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Universal Computational Cluster

Start up documentation

1 Methodology and technology

We choose Agile development to provide a regular and iterative work flow.

For technology we have chosen .NET C#, a powerful tool which we would like to explore even further.

2 Schedule of tasks

- **Stage 1: Communication**

  Deadline 31.03
  Progress meetings (within the team) 16.03, 23.03

  – **Stage 1.1: Internal Deadline: 16.03**

    1. **Communication Server. (Lukasz)**
       - Registering: computational node, task manager.
       - Updating states of nodes (keeping alive / removal).

       Time Required: 8h
       Actual Time Spent:

    2. **Computational node, Task manager, Client. (Karol)**
       - Scheme of classes.
       - Client input mechanism.

       Time Required: 8h
       Actual Time Spent:

    3. **Communication protocol. (Jakub)**
       - Appropriate API.
       - Classes of messages and problems .

       Time Required: 8h
       Actual Time Spent:

    4. **Network. (Bartek)**
       - TCP/IP connection.
       - Listening to given port.
       - Establishing connection.

       Time Required: 8h
       Actual Time Spent:

    5. **Testing. (All)**
       Time Required: 2h
       Actual Time Spent:

– **Stage 1.2: Internal Deadline: 23.03**

1. **Communication Server. (Lukasz)**
   - Queueing of Messages.
   - Receiving problems from CC.
   - Sending problems to TM, CN.
   - Receiving solutions from TM, CN .

   Time Required: 12h
   Actual Time Spent:

2. **Computational node, Task manager, Client. (Karol)**
   - Registering to server.
   - Sending problems/solutions to server.

   Time Required: 8h
   Actual Time Spent:

3. **Communication protocol. (Jakub)**
   - Handling messages. Creating Appropriate classes

   Time Required: 8h
   Actual Time Spent:

4. **Network. (Bartek)**
   - Failures, Closure

   Time Required: 8h
   Actual Time Spent:

5. **Testing. (All)**
   Time Required: 2h
   Actual Time Spent:

– **Stage 1.3: Internal Deadline: 30.03**

1. **Communication Server. (Lukasz)**
   - Any additional tasks

   Time Required:
   Actual Time Spent:

2. **Computational node, Task manager, Client. (Karol)**
   - Any additional tasks

   Time Required:
   Actual Time Spent:

3. **Communication protocol. (Jakub)**
   - Any additional tasks

   Time Required:
   Actual Time Spent:

4. **Network. (Bartek)**
   - Any additional tasks

   Time Required:
   Actual Time Spent:

5. **Testing. (All)**
   Time Required: 2h
   Actual Time Spent:

Update 31.03 Communication stage completed. TODO:

- SocketException handlering is required here and there(marked in source).
- Performance of MultiThreadng in Server
- BackupServer Opening Backup server and properly registering it

- **Stage 2: Algorithm**

  Deadline 28.04
  Progress meetings (within the team) 12.04, 25.03

- **Stage 3: Testing All functionalities**

  Deadline 02.06
  Progress meetings (within the team)