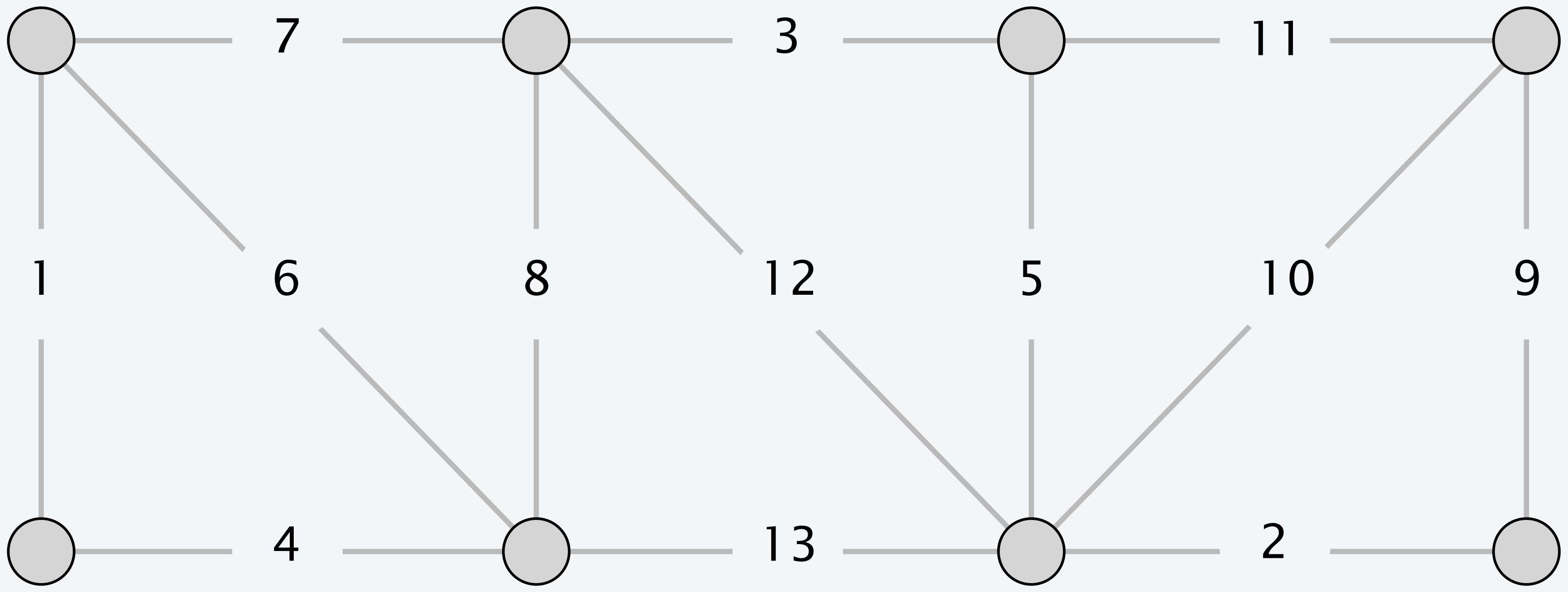
Prim's algorithm demo

Initialize S = any node, $T = \varnothing$.

Repeat $n - 1$ times:

- Add to T a min-weight edge with one endpoint in S.
- Add new node to S.



