Activity (Depth-First Search)

Reproduce the behavior of the DFS algorithm for the graph below. Start with Node A. If there is more than one node that could be visited next, choose the one that comes first in alphabetical order.

A network with white circles and a yellow dot

AI-generated content may be incorrect.

Activity (Dijkstra’s Shortest Path Algorithm)

Reproduce the behavior of the DFS algorithm for the graph below. Start with Node A. Calculate the shortest distance of A to each node.

A network with white circles and black lines

AI-generated content may be incorrect.

Activity 2: Dijkstra’s Shortest Path Algorithm

Start Node: A

**Graph with Weights (from image):**

A → B = 2

A → C = 4

B → C = 1

B → G = 2

C → D = 2

D → E = 1

E → G = 2

G → F = 3

**Dijkstra's Algorithm (Step-by-Step)**

Node Distance from A Previous Node

A 0

B 2 A

C 3 (A→B→C) B

G 4 (A→B→G) B

D 5 (A→B→C→D) C

E 6 (A→B→C→D→E) D

F 7 (A→B→G→F) G

**Shortest Distances from A**:

A → A = 0

A → B = 2

A → C = 3

A → D = 5

A → E = 6

A → F = 7

A → G = 4