

CS 107 Final Project Milestone 2B

Group 16

Team members: Connor Capitolo, Haoxin Li, Kexin Huang, Chen Zhang

As a collective group, we met on Tuesday, November 3 to discuss what each team member will contribute in order to complete Milestone 2. We also decided that our proposed extension will be a reverse mode implementation and, if time permits, a user-friendly web interface to interact with our library. Below you will find what each member has contributed since Milestone 1, and what each member will contribute before the Milestone 2 deadline next Thursday, November 19:

Connor Capitolo

One of my roles is to work with Lucy to implement the trigonometric functions for scalar functions of a single input. This will include writing test code (using pytest) and making sure that it passes TravisCI. I also plan to outline how a user should download our package, potentially setting up PyPI by next Thursday. Finally, I will help plan out the documentation for the reverse mode feature implementation.

Kexin Huang

Since the last milestone, I tried to come up with a skeleton that is compatible with both multiple input and multiple functions settings. I then built up Haoxin's work and implemented a skeleton with the basic add/subtract/divide/multiply/ne/le/eq functions and created a placeholder for the other functions. Before the next milestone, I will write up the test cases and fill in the documentations.

Haoxin Li

For this milestone, I first created a simple scalar version skeleton code for our Variable class, which defines all the operation functions. Then, Kexin perfected my skeleton and added all the required method headers for our package. My task next is to implement the logarithmic functions, more specifically, `log()`, `exp()`, `pow()`, `sqrt()`. I will also write the test cases for the functions I implemented and make sure they all pass and have high coverage.

Lucy Zhang

Since the last milestone, I've worked to understand the basic modules and function outline as well as do some brainstorming about further development. In order to form a solid foundation, I learned the Python Package Index (PyPI) procedure for distributing packages and set the environment and potential PyPI for delivering our packages (<https://packaging.python.org/tutorials/packaging-projects/>). For this week and next, I'll work with my teammates to implement the scalar functions of a single input (we'll have a Zoom meeting to discuss if we need to verify user input if there is any (*ValueError*) and other types of error that may happen such as *AttributeError*; *TypeError*; *NotImplementedError*). I also plan to write test code, create multiple assertion tests, fill out Doc-Tests/Tests, and make sure the entire library has been completely verified for functionality by running and testing the finishing work to make sure it passes TravisCI. A further explanation will be added in the introduction doc telling users how they could use the packages to directly download from Github, how to use pip to install, and/or get the package from PyPI. If time permits, we'll add a UI using Framer X/ Sketch; I could further proceed with front end code and link that interface with our application packages. The final step is to start preparing the html/pdf of the final report.