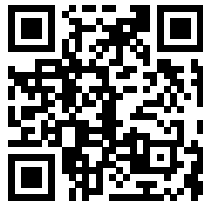




# **SoulShift - Educational Q&A Platform**

## **General Questions**

Practice Questions



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**Q1. If a graph has 5 vertices and 10 edges, what is the maximum time complexity of Dijkstra's algorithm using an adjacency matrix?**

- A.  $O(10)$
- B.  $O(5^2)$
- C.  $O(5 \log 5)$
- D.  $O(10 + 5^2)$

*Solution: Using an adjacency matrix, the time complexity of Dijkstra's algorithm is  $O(V^2)$ , which in this case is  $O(5^2)$  or  $O(25)$ .*

**Q2. What is the space complexity of Dijkstra's algorithm when using a priority queue?**

- A.  $O(V)$
- B.  $O(E)$
- C.  $O(V + E)$
- D.  $O(V \log V)$

*Solution: The space complexity of Dijkstra's algorithm when using a priority queue is  $O(V)$ , as it needs to store the distance for each vertex.*



