

# Competitive Programming SS24

Submit until end of contest



## Problem: Draft Dilemma (2 second timelimit)

You really should have double-checked your application to the HPI's Master's program. Instead of applying for a Master's at the Hasso Plattner Institute (HPI), you accidentally applied at the Hockey Program Initiative (HPI), a program that aims to teach hockey to students in the local area!



Your team finally playing hockey! CC 0 by John Torcasio on [Unsplash](#)

Now, instead of attending a third crucial mandatory lecture on project management, you find yourself standing in front of a group of teenagers fighting each other. You quickly notice that some of the students are close friends, while others are archenemies.

You really do not want to deal with this mess right now, so you just want to let them play hockey (and hopefully tire them out). To ensure a fair and fun game for everyone, you decide to split the students into two groups of equal size. But of course, you cannot put rivals in the same group, as they would just fight each other instead of playing hockey together.

After shuffling the students around, you realize that you have no idea how to split them into two groups. You start to wonder: is it even possible to split the students into two groups in such a way that no rivals are in the same group?

**Input** The input consists of:

- One line with two integers  $n$  and  $m$  with  $(1 \leq n \leq 10^3, 0 \leq m \leq \binom{n}{2})$ , the number of students and the number of rivalries.
- $m$  lines with two integers  $u$  and  $v$  ( $1 \leq u, v \leq n$ ) representing a rivalry between students  $u$  and  $v$ . Rivalries are bidirectional.

**Output** If it is possible to split the students into two groups of equal size such that no rivals are in the same team, output "yes". Otherwise, output "no".

### Sample Input 1

```
4 3
1 2
2 3
3 4
```

### Sample Output 1

```
yes
```

**Sample Input 2**

```
4 4
1 2
2 3
3 4
4 2
```

**Sample Output 2**

```
no
```

**Sample Input 3**

```
6 1
3 5
```

**Sample Output 3**

```
yes
```

**Sample Input 4**

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

**Sample Output 4**

```
no
```