interface, Object message)
- Other needed methods
  - int checkInterface() gives number of interfaces
  - void send(int if, Object msg) sends the message **msg** to interface **if**
  - void setTimeout(double time, Object msg) calls timeout(**msg**) after **time**

How to work with Teachnet

- See documentation in the „doc“ directory and look at the templates in „templates“ directory
- **Please read the README**
- The guidlines.txt gives further Information about the submission.

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Demo

CIT
Complex and Distributed IT Systems

Now find Group members

- If you found a group please choose it on the ISIS Website.

Distributed Algorithms

Exercise 1&2:

FG Komplexe und Verteilte IT System | Distributed Algorithms

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Material im Netz, bemüht 1-2 Tage vor Begin eines neuen Übungszyklus

Durchführung:

4 Projekte

Je 1 Aufgabenzettel

Einführungsvortrag zu Beginn jedes Projekts

Bearbeitung in 2-3er Teams (Heimarbeit)

Nach 2 Wochen Präsentation und Erläuterung der Lösung

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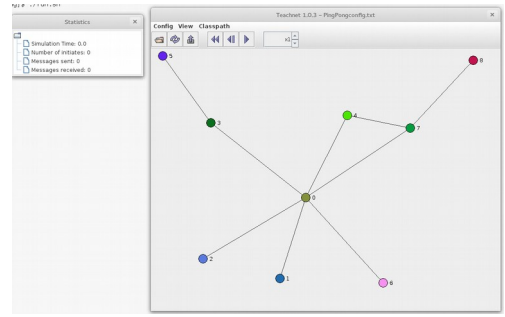

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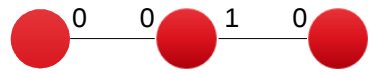

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