**Task 1: Dynamic Calculator Mini Project Report**

**1. Introduction**

The Dynamic Calculator Mini Project is a computer program based on Python that accepts arithmetic calculations as input from a user dynamically and supports simple mathematics operations like addition, subtraction, multiplication, and division.

**2. Features**

* Accepts math expression input from the user.
* Validates expressions dynamically employing Python's feature.
* Validates input to avoid using invalid characters.
* Enables exit from the calculator by entering `'exit'`.
* Includes error handling for errors in calculations.

**3. Implementation Details**

* Prints a welcome message and instructions.
* Keeps asking for user input until 'exit' is entered.
* Validates input using regular expressions.
* Invokes `evaluate\_expression()` to evaluate legitimate expressions.

Expression Evaluation

* Employs the function to calculate the result.
* Returns the calculated result or an error message in case of an exception.

**4. Security Considerations**

The calculator presently employs which can run arbitrary code and be a security threat.

It limits input via a regular expression minimizing but not eliminating threats.

**5. Proposed Enhancements**

* Substitute with a safer mathematical expression parser such as `ast.literal\_eval` or `sympy`.
* Improve error handling to report specific messages for various errors.
* Enhance the user interface by using a GUI with Tkinter
* Include support for complex math functions such as square roots, exponents, and trigonometry.

**6. Conclusion**

This mini-project quite successfully deploys a basic calculator with dynamic input assessment. Though working, adding more security and functionality can enhance its usability and safety.

**7. output**

