**Advanced Swing Calculator**

This is a feature-rich **Java Swing** calculator application that supports both basic and advanced mathematical operations. It provides a user-friendly interface with several scientific functions and memory features which includes:

* **Basic Arithmetic**: Addition, subtraction, multiplication, and division.
* **Square Root :** Calculates the square root of a number.
* **Exponentiation :** Raises a number to the power of another.
* **Logarithmic Function : C**alculates the base-10 logarithm of a number.
* **Exponential Function :** Calculates the value of .
* **Memory Functions**:
* **Memory Clear (MC):** Clears the stored memory.
* **Memory Recall (MR):** Recalls the stored memory value.
* **Memory Add (M+)**: Adds the current displayed value to memory.
* **Clear Entry (CE):** Clears the current input without affecting the full display.
* **Error Handling:** The calculator handles division by zero and invalid operations gracefully.

**How To Run**

To run this program, follow the instructions below:

* **Clone the repository:**

git clone <https://github.com/MOHBASH7/advanced-swing-calculator.git>

* **Navigate to the project folder**:

cd advanced-swing-calculator

* **Compile the program**: Make sure you have JDK installed on your system. If not, download it from the official [Oracle JDK website](https://www.oracle.com/java/technologies/javase-jdk11-downloads.html).

In the terminal, navigate to the folder containing the Java files and compile the program using:

javac AdvancedSwingCalculator.java

* **Run the program**: After compiling, you can run the program with:

java AdvancedSwingCalculator

**Usage**

* **Basic Operations**: Click on the buttons to perform arithmetic operations like addition, subtraction, multiplication, and division.
* **Scientific Functions**:
* **Square Root**: Click to compute the square root of the entered number.
* **Exponentiation**: Click ^ to raise a number to the power of another.
* **Logarithm**: Click log to compute the base-10 logarithm.
* **Exponential Function**: Click exp to compute .
* **Memory Functions**:
* **Memory Add** (M+): Adds the displayed value to memory.
* **Memory Recall** (MR): Recalls the stored memory value.
* **Memory Clear** (MC): Clears the memory.
* **Clear Entry** (CE): Clears the current input (without resetting the entire display).
* **Error Handling**: The calculator will display Error if an invalid operation is attempted, such as division by zero.

**Requirements**

* **Java Version**: JDK 8 or higher
* **Swing Library**: The application uses Java's built-in Swing library for the graphical user interface.

**Acknowledgements**

* The program was built using **Java Swing** and **AWT** for the graphical user interface.
* Thanks to [OpenJDK](https://openjdk.java.net/) for providing the Java platform.

**Contributing**

Feel free to fork this repository and contribute to it. You can:

* Report bugs or suggest new features.
* Create a pull request with your changes.

**Contact**

If you have any questions, feel free to reach out via [mohbash360@gmail.com] or open an issue on the GitHub repository.