

Algorithmen und Datenstrukturen

Aufgabenblatt 10

Abgabe: 08.07.2021 22:00

Abnahme: 09.07.2021

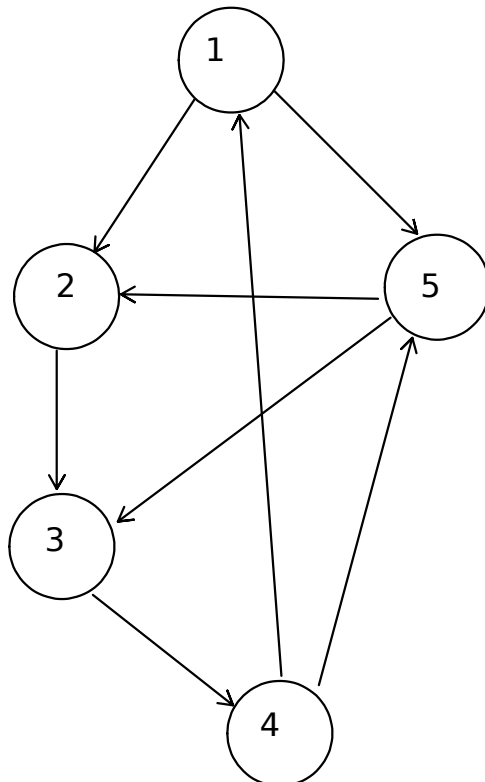
Für diese Aufgabe können Sie einen Bonuspunkt bekommen.

1. Tiefendurchlauf

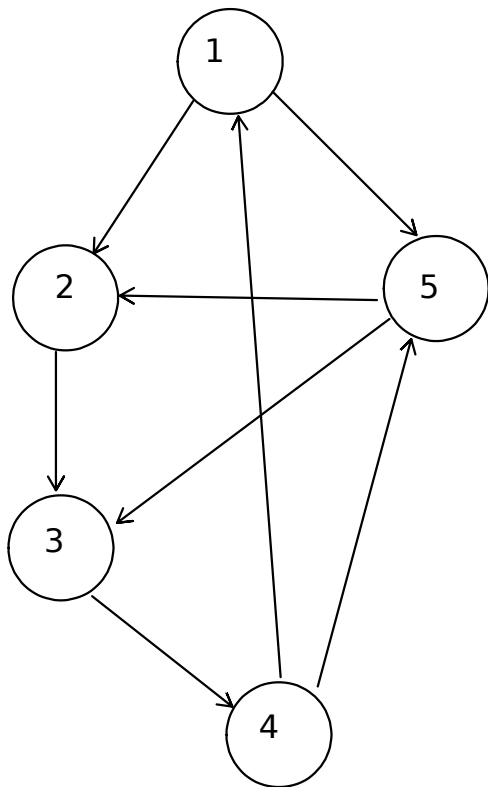
Führen Sie auf dem Papier auf dem folgenden Graphen zwei Tiefendurchläufe durch und bestimmen Forward -, Back - und Cross-Edges.

$$\begin{pmatrix} 0 & 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 0 & 1 \\ 0 & 1 & 1 & 0 & 0 \end{pmatrix}$$

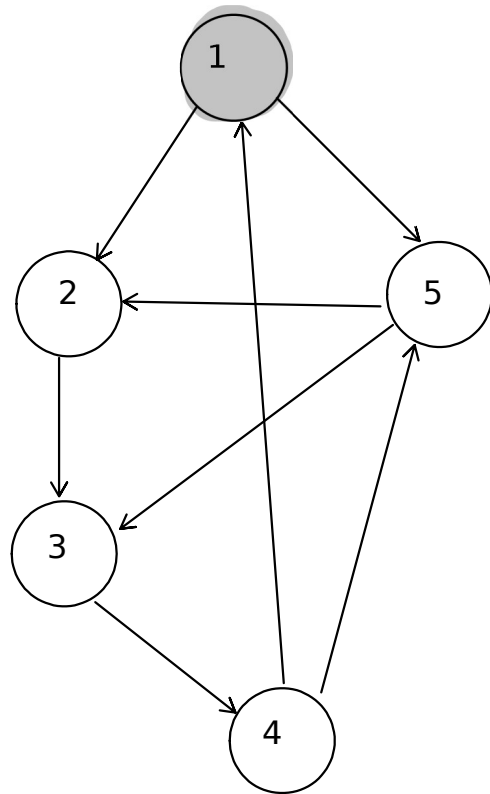
Starten Sie einmal mit Knoten 1, einmal mit Knoten 3.



