Problem K. Königsberg Bridges

Input file:	*standard input*
Output file:	*standard output*
Time limit:	3 seconds
Memory limit:	512 mebibytes

Given a graph, we say it is *Königsbergsy* if there is a simple path that goes through all of its bridges. Here, a *bridge* is an edge that disconnects the graph when removed. And recall that a simple path is a path that visits each vertex at most once.

Given a graph G, we want to add some edges to it to make it Königsbergsy. (You may add more than one edge between the same pair of vertices). Determine the maximum number of bridges that the resulting graph can have.

Input

The first line contains two integers n and m ($2 \leq n \leq 10^6$; $0 \leq m \leq 10^6$), the number of vertices and the number of edges of G.

Each of the next m lines contains two integers u_i, v_i ($0 \leq u_i, v_i \leq n-1$), describing an edge between vertices u_i and v_i.

Output

Output one integer, the maximum number of bridges the resulting graph can have.

Examples

standard input	standard output
4 3 0 1 1 2 2 0	1
4 2 0 1 1 2	3