Prim's algorithm demo

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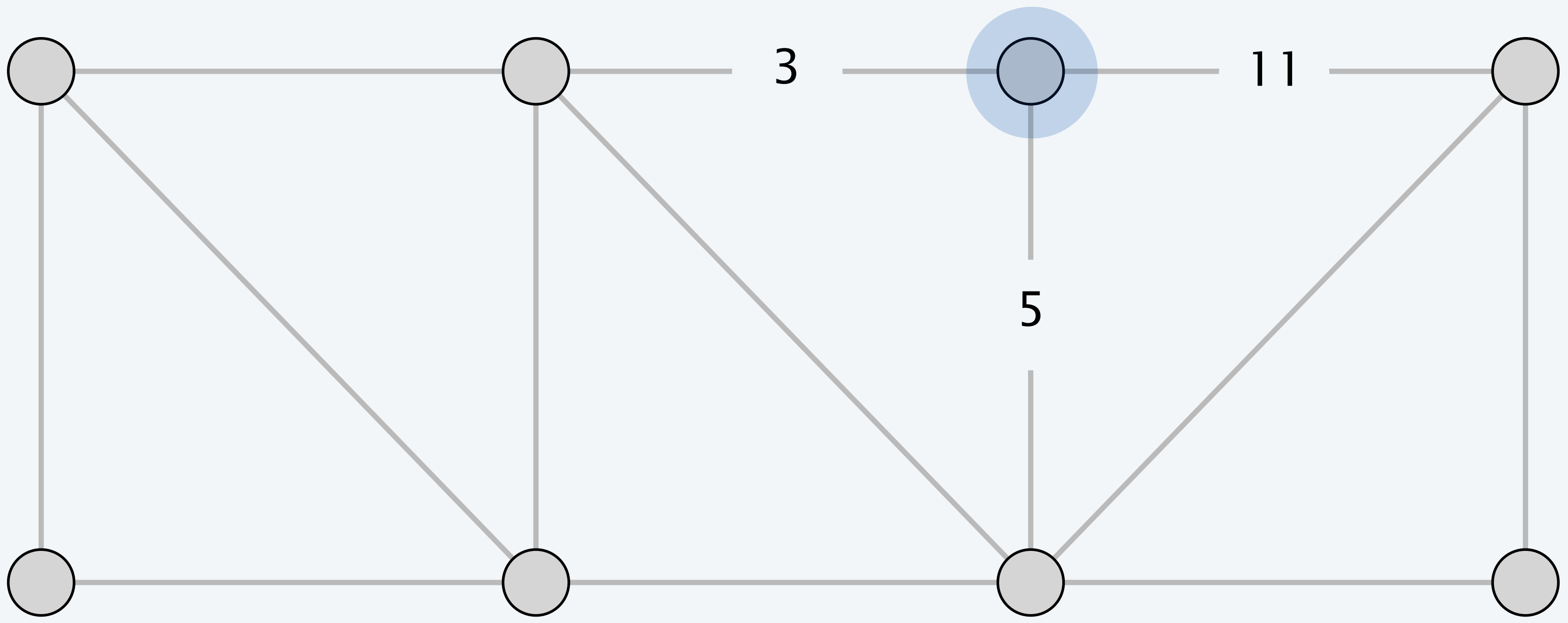

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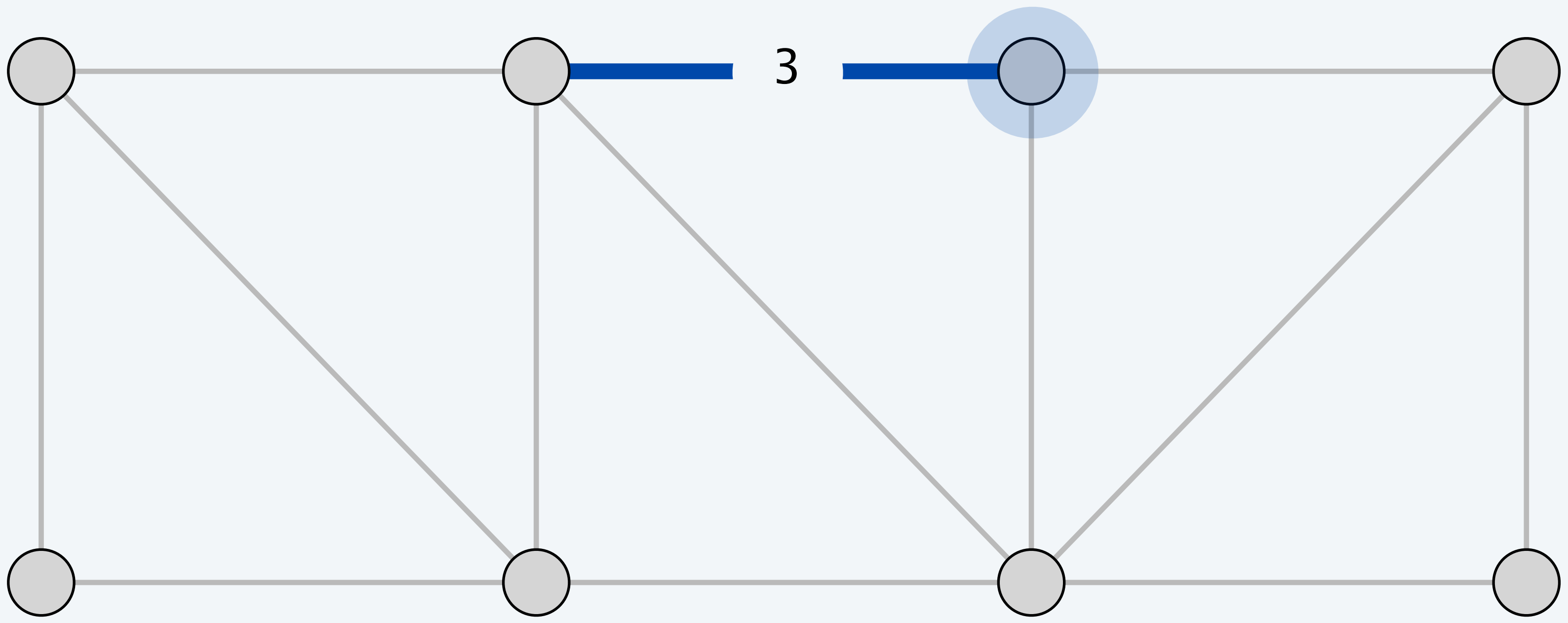

