

Creating a One-Thousand Dollar Supercomputer

Stump, Bronte (School: Spring Mills High School)

Is it possible to create a supercomputer for under a thousand dollars? Supercomputers are multiple computers (also called nodes) working together over a network to complete the same code. The code is broken into chunks which each different node solves a piece of. A master node controls the distribution and recollection of the code. This process is called parallel computing. Because of the combined might of the computers, they are faster and can handle working with more variables compared to serial computing (a single node working by itself). However, this might comes at a cost - supercomputers are incredibly expensive, but if an inexpensive computer is used, a supercomputer could be made for under a thousand dollars. The Raspberry Pi, which ranges from \$5 to \$75, is the perfect candidate. If a Raspberry Pi is used to build a supercomputer, then it will perform faster than a single node Pi due to the superiority of parallel computing. To test the hypothesis, a Raspberry Pi supercomputer was constructed which performed code that found how many primes were in a certain amount of numbers. Afterwards, the total cost of materials got added up to see if the performance found could be reached under the price limit. The results showed that the hypothesis was indeed correct, the supercomputer performed faster than the single node Pi. The purpose question was also shown to be true, a supercomputer could be built for under a thousand dollars.

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