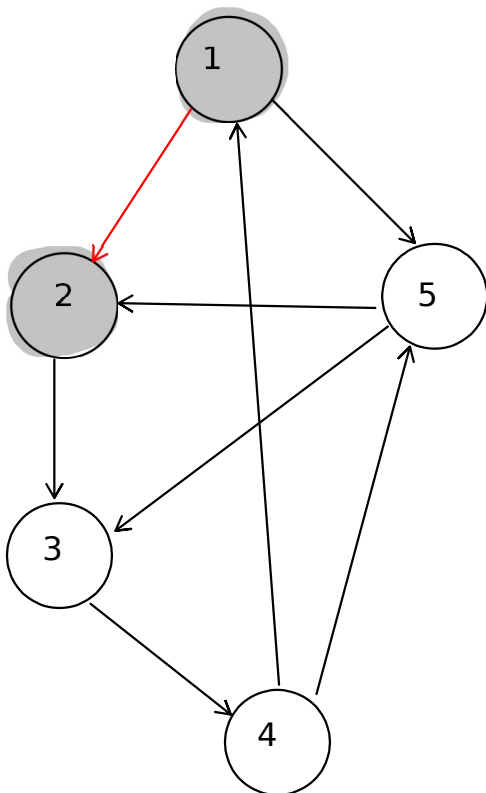
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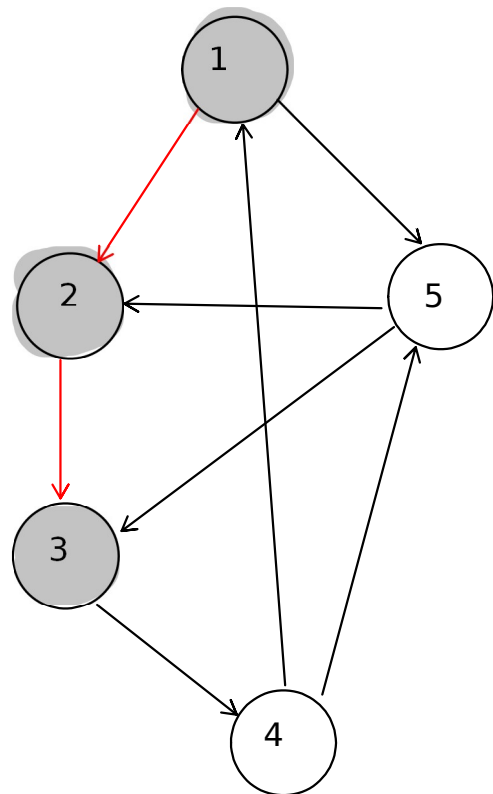
1



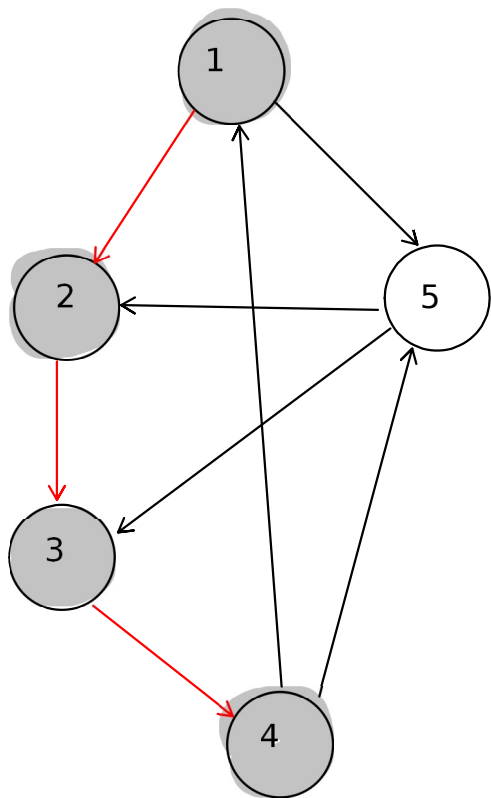
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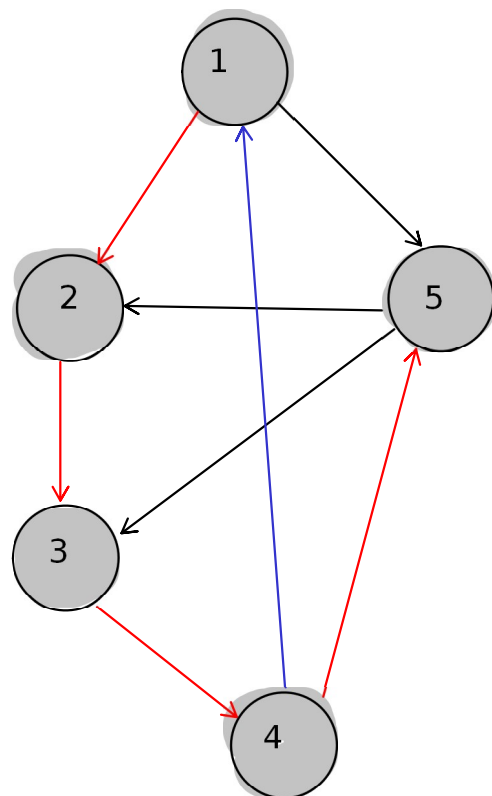
3