Prim's algorithm demo

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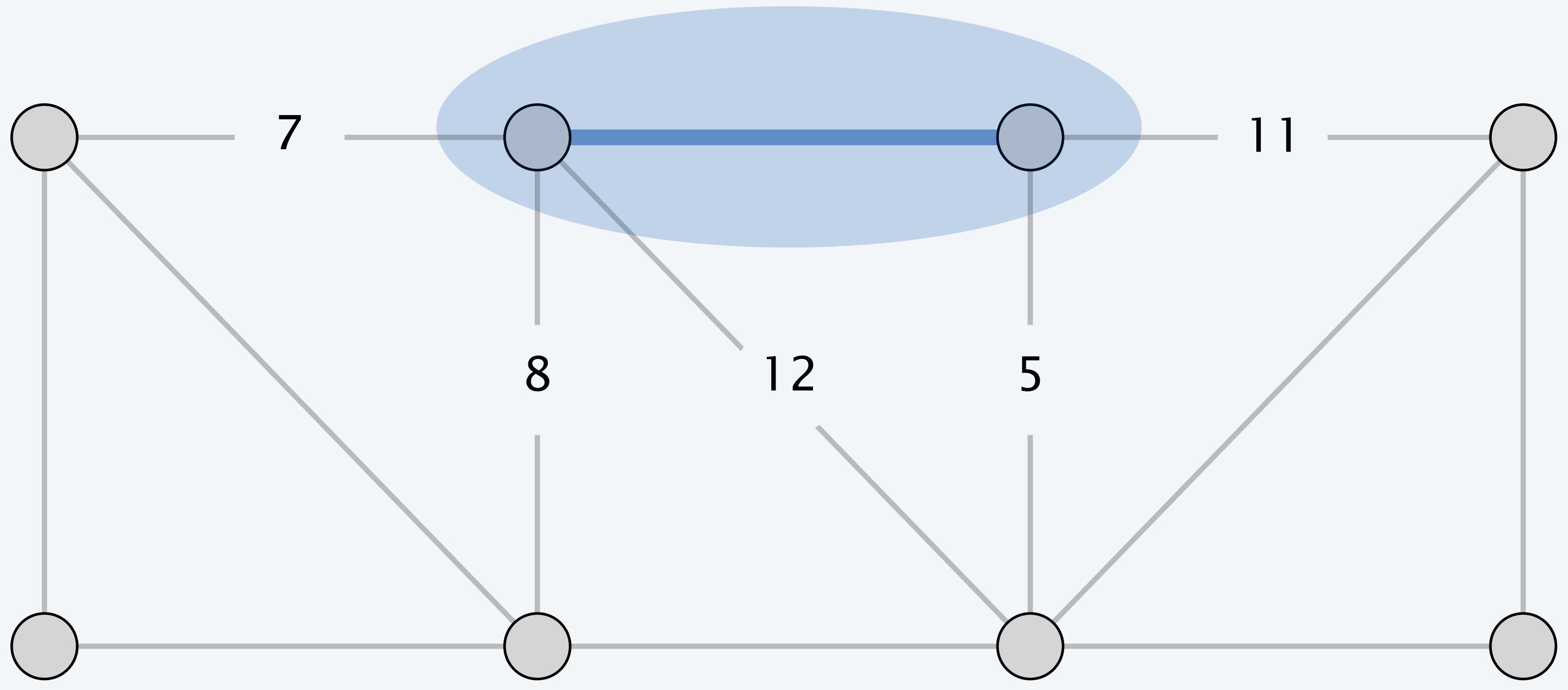

