Lab 5

Consider a directed graph's adjacency matrix, such as

0 1 0 0 1

1 0 1 1 1

0 1 0 1 0

0 1 1 0 1

1 1 0 1 0

(a) We can also represent graphs by an adjacency list, which is actually a list of lists. The adjacency list contains a list of all nodes adjacent to each node. For example, the first element of the adjacency list for the above graph is [1, 3] because node 0 is connected to nodes 1 and 3. The second element of the adjacency list would be the list of nodes connected to node 1, and so on.

Write a function that will take an adjacency matrix and return the adjacency list.

(b) Write a function that takes the adjacency list and two nodes and computes a path from one node to the other (if one exists.)

(c) Consider how you'd compute a shortest path from the adjacency list. (Don't spend a ton of time here, we'll get to this eventually in Ch 4.)