Python Calculator Project

Abstract

This project report documents the development of a Python-based calculator application. The calculator performs basic arithmetic operations and demonstrates Python's versatility and the use of GUI libraries for interactive applications.

Introduction

The Python Calculator Project is aimed at building a user-friendly application capable of handling basic mathematical operations such as addition, subtraction, multiplication, and division. Advanced functions like trigonometry and logarithmic calculations can be added for further usability.

Features

- Basic Operations: Addition, subtraction, multiplication, division

- GUI Support: Implemented using Tkinter for an intuitive user interface

- Error Handling: Handles invalid inputs and zero-division errors

Methodology

The project uses Python 3.10 with the Tkinter library for GUI development. The application was structured using modular programming to ensure scalability. Key functionalities were tested with

various inputs to ensure reliability.

Challenges and Solutions

- Challenge: Handling division by zero

  Solution: Implemented exception handling to notify users of invalid operations

- Challenge: Creating an intuitive GUI

  Solution: Used Tkinter's grid layout for consistent design

Conclusion

This project enhanced my understanding of Python and GUI development. Future improvements include integrating scientific calculation features and better UI aesthetics.