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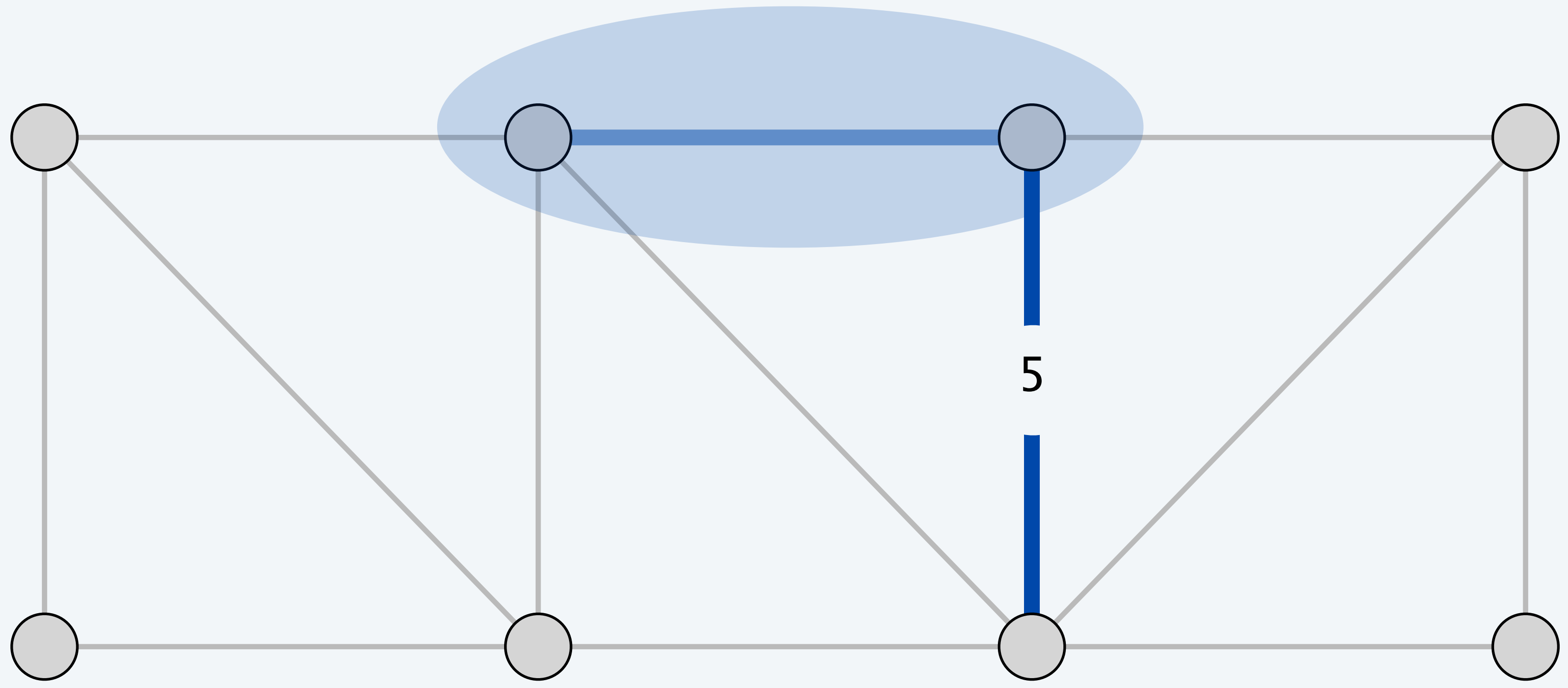

Prim's algorithm demo

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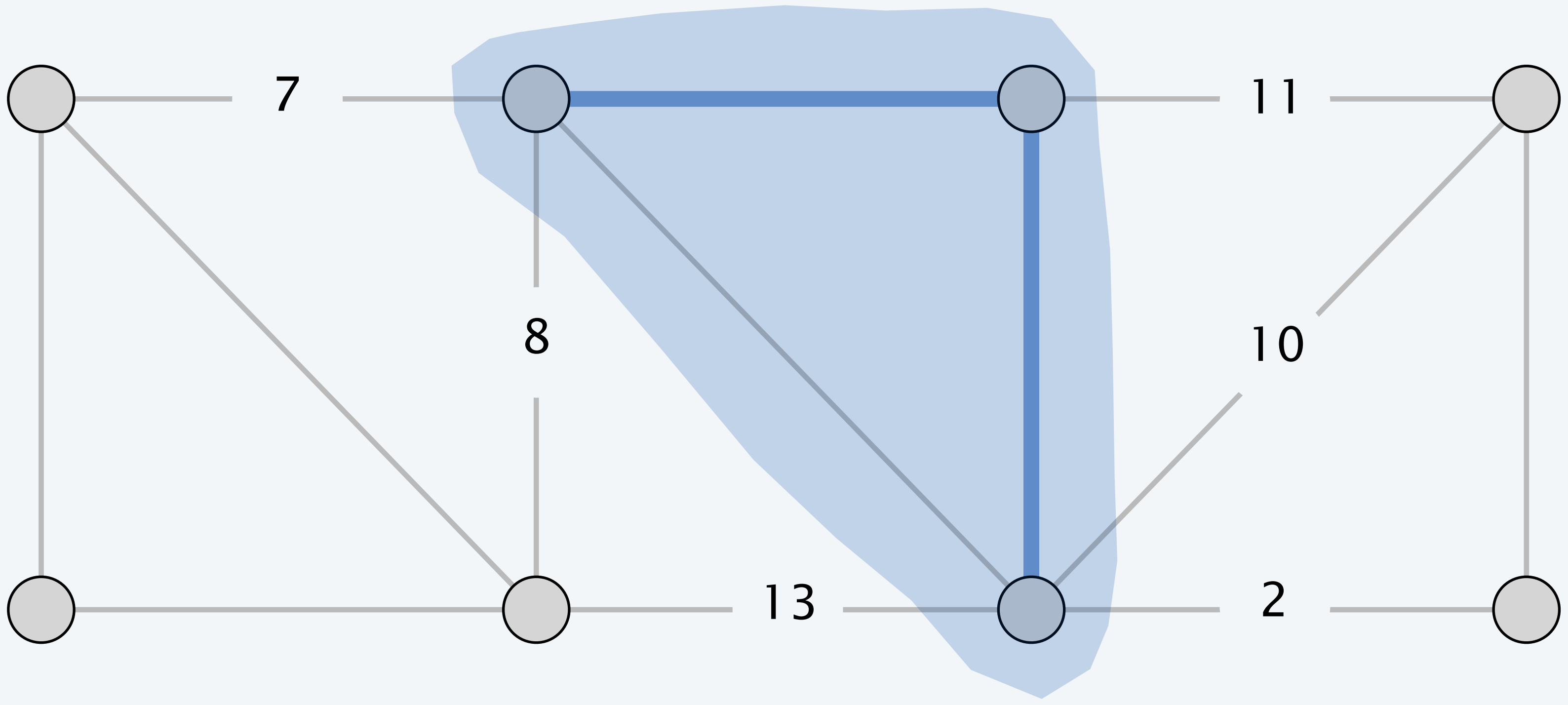