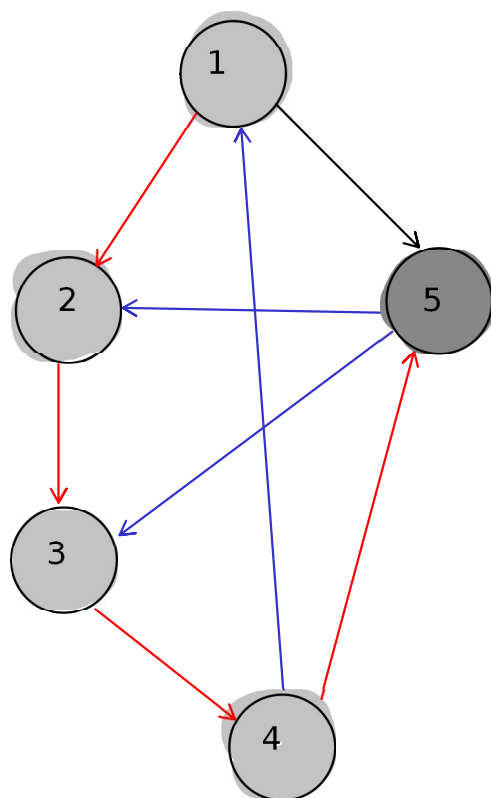
4



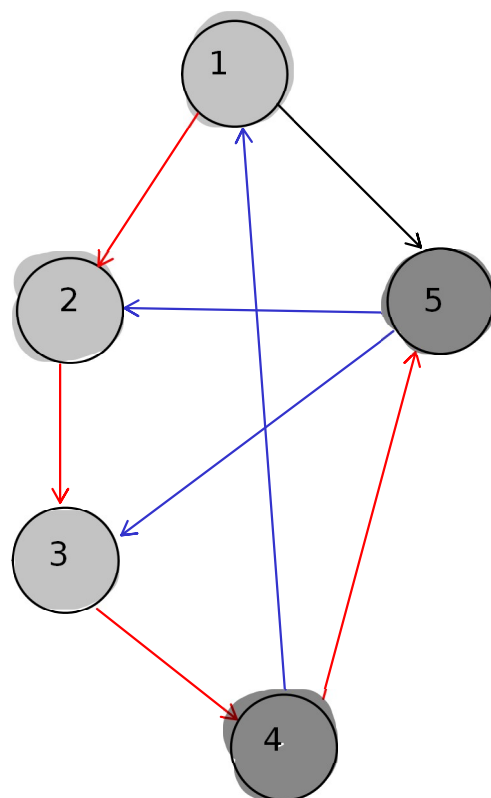
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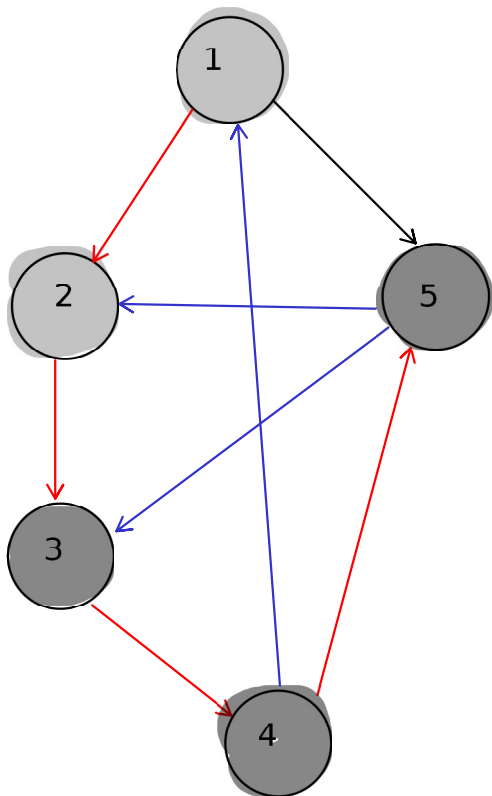
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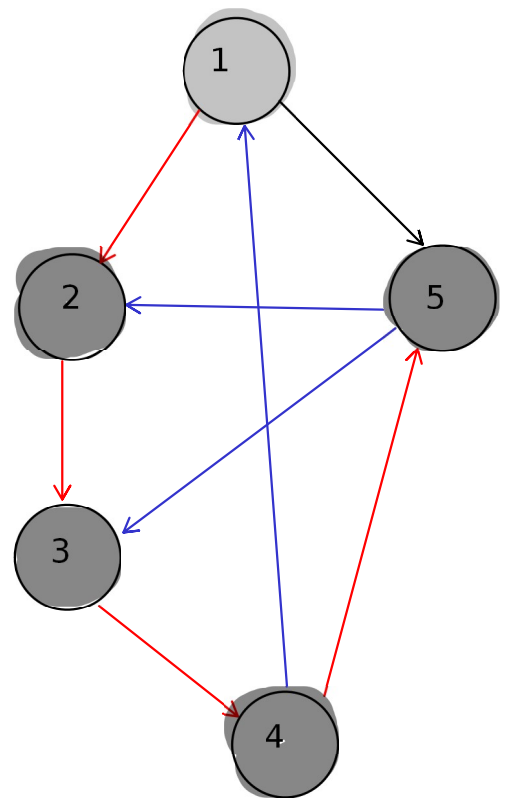
7



