Lab 11 Graph Algorithms

**Task 1.**
Starting at vertex A in the graph at below, what is the list of vertices in the order in which they would be visited using **Prim's algorithm** to find a Minimum Spanning Tree?

Draw the selected edges and list the visiting order of vertices.

![Graph with vertices and edges labeled](image1)

**Task 2.**
Select the edges in the order in which they would be added for **Kruskal's algorithm** to find a Minimum Spanning Tree, just as we did in class. (The above graph is given again here for your convenience so you can draw on it.)

![Graph with vertices and edges labeled](image2)

What is the order of edges added?

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Task 3.
Consider the graph shown below. Starting from vertex D fill in the table below using Dijkstra’s algorithm to show each step from vertex D to all other points, similar to what was done in class.

The first row has been done for you.

<table>
<thead>
<tr>
<th>S</th>
<th>Vertex Selected</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>{}</td>
<td>D</td>
<td>max int</td>
<td>8</td>
<td>max int</td>
<td>0</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>max int</td>
<td>max int</td>
</tr>
</tbody>
</table>

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