Prim's algorithm demo

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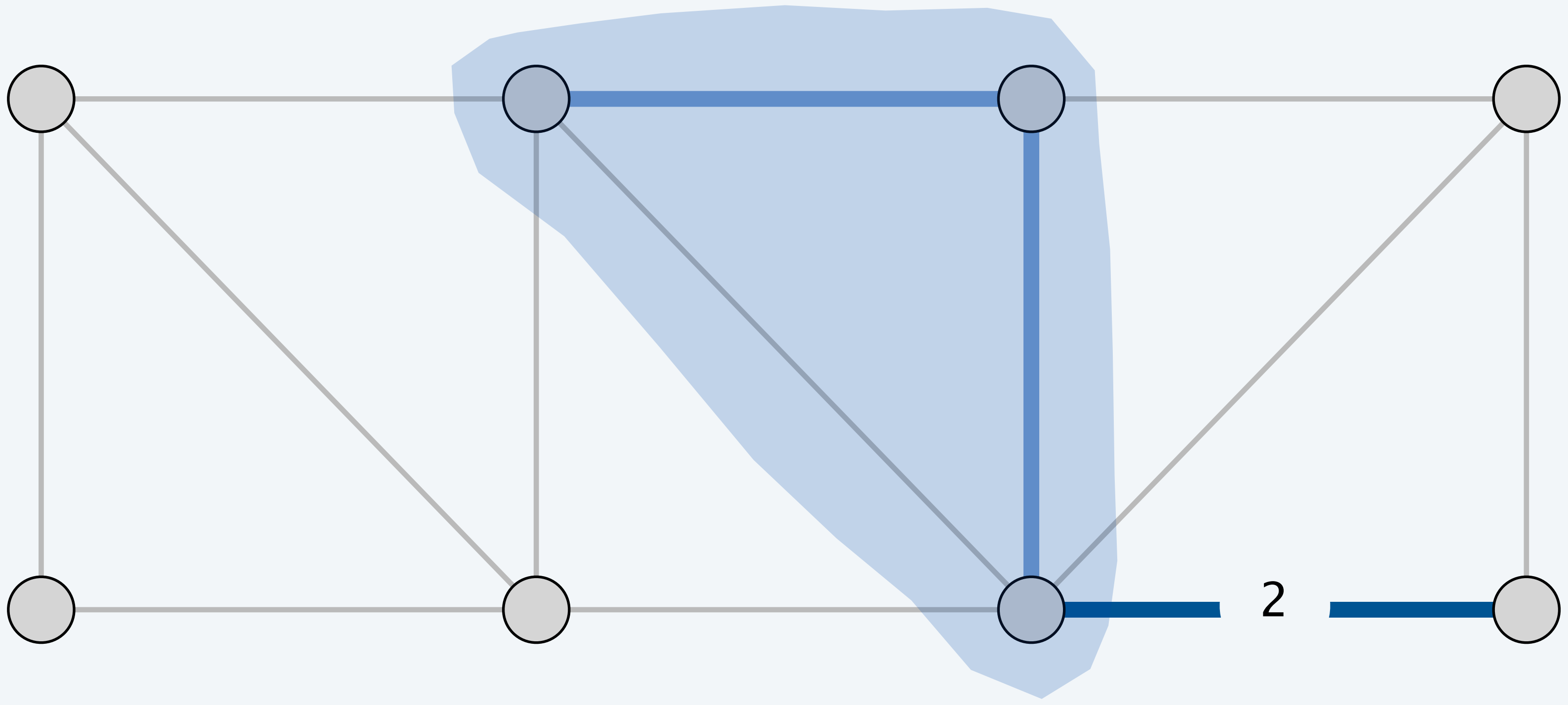

