Diameter of a graph

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1 Problem statement

Given a graph, return its diameter (the length of a largest shortest path) as well as all instances of shortest path attaining that diameter. So the input is a graph, from the structure used in class (nothing else), and the output is a pair: one integer indicating the diameter and a list of list of nodes, each representing a shortest path of diameter length.

- You are not allowed to call any python library function.
- You must use the graph structure we use un class (on the slides). You are welcome to improve on it, of course, adding whatever function you need.
- Test not only on small graphs, but on large random graphs.
- The signature is

```
def diameter(G):
    """Where G is a graph"""
    return d,list_of_paths
```