Challenge 4: Find a "Mother Vertex" in a Directed Graph

Given a directed graph, can you find a vertex from which all other vertices are reachable?

We'll cover the following

Problem statement#

You have to implement the `find_mother_vertex()` function which will take a directed graph as an input and find out which vertex is the mother vertex in the graph.

By definition, the mother vertex is a vertex in a graph such that all other vertices in a graph can be reached by following a path from that vertex. A graph can have multiple mother vertices, but you **only need to find one**.

Input#

A directed graph

Output#

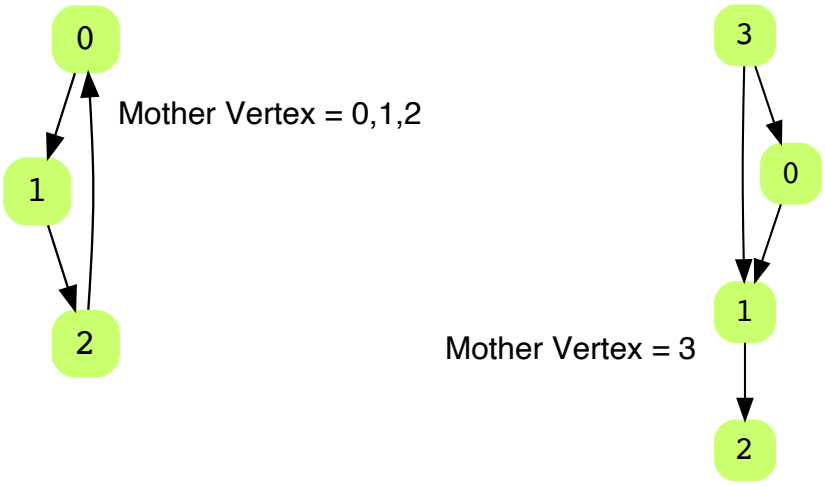
Returns the value of the mother vertex if it exists. Otherwise, it returns `-1`

Sample input#

```
graph = {
    3 -> 0
    3 -> 1
    0 -> 1
    1 -> 2
}
```

Sample output#

```
3
```



Coding exercise#

Take a close look and design a step-by-step algorithm first before jumping to the implementation.

Remember, the mother vertex is not directly connected to ev[illegible] can reach it through a path traversal. Hence, there can be multiple mother vertices. However, for simplicity's sake, you must search only for **one**.

If you get stuck, you can always refer to the solution provided in the solution section. Good Luck!

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