

ECpE 491 – Weekly Report #4

Feb 19 – Feb 26

Project Title	Interactive evaluation of shortest path methods
Client & Advisor	Goce Trajcevski, Mengxuan Zhang
Team	sddec23-14
Team Members	Alex Blomquist, Samuel Caldwell, Selma Saric, Yadiel Johnson

1 Report

1.1 Abstract

Our team worked through reviewing the code of ethics for various organizations to assess how they differ from each other and how they apply to us. Additionally, we brainstormed a clearer vision of what this project should develop into, particularly the implementation. We also presented the client with our analysis of the use case diagram and took feedback regarding how it could be improved.

1.2 Work Breakdown

This week, our team met to nail down key parts of our project. It is understood that this project has certain key aspects that dictate how it must be implemented. For example, the need to have a frontend and backend, as suggested by our client, means that the product must be able to serve a multitude of users at once. Considering that users are permitted to upload their own datasets, there is also a concern of how performance can be impacted as workload count rises. Additionally, it is reasonable for the project to be a tool used outside of educational environments, so there must be a degree of user-friendliness involved.

While our discussions did not venture into specific languages and technologies to use, the team determined the following:

1. Having a frontend and backend that can serve multiple users at once lends itself to a web application. Additional considerations must be made if this application is public facing.
2. The execution of multiple algorithms simultaneously would require an efficient implementation of each of them that minimizes their individual resource usage. Using languages and libraries with low overhead to perform those calculations can help.
3. There is a need to define a dataset format that can be interpreted by both users submitting information and the backend processing it.

This discussion naturally leads into defining the project requirements, which will be explored in a future report.

Additionally, we read and discussed the major aspects of professionalism and the code of ethics for various organizations. Our notes and observations can be found in the relevant design document: Professionalism.

1.2.1 Major accomplishments

- Developed “Professionalism” document that details our understanding of the code of ethics for NSPE and ACM SE.
- Implemented suggestions from the client to improve the use case diagram.
- Defined a narrower scope for the project’s potential implementation in anticipation of defining project requirements.

1.2.2 Pending issues

- There is uncertainty regarding the pace of our work. The client and the course have different expectations for when different milestones should be reached.

1.2.3 Individual contributions

Name	Individual Contributions	Worked Hours	
		This Week	Cumulative
Alex Blomquist	<ul style="list-style-type: none"> • Completed section 5.3 in the “professionalism” document. • Review SP-literature and Provided GitHub code. 	3	15
Samuel Caldwell	<ul style="list-style-type: none"> • Worked on section 5.1 in the “Professionalism” document 	2	12
Selma Saric	<ul style="list-style-type: none"> • Research on preliminary requirements • Helped revise the use case diagram. • Wrote about <i>Social Responsibility, Sustainability, and Communication Honesty</i> in the “Professionalism” document. • Completed section 5.2 in the “Professionalism” document. • Filled out meeting minutes document 	4	15
Yadiel Johnson	<ul style="list-style-type: none"> • Revised the use case diagram. • Research on preliminary requirements. • Literature review. • Wrote about <i>Work Competence and Financial Responsibility</i> in the “Professionalism” document. • Section 1: Report and overall development for this weekly report. 	5	18

2 Comments and extended discussion

2.1 Work Planned for Next Week

2.1.1 Collective

The next step for our project revolves around bringing more concrete details onto our documentation. That is, as a supplement to the use case diagram and [our discussion above](#), the team will start developing a project charter. This charter will focus on providing an overview of the scope, goals, timeline, and stakeholders while also discussing risk management.

2.1.2 Individual

- Alex Blomquist
 - Begin/Outline the technology considerations section of our design document.
 - Assist in the outline of requirements and the creation of a project charter.
- Samuel Caldwell
 - Begin work on designing high level architecture for our product.
 - Continue review of shortest path algorithms.
- Selma Saric
 - Start working on model of the architecture of our product using our use case diagram.
 - Continue working on the meeting minutes document.
- Yadiel Johnson
 - Start laying the groundwork for a project charter.
 - Develop requirements and stakeholder documentation for the project.
 - Continue reviewing shortest path algorithms.

2.2 Summary of weekly advisor meeting

This week's meeting included getting advice from our client on the professionalism document and getting feedback on our use case diagram. As a team we discussed our priorities regarding the areas of responsibility and ultimately edited and completed our use case diagram and professionalism document afterwards.

3 Appendices

3.1 Appendix #1: Use case diagram

This use case diagram describes the different actors we expect to use the system as a whole. The idea is that our main audience is on the left-hand side of the use cases, and they would interact with the system as their role may need it. The Application Maintainer is simply an actor that we must take into account while designing the system, and casual users are a potential addition we may revise later.

