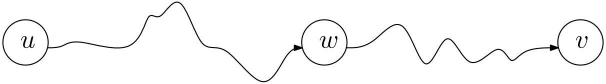
Final Remark About Dynamic Programming

Consider a directed graph $G = (V, E)$, where all edges have weight 1. Let $u, v \in V$ be two vertices.

Assume we know a vertex w on the shortest path from u to v.



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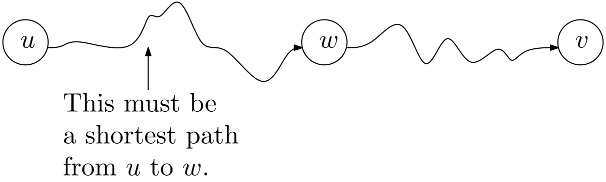

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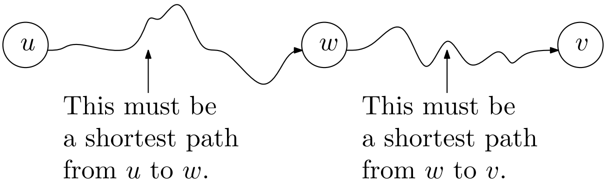

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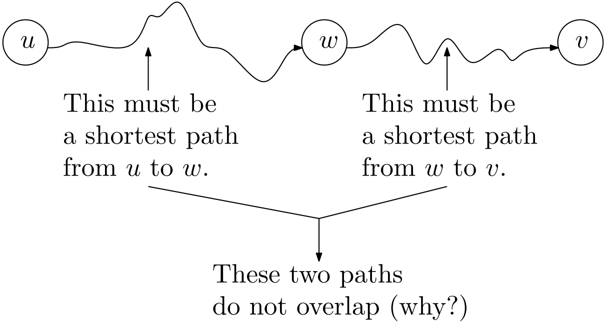

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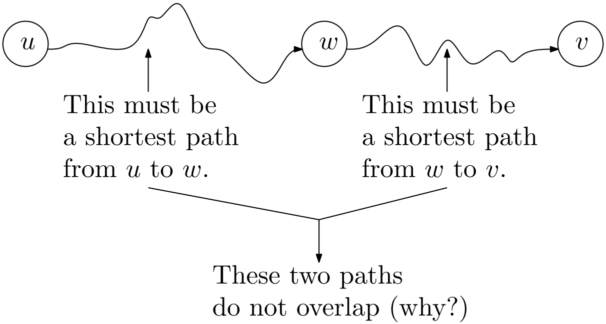

Optimal substructure!

Final Remark About Dynamic Programming

Consider a directed graph $G = (V, E)$, where all edges have weight 1. Let $u, v \in V$ be two vertices.

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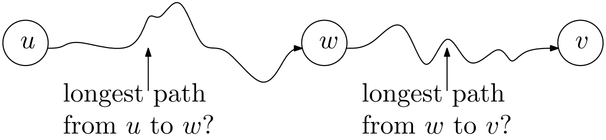

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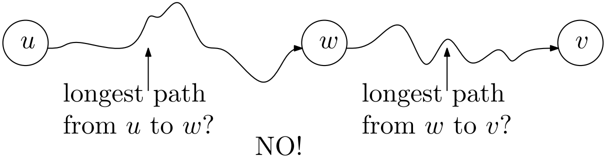

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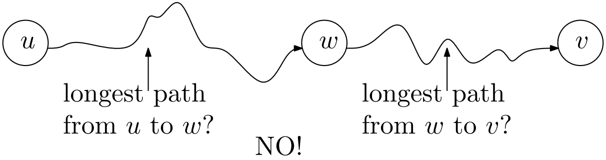
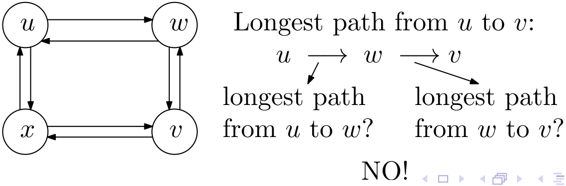


Example:



In fact, computing the longest path is NP-Hard...