C GUI Calculator

Project Update Report

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Course Information

- **Course**: CSE115
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Team Members

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Project Overview

The C GUI Calculator project aims to design and implement a user-friendly calculator interface using C programming. This update reflects the development of a **console-based prototype** demonstrating core functionality with modular structure and robust input handling.

Key Features Implemented

Feature	Description
Looping Menu	Users can repeatedly select operations until they choose to exit.
Modular Functions	Arithmetic operations are separated into distinct reusable functions.
Input Validation	Invalid choices are handled with feedback and re-prompting.
Error Handling	Division by zero and negative square roots trigger appropriate warnings.
Operation Preview	Each chosen operation is explicitly acknowledged for clarity.

Functionality Breakdown

Main Logic

Runs an infinite loop to repeatedly prompt the user. Terminates gracefully when exiting.

Arithmetic Operations

- `add`, `difference`, `product`, and `quotient` use two float inputs.
- `root` function handles one input and prevents negative values.

User Interface

- Operation menu displayed cleanly.
- Separator lines enhance readability.
- Prompts guide users through input stages.

Development Approach

Modular Design

Each function encapsulates specific responsibility, allowing smooth future GUI integration.

Procedural Style

Follows a straightforward procedural structure, ideal for debugging and expansion.

Next Steps Toward GUI Integration

Task	**Status**
Develop graphical interface	Upcoming
Map current functions to GUI events	Upcoming
Add visual feedback to errors	Upcoming
Implement button-driven input	Upcoming

Summary

This version of the calculator showcases **core arithmetic capabilities** and a **user-driven design**, forming a solid foundation for graphical integration. The team has prioritized modularity, clarity, and clean coding, ensuring a smooth transition toward full GUI development using libraries such as GTK or WinAPI.