Project Intelligent Robotics
Assignment #3

On this assignment, you will learn to use the communication possibilities of ROS. You already used existing messages and worked with them. Now you will learn to use services and design your own interfaces.

Task 3.1 Write a simple server and a client node:

3.1.1: Write a service with a request and a response. You will find useful information in this tutorials:

```
http://wiki.ros.org/ROS/Tutorials/WritingServiceClient(python)
http://wiki.ros.org/ROS/Tutorials/WritingServiceClient(c++)
```

Define a common service type with all project members!

3.1.2: Write a simple server that gets an integer and answers with $integer + 1$.

3.1.3: Commit your code to the common git repository for this project:

```
https://gogs.mafiasi.de/TAMS/project18
```

You should

1. make sure to use an appropriate subfolder in the repository to keep your code separated from the other groups,

2. checkout the repository inside your $\sim$/ros_ws/src directory to have it included by the catkin build system,

3. coordinate the structure of your repository with the other groups in advance.

3.1.4: Write a client that uses a service from one of the other groups.

Task 3.2 Count collaboratively:
Now write several nodes (one per group) that perform a collaborative count from 1 to 20. Every node has to do at least one counting step. Run the nodes on different computers.

For this task the whole group has to work together. Make sure that everybody has accomplished assignment #1 and #2. Discuss assignment #3 in a group meeting before you start.

3.2.1: Gather as a group and work on a concept to reach this goal. Plan your communication.

3.2.2: Write the nodes in small groups

3.2.3: Start the nodes on different computers. Make sure that each node registers at the same ROS master.