D1265315 張子桓

complex_D1265315.h

In this header file defines a structure called complex and declares a series of functions for manipulating this complex structure, including addition, subtraction, multiplication, division, absolute value, converting real numbers to complex numbers, and printing complex numbers. These functions are implemented in the subsequent source file.

complex_D1265315.c

In this source file implements the complex operation functions declared in the header file. It includes functions for addition, subtraction, multiplication, division, calculating absolute value, converting real numbers to complex numbers, and printing complex numbers. I followed the step on the homework paper to finish the implements. The implementations of these functions involve corresponding calculations for complex mathematical operations.

quadratic_equation_verifier_D1265315

It responsible for coordinating the entire process of computing and verifying the roots of a quadratic equation. Initially, I ensure that the coefficients of the quadratic equation entered meet the conditions. After ensuring that the coefficient 'a' is not zero, the quadratic equation is displayed. Then, using functions from the complex_D1265315.c, the roots of the quadratic equation are calculated. Subsequently, these roots are verified to ensure their validity by performing mathematical operations with the coefficients and roots. Finally, the program outputs the computed roots along with a message confirming the success of the verification process.

Summary

The three code files together form a program that calculates and verifies the roots of a quadratic equation. The header file defines the structure and function prototypes, the source file implements the functions, and the main program file utilizes these functions to perform root calculation and verification. The program leverages a custom complex library, providing a convenient and efficient way to handle complex-

related mathematical operations, facilitating the calculation of quadratic equation roots.