Prim's algorithm demo

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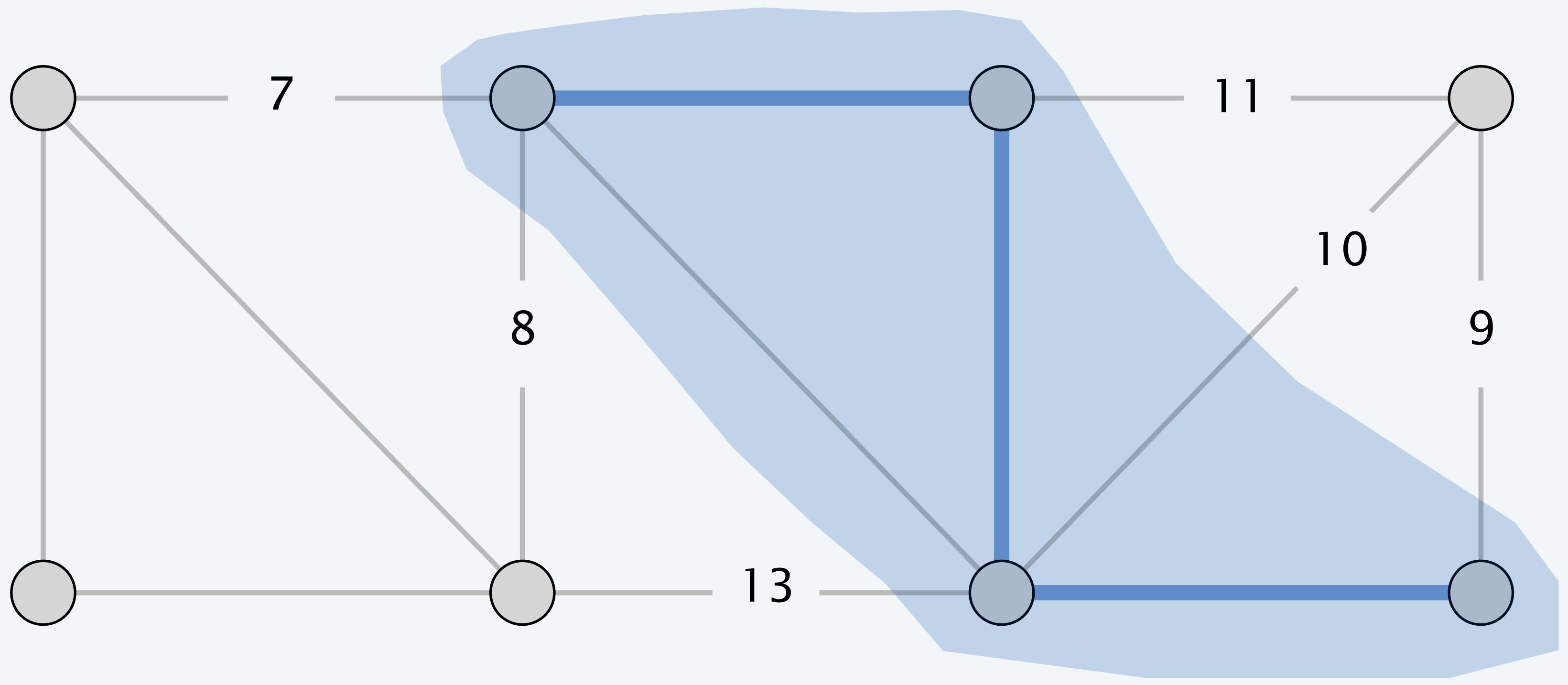

