Maximum size of a set

Attempted by: **354** / Accuracy: **53%** / Maximum Points: **30** / ★☆☆☆ 7 Votes

Tag(s): Algorithms, C++, Graphs, Topological Sort

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You are given a DAG **N** with **N** nodes and **M** edges. You are building a graph **G**^. **G**^ contains the same vertex set as **G** and all edges are available in **G**. Moreover,

- 1. If there exists an edge between vertex **u** and **v** in **G**, then there does not exist an edge between vertex **v** and **u** in **G**^.
- 2. If there exists an edge between vertex **u** and **v** in **G** and also between **v** and **w** in **G**, then there exists an edge between vertex **u** and **w** in **G**^.

For G^, find the maximum possible size of **S** where **S** is a set of vertices in **G**^ such that there exists an edge between every unordered pair of vertex present in **S**.

The meaning of unordered is that there must exist an edge between every pair of vertex (u,v), that is, either u -> v or v -> u must be in an edge set.

Input format

- The first line contain two integer N and M describing nodes and edges in graph G.
- Next M lines contain two integers u and v representing an edge from u to v.

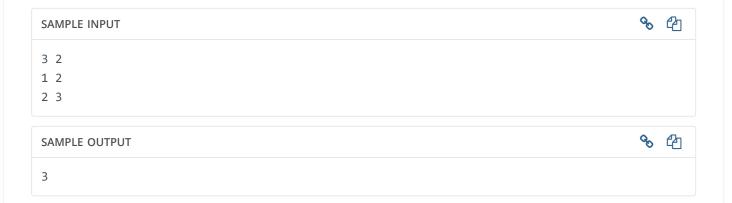
Output format

Print the maximum possible size of set S.

Constraints

 $1 \le N \le 200000$

 $1 \le M \le 1000000$



Explanation

G^ has following edges.

```
1 -> 2
2 -> 3
1 -> 3

Take S ={1,2,3}. It is a valid choice as every pair of vertex has an edge between them.

Time Limit:
1.0 sec(s) for each input file.

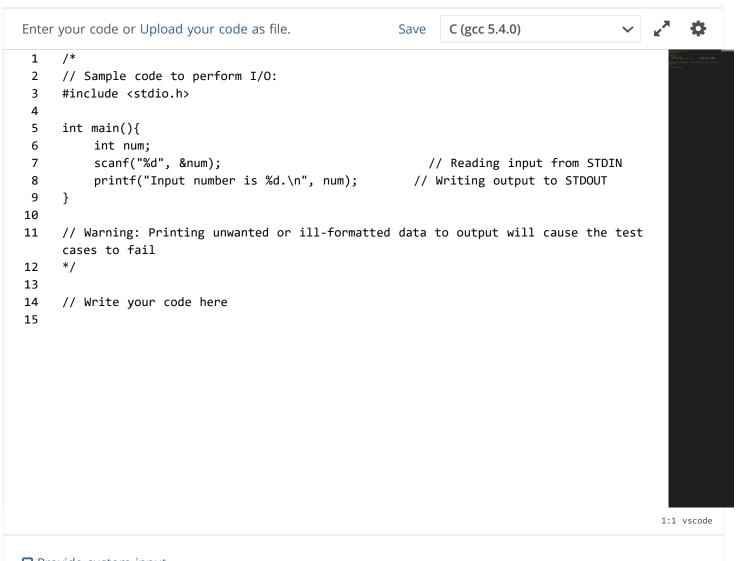
Memory Limit:
256 MB

Source Limit:
1024 KB

Marking Scheme:
Marks are awarded when all the testcases pass.

Allowed Languages:
Bash, C, C++, C++14, C++17, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java, Java 8, Java 14, JavaScript(Rhino), JavaScript(Node.js), Julia, Kotlin, Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, Python 3.8, R(RScript), Racket, Ruby, Rust, Scala, Swift-4.1, Swift, TypeScript, Visual Basic
```

CODE EDITOR



■ Provide custom input

COMPILE & TEST

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Attempted By: 200 / Accuracy: 49

Oliver And The Game

Attempted By: 948 / Accuracy: 71

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