Maximum size of a set

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

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

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

$1 \leq N \leq 200000$
$1 \leq M \leq 1000000$

SAMPLE INPUT

```
3 2
1 2
2 3
```

SAMPLE OUTPUT

```
3
```

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

Enter your code or Upload your code as file. Save C (gcc 5.4.0)

```c
/*
// Sample code to perform I/O:
#include <stdio.h>

int main(){
    int num;
    scanf("%d", &num);                          // Reading input from STDIN
    printf("Input number is %d.\n", num);       // Writing output to STDOUT
}

// Warning: Printing unwanted or ill-formatted data to output will cause the test cases to fail
*/

// Write your code here

```

1:1 vscode

Provide custom input

COMPILE & TEST SUBMIT

?

Your Rating:

PROGRAMMERS WHO SOLVED THIS PROBLEM ALSO SOLVED

Lonely Island

Attempted By: **1078** / Accuracy: **63**

Find The Array

Attempted By: **200** / Accuracy: **49**

Oliver And The Game

Attempted By: **948** / Accuracy: **71**

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