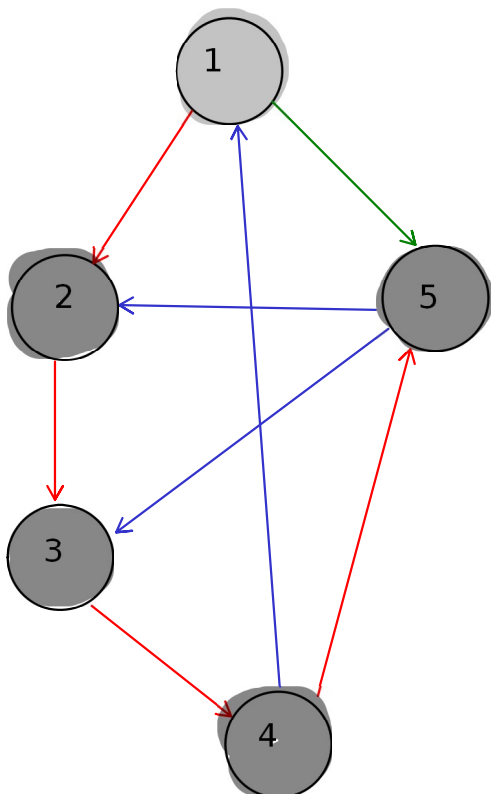
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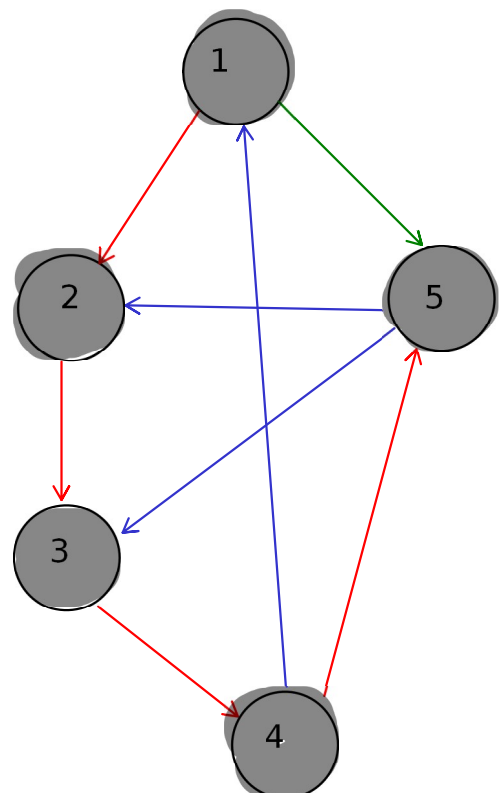
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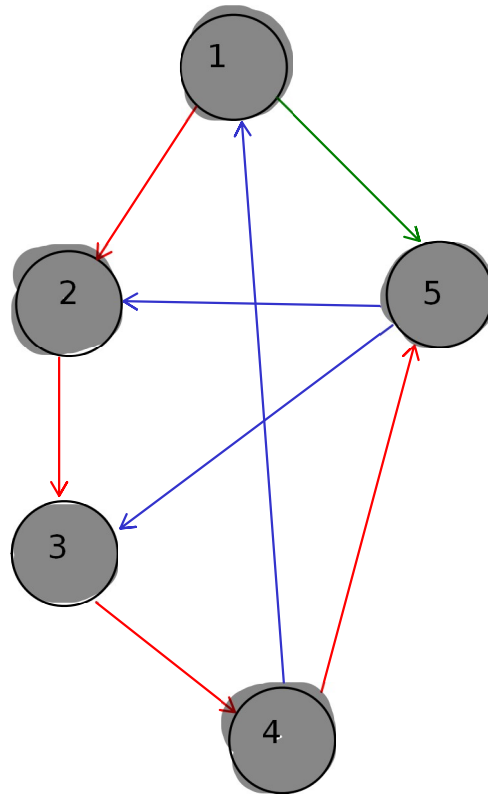


