

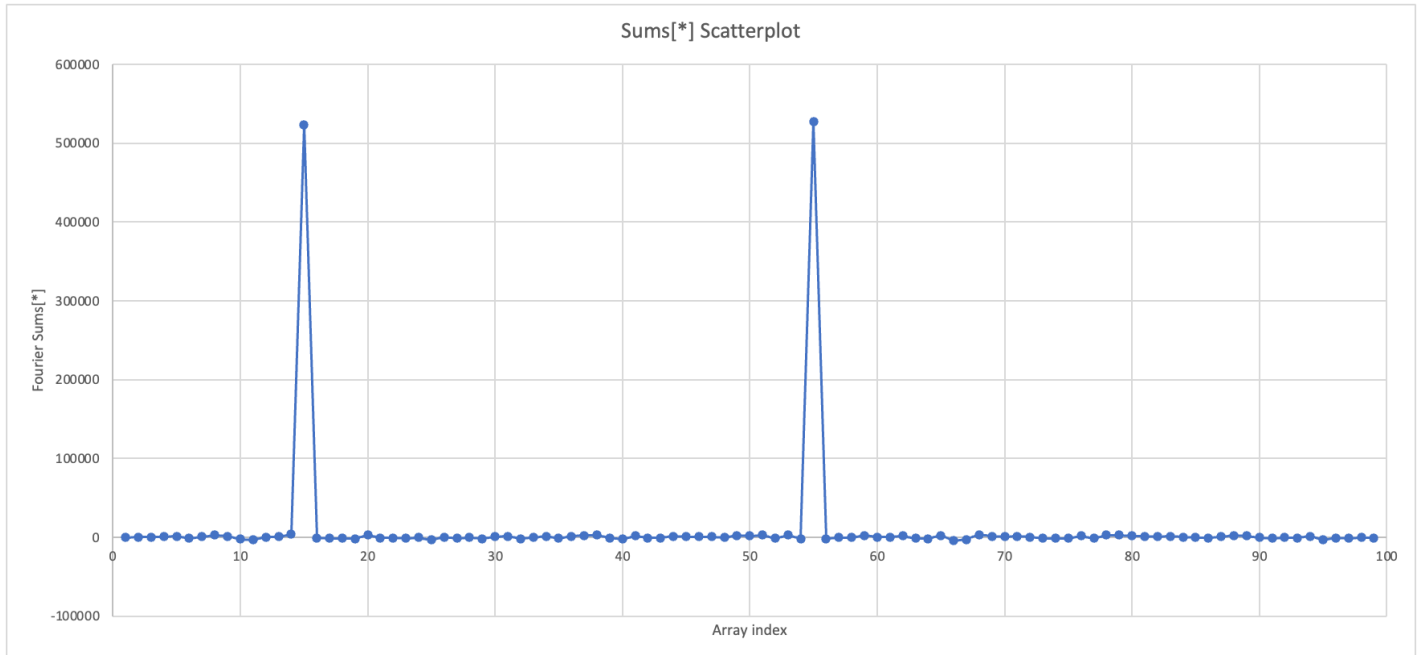
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Project Name: Fourier Analysis using MPI

CS 575 - Project #7

1. Show the Sums[*] scatterplot.



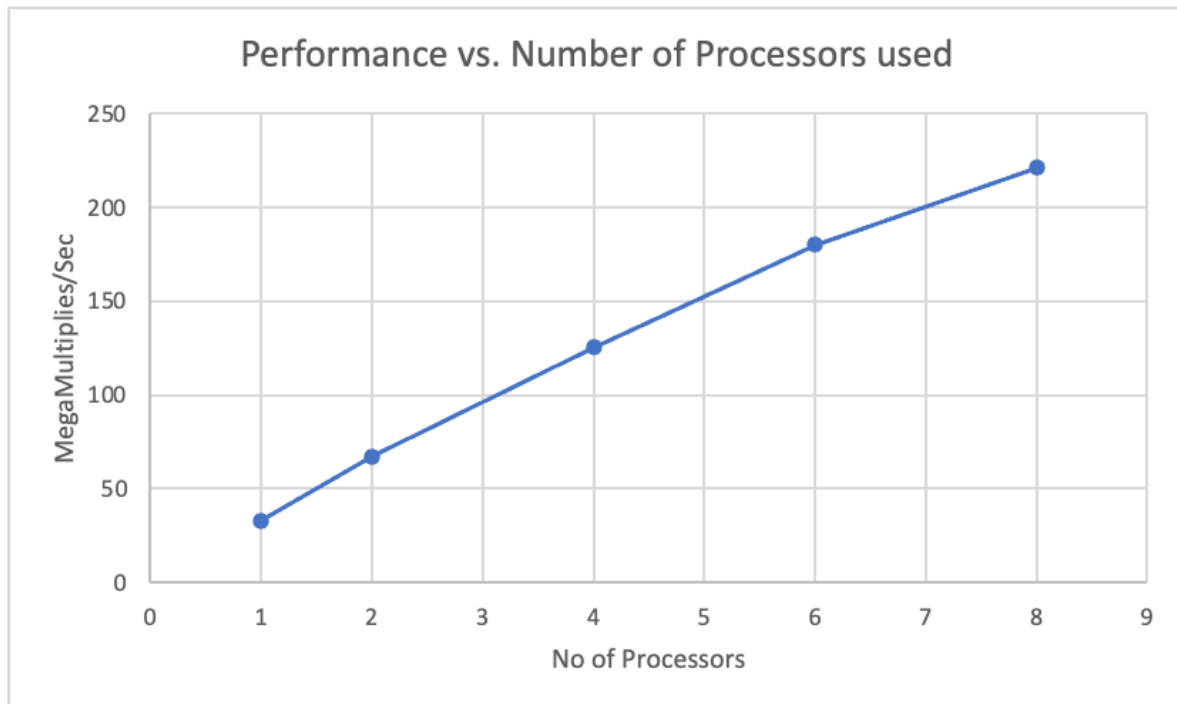
2. State what the secret sine-waves' periods are

There are two secret sine-waves' periods.

For array index 15, Fourier Sum is 523753.66.

For array index 55, Fourier Sum is 527281.62.

3. Show your graph of Performance vs. Number of Processors used.



4. What patterns are you seeing in the performance graph?

As the number of processors increases, so does the performance. The increase is linear.

5. Why do you think the performances work this way?

MPI is based on the Single-Program-Multiple-Data model, which allows CPUs to send messages to each other, coordinate computations, and transmit messages among them. As a result, the more processors are employed, the higher the performance we get.