SE 491 - sdmay20-54
Enabling Repeatable Graph-based Experimentation and Education
Week 5 Report

11/17-11/22
Client: Kothari
Faculty Advisor: Kothari/Payas

Team Members:

Austin Gregory - Report Manager
Peter Marasco - Communication Coordinator
Blake Mulnix - Trello Manager
Kyle Ferguson - Meeting Coordinator
Matthew Schaffer - Technical Leader

Past Week Accomplishments

- Investigated Graph Typing - Kyle
    - Genetical Data, Statistical Data, Software, all will require different graph algorithms for appropriate-looking graph visualization for each type.
- Investigated Alternative Graph Algorithms - Austin
    - Found that the current force-based algorithm is good for many things, but will not solve edge crossing
    - Edge Crossing is an np-hard problem, so a new implementation will come with pros and cons
- Prepare For Meeting with Client - All members
    - Polished Code
    - Prepared questions
    - Prepared presentation of software
- Investigated IO code for Graph Import/Export overhaul - Blake
    - Analyzed code and begin construction of a new approach to graph import/export for future scalability
- Improved Efficiency of Graph Generation - Matthew
    - Found and altered graph exporting code to be faster
- Even More Menu Options for Nodes - Peter
    - Can change the color of nodes through menu

    - Can Delete/Hide nodes
    - Can change the text of nodes

Pending Issues

- Change import/output approach for graph for future scaling
- Add typing to graphs (genetic graphs, statistical data, software)
- Edges in graph crossing (requires overhaul of algorithm)

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Austin Gregory	Investigated Alternative Graph Algorithms/Status Report Creation/Preparation for Meeting with Client	5	29
Peter Marasco	Even More Menu Options Added /Preparation for Meeting with Client	5	34
Blake Mulnix	Investigated IO Code for Graph Import/Export Overhaul/Preparation for Meeting with Client	5	34
Matthew Schaffer	Improved Efficiency of Graph Generation/Preparation for Meeting with Client	5	29
Kyle Ferguson	Investigated Graph Typing/Preparation for Meeting with Client	5	29

Plans for Coming Week

- Even More Changes to Menu Options for nodes - Peter
    - Allow on-click menu options for nodes to provide additional information/utility
- Overhaul Graph Algorithm - Austin
    - Formulate/Implement Graph Algorithm that Minimizes Edge Crossing
    - Keep Graph Typing in mind
- Investigate Additional Efficiency Changes - Matthew
    - Analyze code for any potential increases in code efficiency
- Overhaul Graph Import/Export Approach - Blake
    - Begin an overhaul of graph import/export for future scalability
- Begin Implementation of Graph Typing - Kyle
    - Begin coding framework for graph typing
- Prepare for Presentation - All members
    - Create/Populate Presentation Slides
    - Begin planning
- Complete Design Document - All members
    - Alter design document based on feedback