CSE 310 Recitation 9

Objectives:

1. Dijkstra's Shortest path algorithm

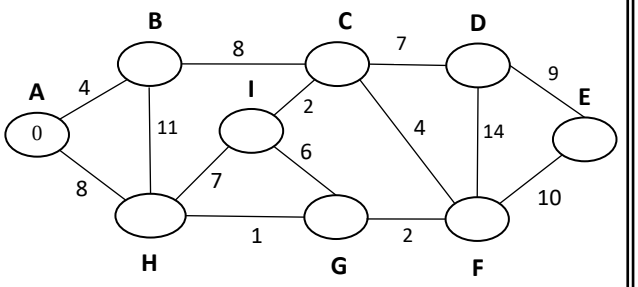
Rules:

1. Except for diagrams, charts or tables, answers MUST be provided in typed form.
2. For grading purposes, do NOT just submit the answers, instead copy each question, and put your answer under it. Unreadable and unclear answers will be graded with 0 points.
3. Submit your recitation on Canvas as a single PDF file.
4. For each recitation, you have 2 attempts to submit, but we will ONLY grade your last submission! It's your own responsibility to make sure that you submit the correct file! We will not accept any submissions through email.
5. Equipment defects and technological difficulties cannot become excuses for late submission. No late submissions will be accepted!

Question

1. [8 pts] Show how Dijkstra's algorithm works on the following undirected graph step-by-step. Assume A is the source vertex and adjacency list are in alphabetical order. Fill in the relevant table to show, at each step, a vertex's attributes, *d* and π accordingly. Use shaded or highlighted edges to indicate the path picked at each step, write (S) next to the vertex inside the table to indicate that the vertices are in the set S. Also write S contents (Note: add extra table whenever necessary)

2. [2 pts] Write the shortest path from source A to all other vertices B, C,…, I respectively.



	d	π
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B		
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G		
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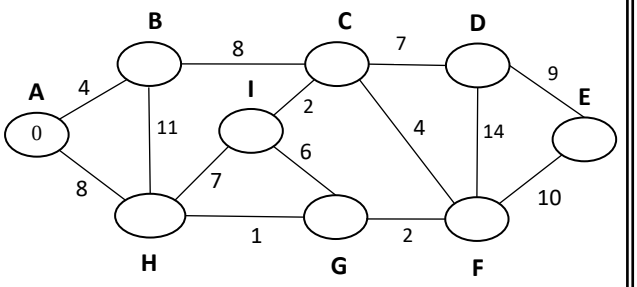
I		

Set S = {_____}



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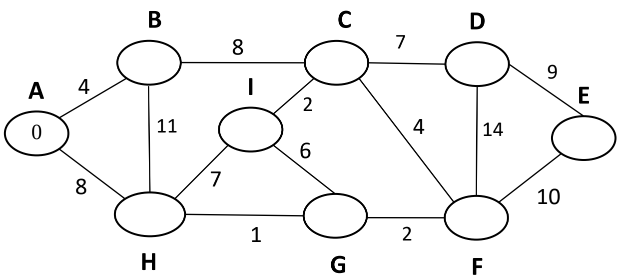

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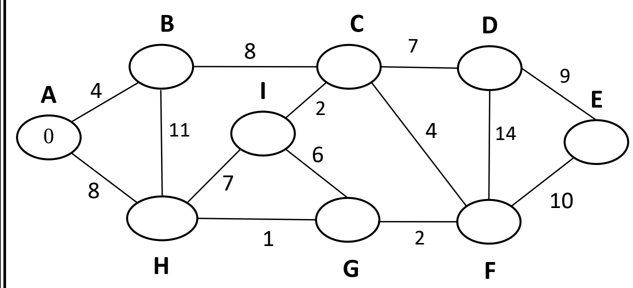

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Set S = {________________________________}

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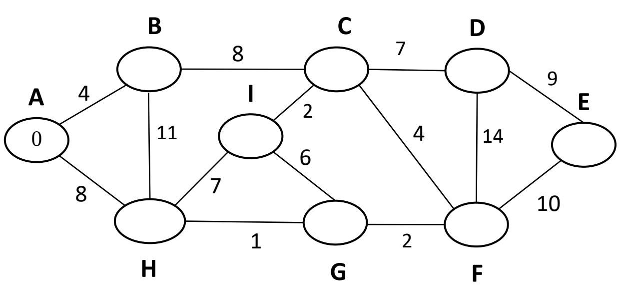

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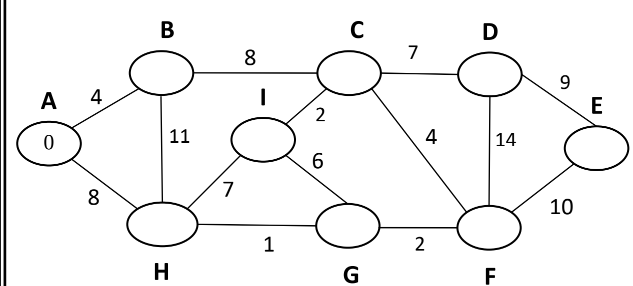

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Set S = {________________________________}

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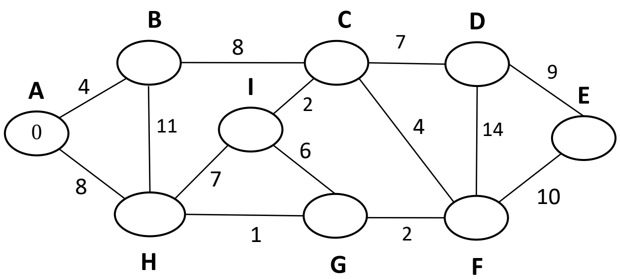

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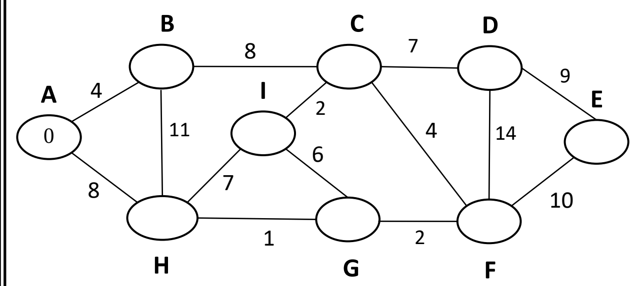
Set S = {__________________________________}



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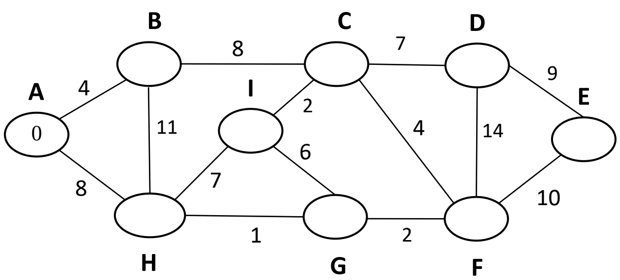

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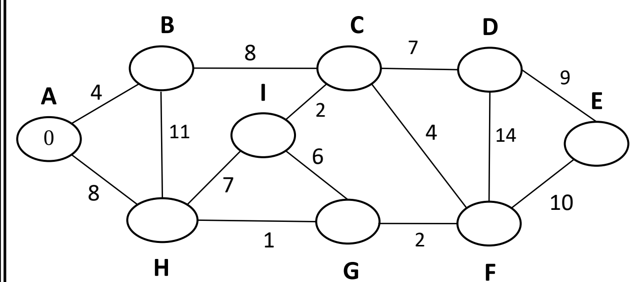

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Set S = {__________________________________}