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GPU Programming
Problem Definition Report

Given a semiprime number, I want to be able to figure out which prime numbers multiply to become that semiprime. I will be using the GPU in order to do this efficiently. I will then go over how other developers can parallelize their code in order to utilize the GPU efficiently.

Discovering which primes multiply into a semiprime number is important because it is the basis of RSA encryption. This is a hard problem and if there was an easy way to complete this operation, then we could decrypt any message. The intent of this project as well is to intend to show why this is a hard problem, Prime number detection is also a basis in RSA encryption, and advancements on this topic. I also believe that most programmers do not understand when and where GPU programming is beneficial. I hope to explain this through solving this classic programming problem.

I will measure this a success if I have an GPU optimized program that given a semiprime, it will tell you what the two primes are that make up that semiprime. I will also like to support large semiprimes as well. Not sure how large I can go until I dive into the problem. I would also measure this as a success if I am able to give details on general methods I have used to parallelize my code in order to help other developers learn how to utilize the GPU.