Multi-Agent Programming Contest 2017
Participation Registration

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Introduction

1. What is the name of your team?

   Chameleon
2. Who are the members of your team? Please provide names, academic degrees and institutions.

   Milad Momeni (MSc Student at SBU);
   Sara Marahemi (MSc Student at SBU);
   Mojtaba Nouroozi (MSc Student at SBU);
   Ehsan Emami (MSc Student at SBU);
   Peyman Hassan Abadi (MSc Student at SBU)
3. Who is the main-contact? Please also provide an Email address.

   Milad Momeni (miladmomeni1372@gmail.com)
4. How much time (developer hours) will you have invested (approximately) until the tournament?
   Approximately 70 Man hours.

System Analysis and Design

1. Briefly, what is the **main strategy** of the team?

   At the begging of the tournament, the agents seek for basic spots like shops and charge stations. Afterwards, we should receive and sort the incoming jobs based on their priorities. Now, we should peek a job from top of the sorted list and divide the picked job to certain task which is feasible for each of the agents. In order to achieve better scores, we proposed some algorithms to post specific jobs and hit the opponent team.
2. Will you use any existing multi-agent system **methodology** such as Prometheus, O-MaSE, or Tropos?

   Yes

3. Do you plan to **distribute** your agents on several machines?

   No
4. Is your solution based on the **centralisation** of coordination/information on a specific agent? Conversely if you plan a decentralised solution, which strategy do you plan to use?

   Our implementation is centralized.
5. Describe the **communication strategy** in the agent team. Can you estimate the communication complexity of your approach?

   Agents communicate with each other under the Mesh topology and token ring protocol. The order of this communication is O(mn).
6. Describe the team **coordination strategy** (if any).

   We use token ring beside the OLSR (Optimized Link State Routing Protocol) to have the best performance in agents' communications.
7. How are the following agent features implemented: *autonomy*, *proactiveness*, *reactiveness*?

   - autonomy: In many cases our agents are autonomous so that each of them can oprate complete the jobs alone.
   - proactiveness: Choosing the best job, optimum path for shopping and schedule when to charge the agents are procactive.
   - reactiveness: The reaction to new events are planned and implemented. The reactiveness in this system is obtained by changing certain strategies in specific times and conditions.

Software Architecture

1. Which **programming language** do you plan to use to implement the multi-agent system? (e.g. 2APL, Jason, Jadex, JIAC, Goal, Java, C++, ...)

   Java
2. Which **development** platform and tools are you planning to use?

   NetBeans
3. Which **runtime** platform and tools are you planning to use?

   Java (e.g. Jade, AgentScape, simply Java, ...)
4. Which **algorithms** will be used?

   OLSR, Token ring and a few novel algorithm.

Please explain the reasons for your answers.