

Homework

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1. Parallel Prime Number Check

Algorithm Idea

1. **Sequential Prime Check:** A number X is a prime number if $X > 1$ and is not divisible by any integer from 2 to \sqrt{X} .
2. **Parallel Prime Check:**
 - Divide the range of numbers from 2 to \sqrt{X} into smaller segments.
 - Perform divisibility checks in parallel across these segments.

Code

: <https://colab.research.google.com/drive/1730hQ-t1aV42ZUIZM19-G10QqTTvYKjR#scrollTo=umUREDwS7r7R>

2. Parallel Matrix Multiplication

Algorithm Idea

1. **Sequential Matrix Multiplication:**
 - Perform multiplication of individual elements of rows in matrix A with columns in matrix B .
 - Accumulate the results to compute each element of the resulting matrix C .
2. **Parallel Matrix Multiplication:**
 - Divide the computation of multiplying each row of matrix A with matrix B among multiple threads or processes.
 - Combine the partial results to form the final resulting matrix C .

Code

: <https://colab.research.google.com/drive/1730hQ-t1aV42ZUIZM19-G10QqTTvYKjR#scrollTo=umUREDwS7r7R>