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We would like to parallelize an algorithm for solving the NP-complete problem of Hamiltonian completeness in a graph. We will compare current methods of solving the problem (serial, probabilistic) to our own parallel implementation. We plan to use Python to write our implementation, using the mpi4py library to implement MPI functionality. As we research and develop our solution, however, this may change if we find a far more suitable language, library, or framework or if this turns out to be a terrible choice. We chose this problem to solve because we like graph problems, and wanted to work on one that does not already have a lot of research and development done on it.