**Project Report**

**Certificate of Completion**

This is to certify that the Java project titled **Console-based-Calculator** has been successfully completed by Okem Marvelous on 12th March, 2024.

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**Problem Definition**

The objective of this project is to develop a Java application that performs various mathematical calculations and functions. The application provides a command-line interface for users to input numbers and perform operations such as addition, subtraction, multiplication, division, trigonometric functions, exponential calculations, and more.

**Algorithms**

The following algorithms are implemented in the Java project:

1. Addition: Adds two numbers.
2. Subtraction: Subtracts one number from another.
3. Multiplication: Multiplies two numbers.
4. Division: Divides one number by another.
5. Trigonometric Functions: Calculates sine, cosine, arcsine, arccosine, and arctangent.
6. Exponential Calculation: Calculates the exponential value of a number.
7. Palindrome Check: Determines if a number is a palindrome.
8. Armstrong Number Check: Determines if a number is an Armstrong number.
9. Prime Number Check: Determines if a number is a prime number.

**Task Sheet**

The project tasks were organized as follows:

1. Research and define project requirements.
2. Design the application architecture and user interface.
3. Implement mathematical algorithms and functions.
4. Develop the command-line interface.
5. Test the application for correctness and efficiency.
6. Refine the code based on feedback and testing.
7. Document the project report.

**Project Review and Monitoring Report**

The project progress was monitored and reviewed at regular intervals to ensure timely completion and quality output. The following milestones were achieved during the development process:

* Completed research and requirement analysis phase.
* Designed and finalized the application architecture.
* Implemented core mathematical algorithms and functions.
* Developed the command-line interface for user interaction.
* Conducted thorough testing to identify and fix bugs.
* Reviewed and refined the code for efficiency and readability.
* Documented the project report and prepared for submission.

**Final Check List**

The final check list includes the following items:

1. Verify all implemented algorithms for correctness and efficiency.
2. Ensure the command-line interface is user-friendly and intuitive.
3. Review code documentation and comments for clarity and completeness.
4. Perform comprehensive testing to identify and resolve any remaining issues.
5. Double-check project report for accuracy and completeness.
6. Prepare project for submission and documentation.