Enhancement 2 Narrative

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CS-499

SNHU

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Enhancement 2 involves modifying and building algorithms for the same calculator program I used in Enhancement 1. To meet the requirements of this enhancement, I added advanced mathematical computations which could be computed instantly by the user. This involved creating buttons associated with each formula/number (i.e. Pi) and restructuring the UI. I added the following:

* Cosine
* Sine
* Tangent
* Log
* Natural Log
* *e*
* Pi
* Percent
* Square root
* Power

Before my second enhancement, my logic required 2 number inputs for an operation to work. As an example, 2 + 2 = 4. When I coded Cosine, Sine, and Tangent, I realized that my logic would not support the formulas because these formulas only require one number to work. I edited my ‘compute()’ function by splitting the 1-input functions in the ‘if’ statement, and the 2-input functions in the ‘else if’ part of the algorithm. By separating them, the correct function would fire by a combination of button selection and number of inputs. The way I have it set up requires a number to be pressed first, then the formula needed, then ‘=’.

When adding my constants like Pi and Euler’s number, I first entered them as formulas so I could choose an operation to compute them with. However, this created a bug because even though ‘*e’* is set to the correct number, the input was a string which would not let the equals button to work. So, I edited my ‘appendNumber()’ function to incorporate these two numbers instead and debugged the program so the equals button finally worked.

To keep my security up, I used the Math.js library for the more complex functions and hard-coded the input buttons so random input would not be accepted. ‘Eval()’ has not (and will not) be used so as to avoid the potential for injected malicious code.

I am going to change my plan for my 3rd enhancement. Instead of creating a database to store previous calculations, I am going to create a database for a login page. I started feeling overwhelmed (as I haven’t taken a class with databases or APIs in over 4 months) and I’m trying to find a good refresher as I begin my work. I still plan to use MongoDB and Node.js with Express. As of today (May, 31st), My plan is to create the database to store usernames and passwords, create an API to link between the database and the program to fetch login information, and create a separate login.html file with .css stylizing.