UNIVERSITY OF GUJRAT

PROJECT

ADVANCED CALCULATOR

MEMBER OF PROJECT

<u>NO 1:</u>

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COURSE:

PROGRAMMING FUNDAMENTALS

COURSE CODE:

AI 101

SUBMITTED TO :

RESPECTED

PRO. DR NAUMAN RIAZ

Contents

INTRODUCTION

The ADVANCED CALCULATOR is a console-based application developed in C++ , designed to perform both basic and advanced mathematical operations efficiently .The project demonstrates a menu-driven interface ,allowing users to interact with the program intuitively while performing calculation.

It incorporates file handling to store calculation history ,ensuring that users can review past operations at any time .This project is structured to teach modular programming , input validation , and the importance of clean code organization.

By working on this project team members gain practical experience in problem solving , software development , and collaboration using Github , making it a comprehensive example of a real -world programming application

PROJECT DESCRIPTION

This project is divided into two parts :

1. Basic calculator functionalities
2. Advanced calculator functionalities

BASIC CALCULATOR FUNCTIONALITIES :

- Simple menu base calculator
- Addition
- Subtraction
- Multiplication
- Division
- Power calculation
- Square root
- Percentage calculation
- Modulus operation
- Trigonometric functions :
    1. Sin
    2. Cos
    3. Tan

All calculations are saved in (history.txt)

ADVANCED CALCULATOR FUNCTIONALITIES :

- Factorial calculation
- Prime number checking
- Even and odd checking
- View calculation history
- Advanced logical operation

PROGRAMMING CONCEPTS USED:

1. Input and output handling using cin and cout
2. Variables and data types
3. Menu-driven programming
4. Loops (for loop, do-while loop)
5. Conditional statements (if-else , switch case)
6. User-defined function
7. Mathematical functions(sqrt,pow)
8. Logical operations (even/odd , prime checking)
9. File handling using ifstream and ofstream
10. Persistent storage of calculation history
11. String handling and file reading

MEMBERS CONTRIBUTION:

MEMBER NO 1:

ABEERAH YASIR

"She designed and implement basic calculation functionalities .Implemented arithmetic ,power , square root, percentage , modulus , and trigonometric operation. Developed the basic calculator menu system"

MEMBER NO 2:

RAMNA AMAN

"She developed advance calculator features. Implemented factorial ,even / odd checking , prime number checking , calculation history functionality.

She managed all github repository , commits ,folder , doc and collaboration workflow"

TECHNOLOGIES USED:

- C++
- Github for version control and team collaboration

CONCLUSION

"This project demonstrates effective teamwork by dividing the calculator into basic and advanced modules while applying core C++ programming concepts and Github collaboration "

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