10



11



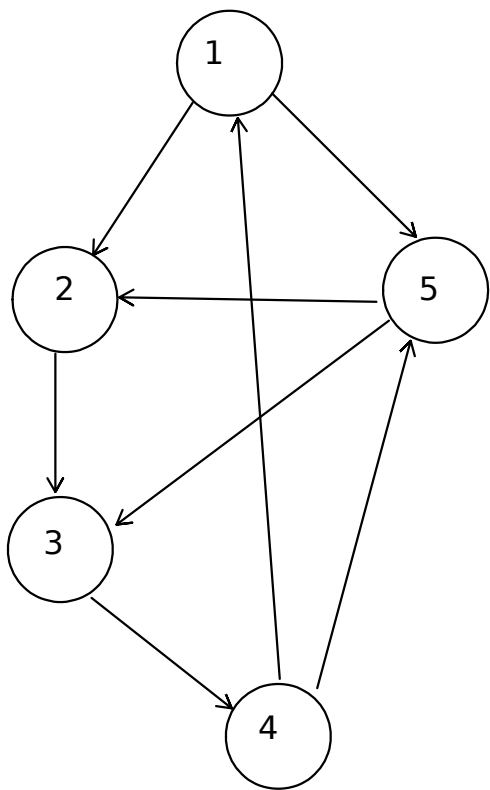


$$\begin{pmatrix}
 0 & 1 & 0 & 0 & 1 \\
 0 & 0 & 1 & 0 & 0 \\
 0 & 0 & 0 & 1 & 0 \\
 1 & 0 & 0 & 0 & 1 \\
 0 & 1 & 1 & 0 & 0
 \end{pmatrix}$$

