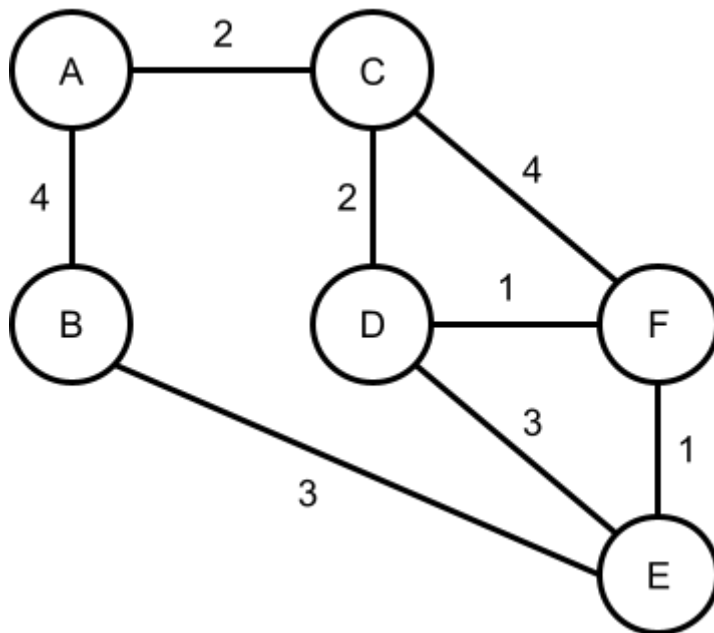


# Group Activity. Shortest paths on graphs

## Dijkstra



|   | Iteration 1 |          | Iteration 2 |          | Iteration 3 |     | Iteration 4 |     | Iteration 5 |     | Iteration 6 |     |
|---|-------------|----------|-------------|----------|-------------|-----|-------------|-----|-------------|-----|-------------|-----|
|   | X           | V-X      | X           | V-X      | X           | V-X | X           | V-X | X           | V-X | X           | V-X |
|   | cost        | DGS      | cost        | DGS      | cost        | DGS | cost        | DGS | cost        | DGS | cost        | DGS |
| A | 0           |          | 0           |          | 0           |     | 0           |     | 0           |     | 0           |     |
| B |             | 4        |             | 4        | 4           |     | 4           |     | 4           |     | 4           |     |
| C |             | 2        | 2           |          | 2           |     | 2           |     | 2           |     | 2           |     |
| D |             | $\infty$ |             | 4        |             | 4   | 4           |     | 4           |     | 4           |     |
| E |             | $\infty$ |             | $\infty$ |             | 7   |             | 7   |             | 6   | 6           |     |
| F |             | $\infty$ |             | 6        |             | 6   |             | 5   | 5           |     | 5           |     |

Run Dijkstra's algorithm to find all shortest paths from vertex A to any other vertex in the above graph. The first iteration is given as an example.