Ant Colony Optimization

1 WORK DURING THE LAB

1. Implement the **Ant System (AS)** variant of **Ant Colony Optimization (ACO)** algorithm to solve TSP.
    a. Check what happens in one iteration for 10 ants.
    b. Determine the global best after 10 iterations.
2. Test the algorithm using different parameter settings.

Points for the work during the lab: **25p**

2 ASSIGNMENT A8

1. Implement the **Ant Colony System (ACS)** variant of ACO to solve TSP.
2. Perform experiments for the two TSP instances selected in the previous labs.
3. Test the algorithm using different parameter settings.

Deadline to submit A8: **Lab 9**

Points for A8: **25p**

3 REQUIREMENTS

1. Source code (notebook) needs to be documented.
2. Algorithms have to be tested for several parameter values (sufficient to clearly determine performance).
3. Experiments must be performed for all available problem instances and results compared for diferent parameter settings.
4. Results of the experiments need to be saved in output files, indicating solution quality, parameter values used, number of runs.
5. A report should capture the following: problem definition, algorithm used (name, steps/pseudocode), parameter setting, comparative results of experiments, discussion of results.