Prim's algorithm demo

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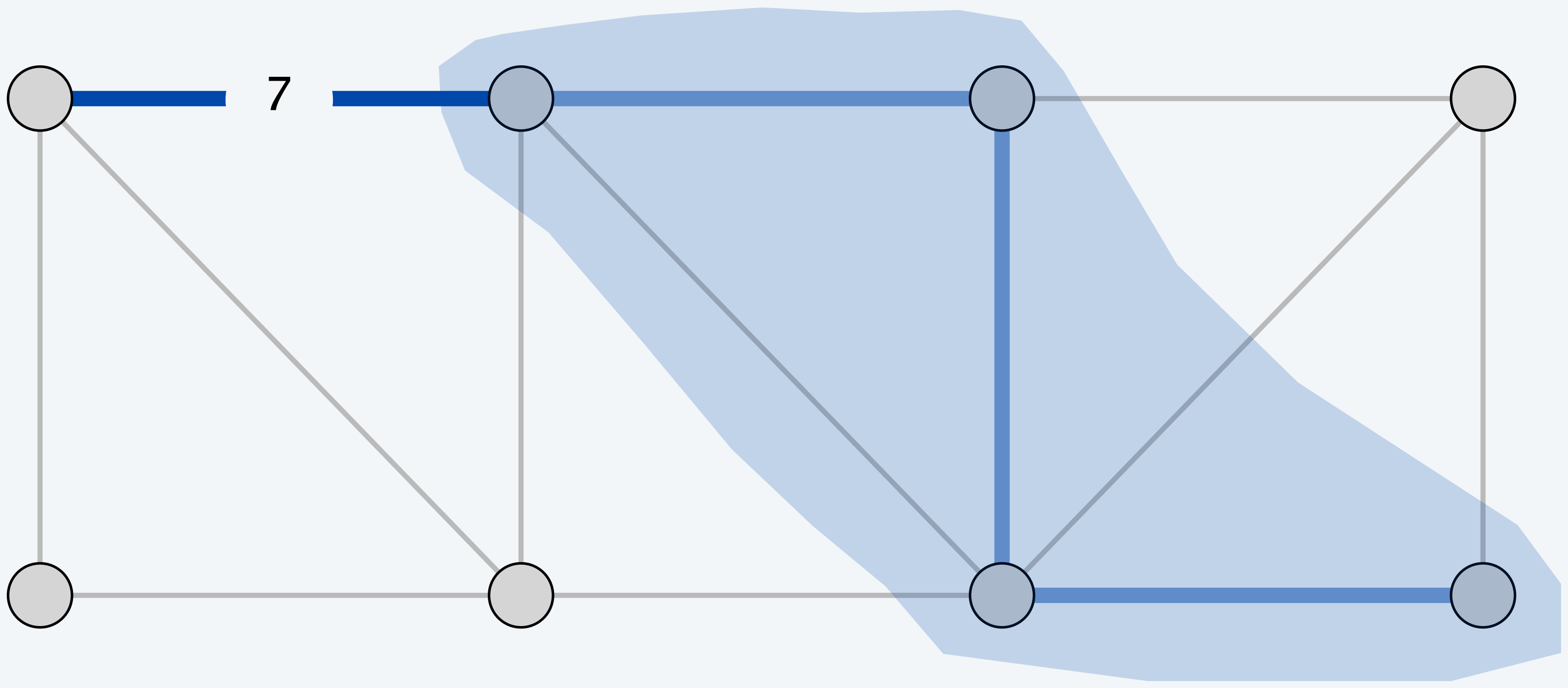

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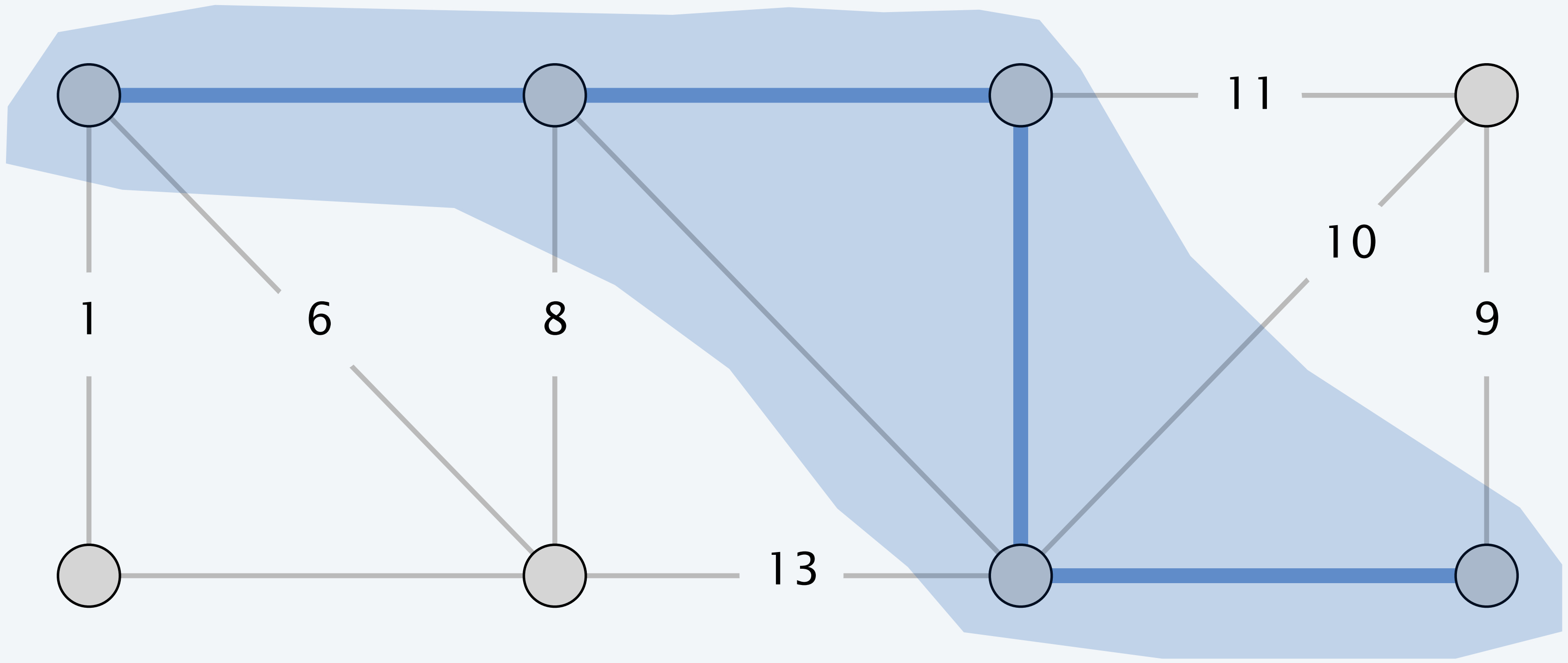

