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CS 261
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Assignment 7 Written Questions

1. How is the graph stored in the provided code? Is it represented as an adjacency matrix or list?

The graph from the provided code is represented by an adjacency matrix.

2. Which of the 3 graphs are connected? How can you tell?

2 and 3, by using dfs or bfs, each vertex has edges that create a path to all of the vertices.

3. Imagine that we ran each depth-first and breadth-first searches in the other direction (from destination to source). Would the output change at all? Would the output change if the graphs were directed graphs?

The output I do not believe would change because you are going to end up at the same two locations.

Yes, the output would change if it was directed because the accessible edges would change.

4. What are some pros and cons of DFS vs BFS? When would you use one over the other?

DFS
- Pros: Lower Memory usage.
  May be lucky and find a faster solution.
- Con: May take longer to find the solution
  Could get caught in an infinite loop

BFS
- Pros: Will always find a solution
  Will determine the shortest path
- Con: Uses more memory

5. What is the Big O execution time to determine if a vertex is reachable from another vertex?

The complexity is O(E).