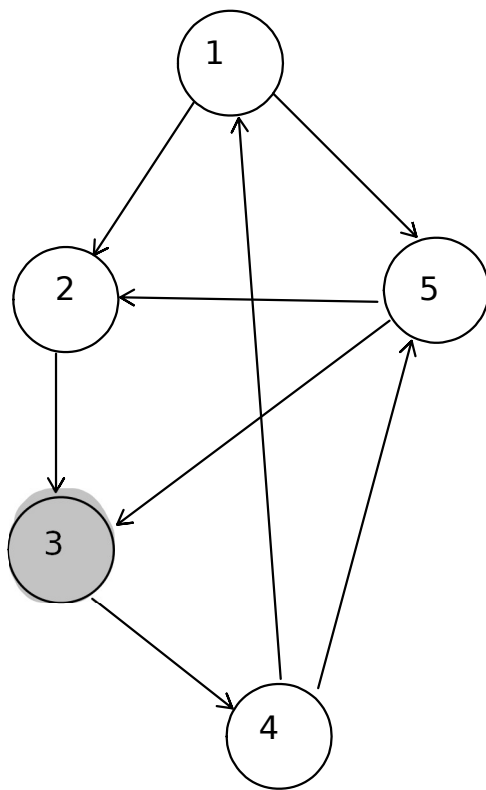
Backward

Forward

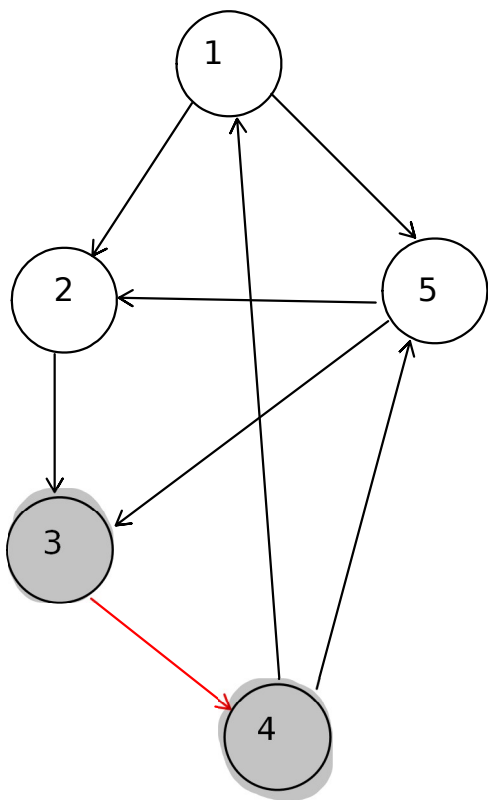
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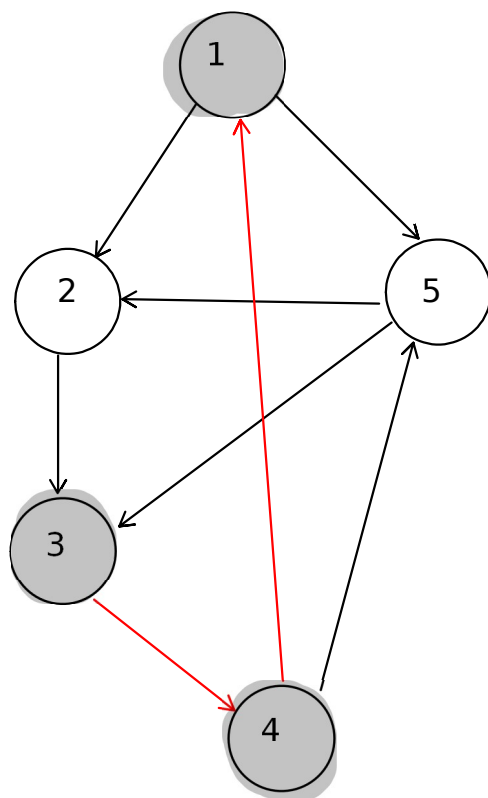
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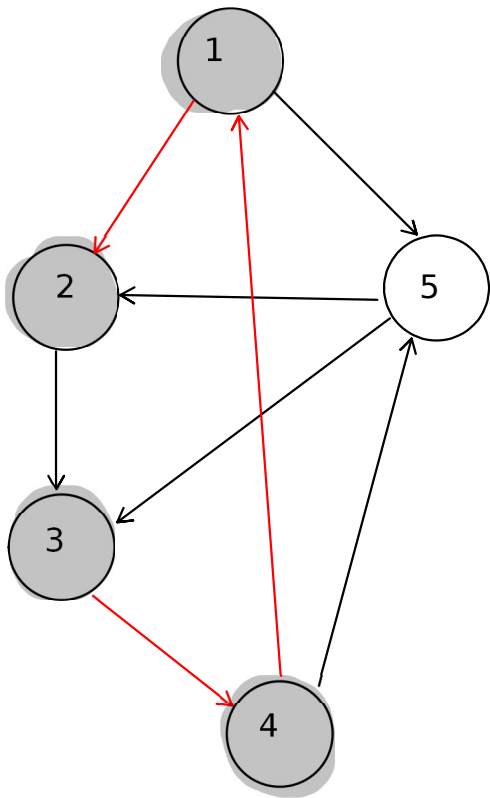
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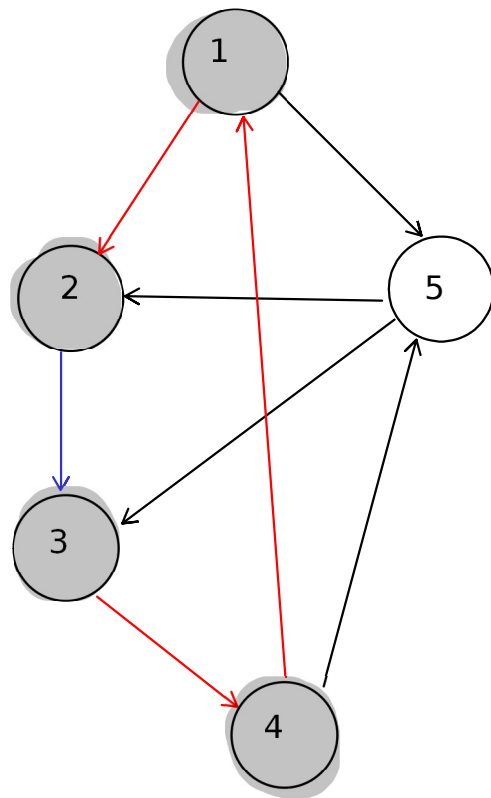
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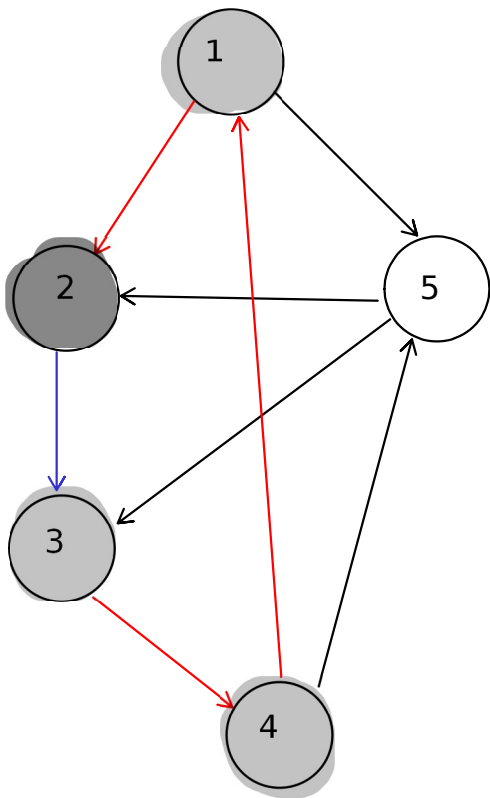
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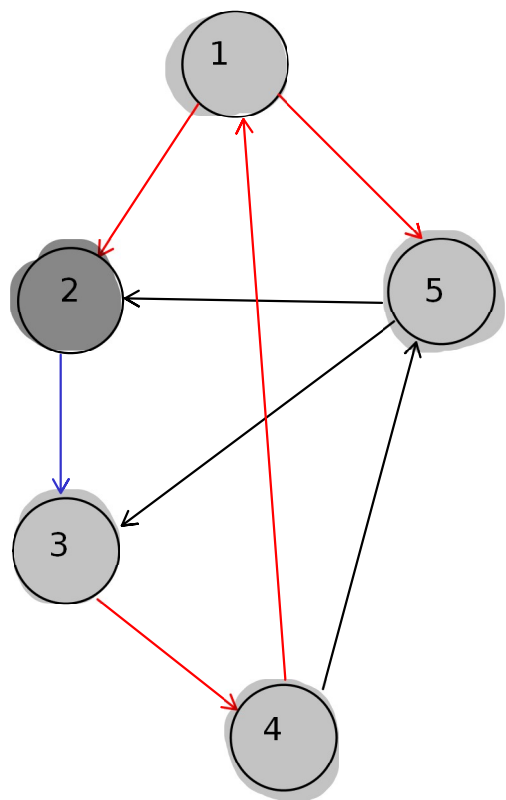
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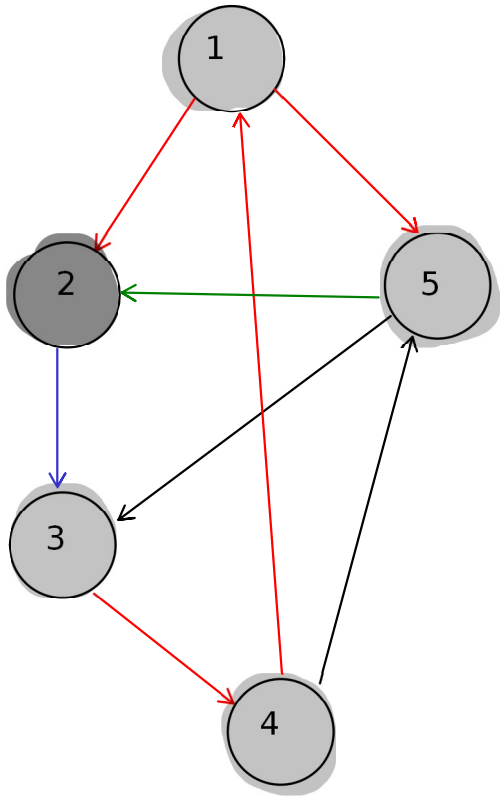
6



