CSC 413 Project Documentation

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CSC413[02] Fall

git@github.com:csc413-SFSU-Souza/csc413-p1-good-day12.git

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# Introduction

## Project Overview

This project is a calculator that is designed to solve complex mathematical equations and allows us to use parenthesis in our equations as well. While I was given a mostly finished calculator with the looks of everything, I did have to do some considerable work behind the scenes so that the calculator knew what to do when certain buttons are pushed and so it could understand how to solve the equation when asked. This project was a great review for material we went over in past classes and was a good refresher for the beginning of the class.

## Technical Overview

This project is a calculator that uses our own operand and operator classes for the logic behind the calculator. This project has a GUI calculator that the user can then input an equation using the buttons provided, then the project breaks down the equation using our operand and operator classes and stores them onto a stack. Then we solve the equation using the stack and come out with a correct answer to the equation the user inputted with the calculator.

## Summary of Work Completed

For the work I completed I created the Operator classes: AddOperator, SubtractOperator, DivideOperator, ParenthesisOperator, MultiplyOperator, and PowerOperator. I also added to the logic the professor gave us in the evaluate function so that the function can fully solve equations including logic for how to handle parenthesis. After that I also added to the Calculator UI to add functionality to the buttons and logic so that when the equation was entered a correct solution came back out on the display of the calculator.

# Development Environment

The version of Java I used was Oracle OpenJDK version 17.0.2. The IDE I used was IntelliJ.

# How to Build/Import your Project

Copy the repository from Github.

# How to Run your Project

To run the calculator UI simply

# Assumption Made

The assumptions I made was that the numbers inputted would all be non-negative integers. I also assumed that parenthesis would not be used like how they are in math and would not imply multiplication and simply be used to group numbers and equations together.

# Implementation Discussion

## Class Diagram

# Project Reflection

# Project Conclusion/Results