Graph Isomorphism

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We propose, firstly, that a graph can be organized and written upon a tape of a Turing Machine, with certain aspects configured in a specific way, that it maintains its structural organization.

We propose we can take two Turing Machines and with one graph on each machine, and run them in sorting manner to determine if they are identical. If this process is achievable in polynomial time, and the graphs are matched exactly, then we assert that P=NP.

Suppose first we fill both tapes. For each vertex on graph one we assign a letter and for graph 2 a number. We then record the first vertex at the beginning of the tape. After that, for every edge we place two spaces if there is an edge to the next letter vertex and one space if the vertices are disjoint. We continue doing this, repeating letters where necessary.

Once the graph is properly coded on turing machine one, T(A), and turing machine two, T(1), we sort both tapes (including vertex and edges) by the number of edges then compare the two tapes to see if there is a correspondence between vertices and blank spaces.