



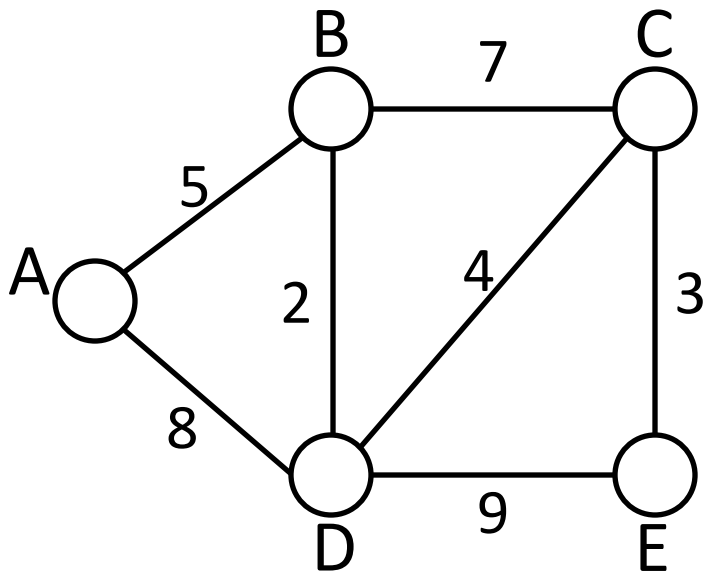
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# Graph

The original slides were created by Dr. Jianfeng Ren  
Edited by Heshan Du

# Exercise 1

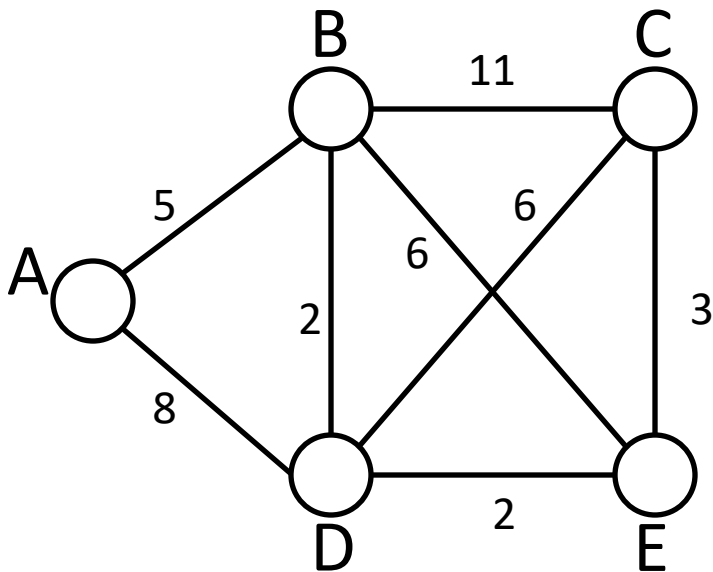
Find the shortest distance using Dijkstra's algorithm for the following graph, starting from A.



# Exercise 2

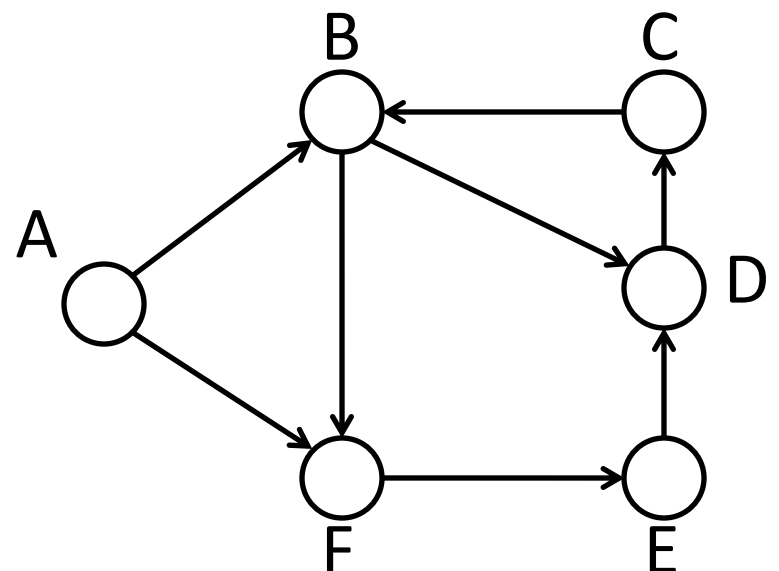
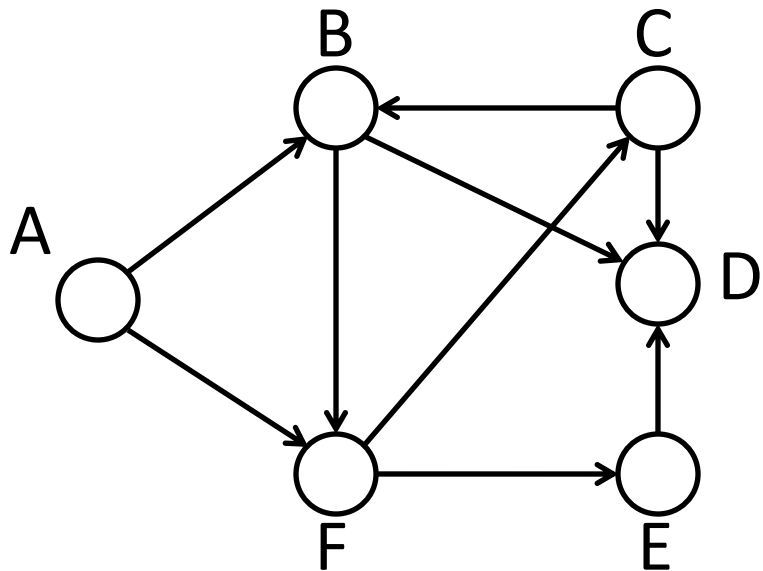
Find the shortest distances and the shortest path for the following graph.

0.  $(A, 0, \{\})$ ,  $(B, \text{inf}, \{\})$ ,  $(C, \text{inf}, \{\})$ ,  $(D, \text{inf}, \{\})$ ,  $(E, \text{inf}, \{\})$ ,  **$PQ = \{A, B, C, D, E\}$ .**



# Exercise 3

Use topological sort to detect cycle



# Exercise 4

Find the minimum spanning tree

