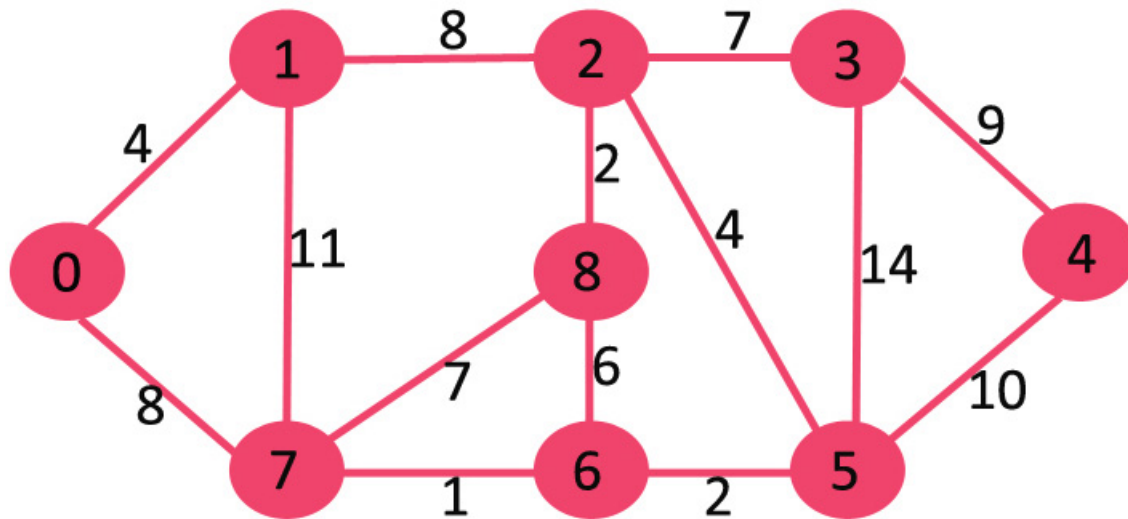


1 Graphs



The following questions use the same graph above unless explicitly specified. Some questions may have additional verbal modifications (without attaching a new graph).

1.1 Dijkstra

1. Perform a Dijkstra algorithm from **Vertex 0**. Please indicate the final weight for each vertices and the corresponding path.
2. Give one graph and explain why Dijkstra doesn't work with negative edges.
3. Change one weight to negative above and show if the correctness is affected. Why? (Why it is wrong, or why it remains correct).

1.2 Prim

1. Using the original graph (without the modification in 1.1.3), find the minimum spanning tree using Prim Algorithm.
2. Using the simple graph you constructed from 1.1.2, find the MST using Prim. Is it affected by negative weights? Why?
3. Using the modified graph (1.1.3), find the MST using Prim.