**Frankfurt University of Applied Sciences**

**Department 2 - Computer Science**

**Nibelungenplatz 1, 60318, Frankfurt am Main**

**MILESTONE REPORT #1**

**COMMUNICATION NETWORK ANALYSIS PROJECT**

To: Müller Bady

From: Group 9 ( Lưu Nguyễn Phát - Team representative)

Date: 27th December 2019

Subject: Milestone document #1 for Communication Network Analysis Project.

The following is the first milestone report on the progress made on our "Communication Network Analysis" project in the purpose of the "Object-oriented programming with Java - Advanced Course" and includes a brief description of the project, work we have completed, work we have scheduled and our assessment of the status of the project.

**Period:** 9 – 29 December 2019 **Hours Spent:** 8 Hours

**Team members:**

|  |  |
| --- | --- |
| 1. Ngô Minh Thông | 3. Trần Hữu Lê Huy |
| 2. Nguyễn Quỳnh Hương | 4. Lưu Nguyễn Phát |

**Project Description**

By the use of advanced object-oriented concepts in Java programming language, the aim of this project is to create a program which analyses the graph-based communication network models. The program has fully functional, meets the given requirements and provides a good documentation for users can install, run and see the expected results.

The intended audience of this document is the course instructor, who will use it as the basis for a determination of a portion of our grade. The developed project is based on basic graph definitions, people who are interested in graph also can use this as a tool to refer some specific properties of graph.  
  
**Previous Background:**

As this is our first progress report, we have little to report as previous background. Prior to this reporting period we:

* Discussed and analyzed project's requirements.
* Designed the user interface and objects of the project.
* Created tasks, milestone and assigned tasks to team members.
* Used GitHub to control versions of source code.

**Work Completed:**

During this reporting period we have accomplished the following:

|  |  |  |
| --- | --- | --- |
| Task ID | Task description | Accomplished by |
| 1 | Reading input from users and parse arguments. | Hương |
| 2 | Load network model from user-specified file using regular expression | Phát |
| 3 | Store the given graph model by using HashMap in Java Collections | Phát + Thông |
| 4 | Implemented the algorithm determine connectivity of the graph by using Depth First Search. | Thông |
| 5 | Output number of nodes, edges and their identities (IDs). | Huy |
| 6 | Started writing project documents and designing related diagrams. | Team |

**Work Scheduled:**

During the next reporting period, we plan to:

* Summarize reports from members and combine their works to project.
* Present the progress of the project have done by team

During the subsequent weeks, we plan to:

* Implement the Dijkstra algorithm to find shortest path between two given nodes
* Implement the function to find diameter of the graph
* Code the function to measure "betweenness centrality" of the graph
* Continue writing document about completed works.
* Improve some implementations of algorithm.
* Organize team meeting to discuss about the progress of working project.

**Problems Encountered:**

The items below have been resolved:

* Error appears when checking connectivity of big graph
* Some members have trouble with cloning, committing and pushing repository from GitHub to Eclipse IDE.

**Changes in Requirements**

There have been no changes in the initial requirements.

**Overall Assessment of the Project**

The project is going well and assigned tasks have been done before the first milestone deadline. Project document is on progress of writing. All problems have been solved and some improvements on the code were made.