**Kennesaw State University**

**College of Computing and Software Engineering**

**Computer Science**

**CS4308**

**Assignment 1**

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# Complex Number Calculator Report

## Problem Statement

The initial problem involved the creation of a C++ program for a complex number calculator. The program was required to handle addition, subtraction, multiplication, and division of complex numbers.

## Purpose

The purpose of this report is to document the design and implementation of a complex number calculator in C++. The program supports basic arithmetic operations on complex numbers, including addition, subtraction, multiplication, and division. The report aims to provide a detailed overview of the solution, including the modified BNF grammar and an example leftmost derivation and parse tree.

## Solution Used

The C++ program consists of a Complex class representing complex numbers and a main function that takes user input for two complex numbers and an operation. The program then performs the specified operation and displays the result.

## Input Data and Results

1+1i + 3+3i = 4+4i

2+2i – 1+1i = 1+1i

2+2i \* 3+3i = 0+12i

1+1i / 2+2i = 0.5+0i

## Comments and Conclusion

In conclusion, the provided C++ program successfully addresses the requirements of a complex number calculator. The program provides a foundation that can be extended for more advanced functionalities in the future.

Overall, the complex number calculator program serves its purpose effectively and can be further enhanced to meet evolving requirements.