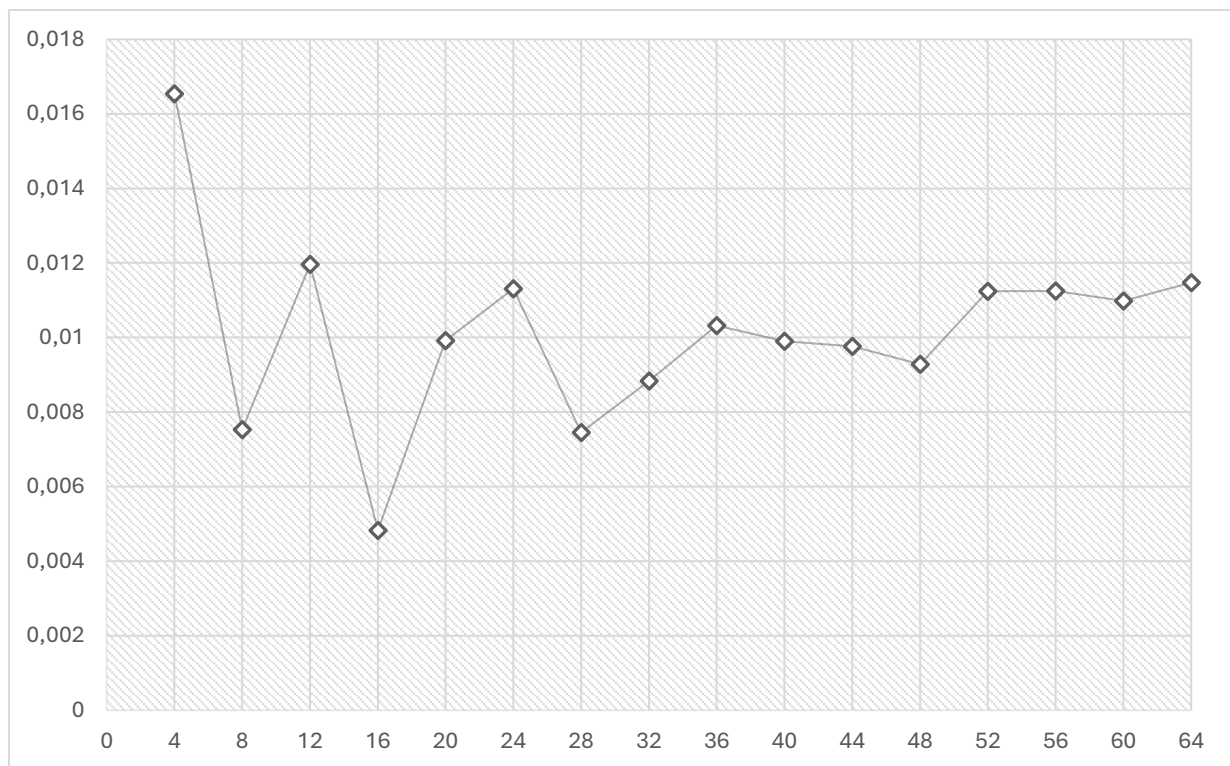


Problem Statement: The aim of this project is to analyze the computation time versus the number of threads for 1,000,000 add/sub operations using the Taylor series for approximating pi (π). The goal is to understand how increasing the number of threads affects the computation time in a multithreaded environment.

Solution Strategy:

- Implement the Taylor series for approximating pi in C.
- Design a multithreaded program using pthreads to distribute the workload among threads.
- Measure the computation time for different numbers of threads to analyze the performance.

Data Visualization: The figure illustrates the relationship between the number of threads and the computation time for 1,000,000 add/sub operations.



Approximation Error: -9.999897932384626433832795028842e-7

The approximation error indicates the accuracy of the pi approximation using the Taylor series. A lower error value signifies a more accurate approximation.

Conclusion: The experiment demonstrates the impact of multithreading on computation time for numerical operations. Increasing the number of threads leads to reduced computation time, indicating the benefits of parallel processing. However, it's essential to consider factors such as overhead and resource utilization when determining the optimal number of threads for a given task.