**Simple Calculator Application**

**Objective**: Develop a basic calculator application using Python.

**Description:** Create a Python script that can perform basic arithmetic operations (addition, subtraction, multiplication, division). Implement a command-line interface or a simple graphical user interface (GUI) using libraries like Tkinter or PyQt. Ensure error handling for invalid inputs and division by zero. Bonus: Include additional functions such as square root, exponentiation, or memory functions.

**ABSTRACT**

In this project, we aim to develop a simple yet versatile calculator application using Python. The objective is to create a script capable of performing basic arithmetic operations (addition, subtraction, multiplication, and division) with an option for implementing additional functionalities such as square root, exponentiation, or memory functions.

We begin by designing either a command-line interface (CLI) or a simple graphical user interface (GUI) using libraries like Tkinter or PyQt. The interface provides a user-friendly platform for inputting expressions and viewing results, ensuring ease of use for both novice and experienced users.

Next, we implement the core arithmetic operations, ensuring robust error handling for invalid inputs and division by zero scenarios. By incorporating try-except blocks, we safeguard the application against unexpected user inputs, providing a seamless and reliable user experience.

To enhance the functionality of the calculator, we explore bonus features such as square root, exponentiation, and memory functions. These additional functionalities offer users greater flexibility and utility, transforming the basic calculator into a versatile tool for various mathematical calculations.

Throughout the development process, we prioritize simplicity, efficiency, and user experience, ensuring that the calculator application meets the needs of a wide range of users. By leveraging the power and versatility of Python, our project demonstrates an effective approach to building a basic calculator application with enhanced functionalities**.**