(Graph contains Edge and Vertex as variables)

Project description:

The project is a graph calculator that is used within the command line. The calculator is a shell program that receives commands, parses them and accordingly performs operations on graphs.

Classes outline:

Edge:

This class outlines an edge line between two vertices. It contains a pair of two vertices, which are the origin and destination, in that order.

Vertex:

This class outlines a vertex in the graph. It contains the name of the vertex, which is a string.

Graph:

This class outlines an actual graph. It contains a vector of vertices, and a vector of edges. It also contains numerous functions, such as operator overloads for mathematical operations and such.

The main code of the program lies within the Calculator.cpp file. That file also houses the int main function, which calls for the program to start running.

The main concept of parsing the commands was to use regular expressions to outline different syntaxes, and according to the matches, they are handled in their own way. This also assisted in validating complex expressions that one might use in the program.

The interface for the python wrapper is housed within the GraphWrapper.h and GraphWrapper.cpp. This is not a class, but rather a file for declaring and applying functions for the wrapper itself for use in python.