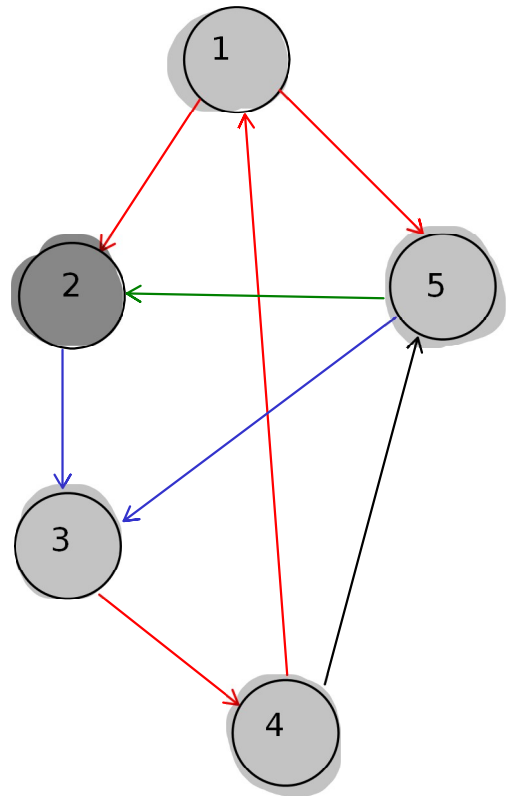
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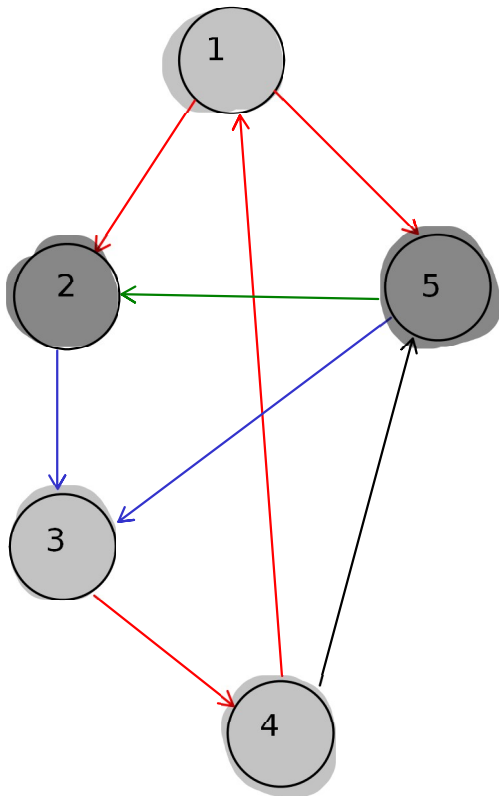
8



