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CSC\_242\_Lab\_014\_QA

**(1)** A graph is connected if every pair of vertices ( u , v ) has a path from u to v. Is our original graph, from the starter code, representing a connected graph?

**Nope! Not every vertex is connected to every other vertex.**

**(2)** In Graph Theory, aHamilton Circuit is one that visits every vertex in a graph without any repeated vertices. Does our original graph, from the starter code, possess a Hamiltonian Circuit?

**Nope! Paths in the original starter cod(e.g., A🡪B exists but so does B -> A)**

**(3)** In Graph Theory, anEuler Circuit is a simple circuit containing every edge of the graph it belongs to that returns to the beginning vertex. That is, it is a circuit which visits each edge in the graph only once. Does our original graph, from the starter code, possess an Euler Circuit?

**No again… the graph in the starter code revisits paths (e.g., A🡪B exists but so does B -> A)**

**(4)** DoesDijkstra's Methodyield theCritical Path in a graph, i.e., the sequence of activities that determine the earliest time by which the project can be completed?

**Yes, Dijikstra’s method can show us the fastest routes to a destination.**

**(5)** An Undirected Graph is one that contains edges between vertices with no specific direction associated with any edge. That is, edge ( u , v ) is identical to the edge ( v , u ) as shown below.

DoesDijkstra's Method apply to an undirected graph?

**Yes, Dijkstra’s method could apply to an undirected graph, because the shortest path problem can be solved without direction. However, if there are no weights associated with the edges, then the method cannot be used as it is necessary to have weights or distances attached to edges in order to calculate the shortest possible route.**