COMPSCI 4ZP6 Deliverable 1
Capstone Initial Document

Cynthia (Yingxue) Liu 400172720
September 28, 2022

Supervisor: Dr. Emil Sekerinski (emil@mcmaster.ca)

Group member:

- Cynthia (Yingxue) Liu, liuy363, 400172720
- Zoe (Huaijin) Ning, ningh4, 400183343
- Jennie (Jian) Li, lij416, 400204743

Brief description:

Our project is working with the Ohneganos program. Ohneganos is an Indigenous water research program led by McMaster University Professors. Our supervisor Dr. Sekerinski is in charge of a sub-project about water quality sensors, which our capstone team has joined. We will mainly contribute to data integration using an application called Terrastories. Data used will include thorough water quality data such as air temperature, conductivity, dissolved oxygen, humidity, pH, turbidity, and water temperature; and make-up data based on real ones will be used for testing.

Terrastories is a geo-storytelling application to encourage indigenous and other communities to record oral stories of significance to them. This will help illustrate the relationship between Haudenosaunee people, water, land, and well-being. In this website, users can add locations and corresponding stories through straightforward interaction, and it can be used completely offline, so the communities are able to use this application without the internet.

With the help of Terrastories, a customized digital map could be created. A new and emerging digital format of integrating with data will help document import cultural areas for the purpose of conservation and development prevention. This project also has an educational purpose of teaching younger generations about their culture, history, and the environment with the usage of water quality sensors and interaction with this project. The information that will be integrated may include indigenous place names for land areas and water features, changes in habitat, and animal movement patterns such as data integrations by turtle tracker, and water quality sensors data of Ohneganos project.

At the same time, we will also do some improvement on the data visualization for the primitive water sensor website and data analysis using Jupyter notebook in order to achieve impeccable implementation and well-documented for further development and maintenance.