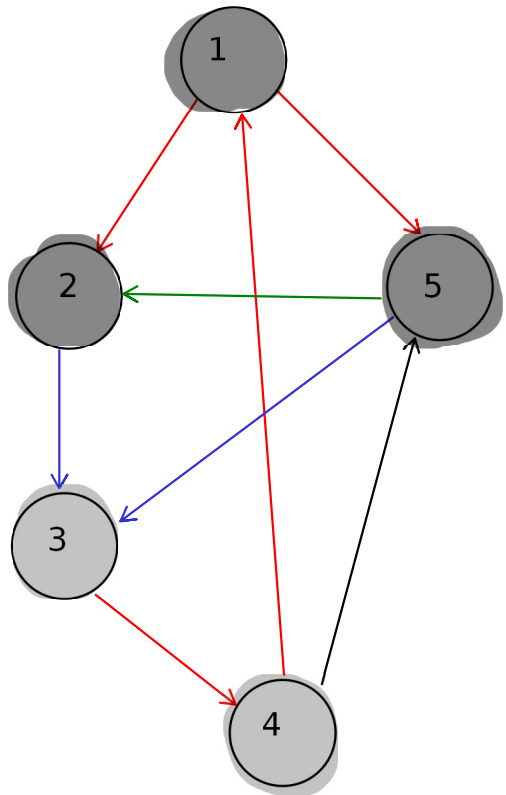
9



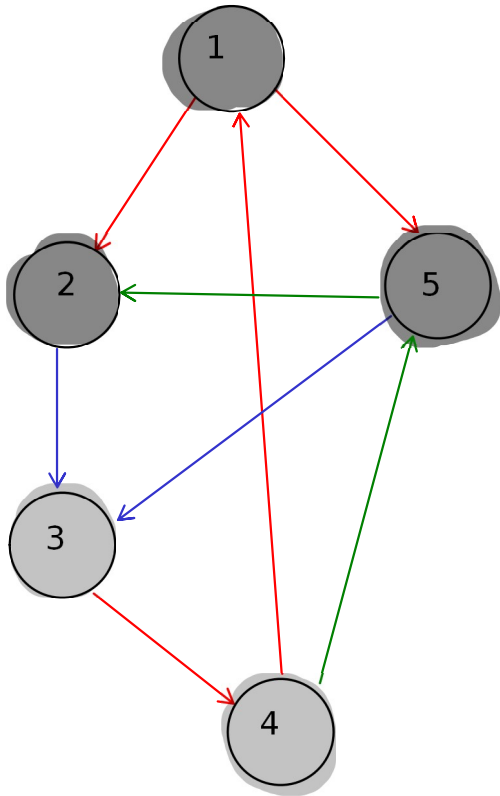
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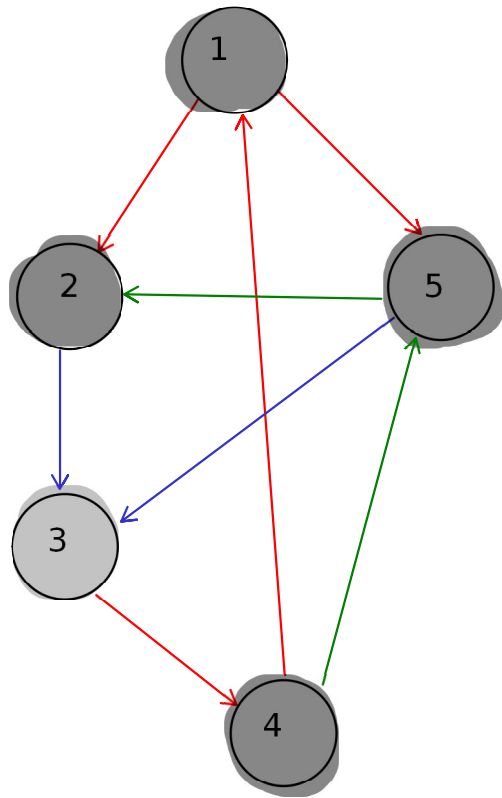
11



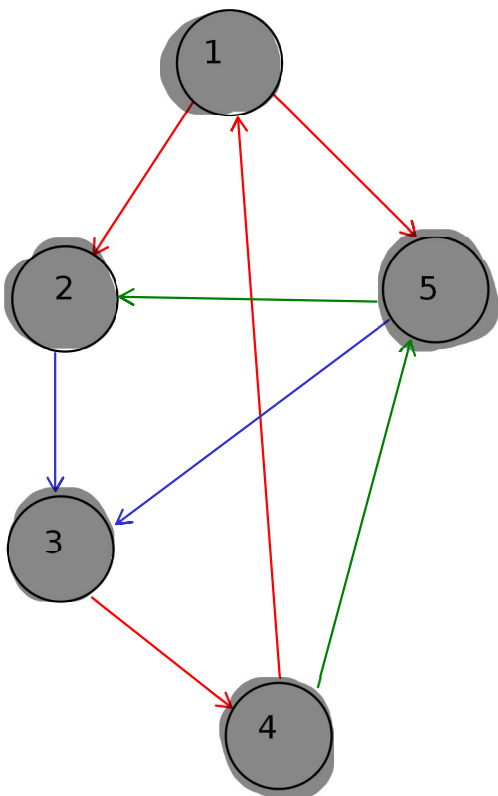
12



13



14



$$\begin{pmatrix} 0 & 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 0 & 1 \\ 0 & 1 & 1 & 0 & 0 \end{pmatrix}$$

Backward

Forward