Prim's algorithm demo

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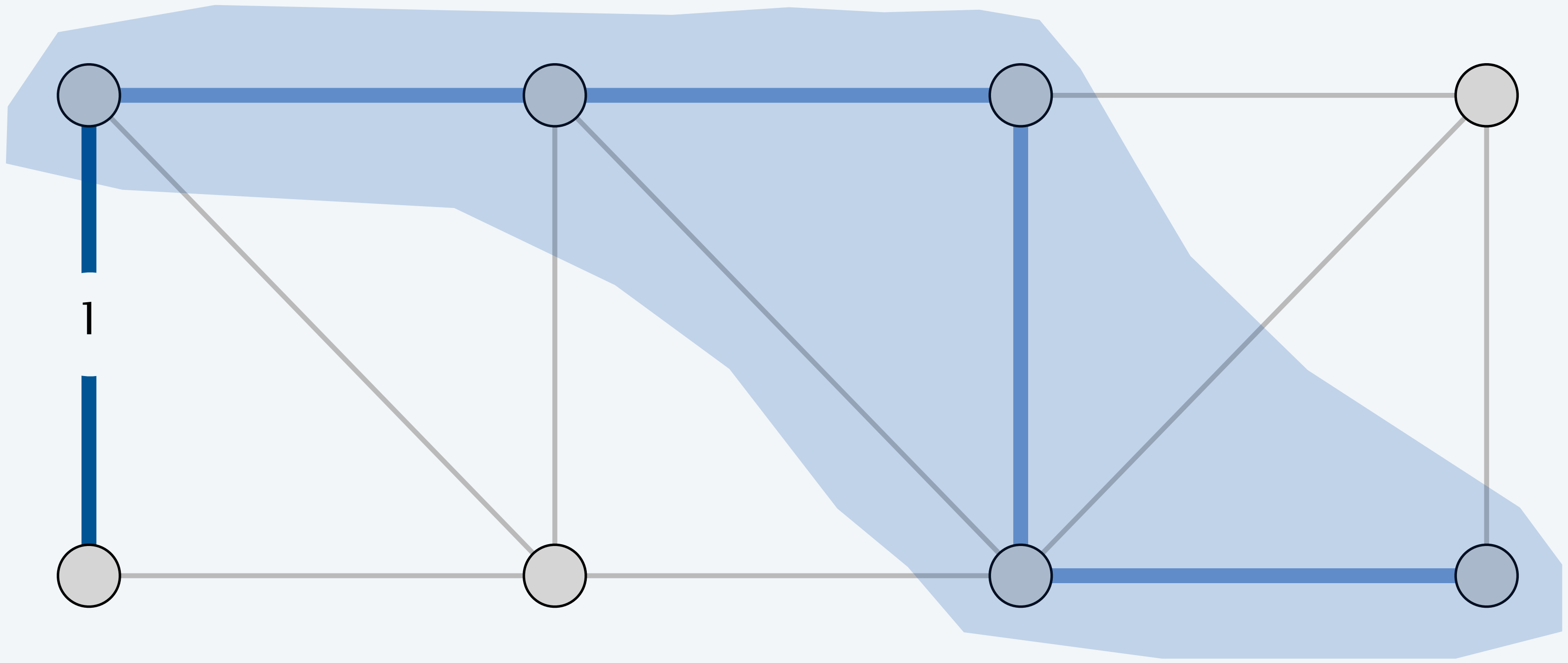

Prim's algorithm demo

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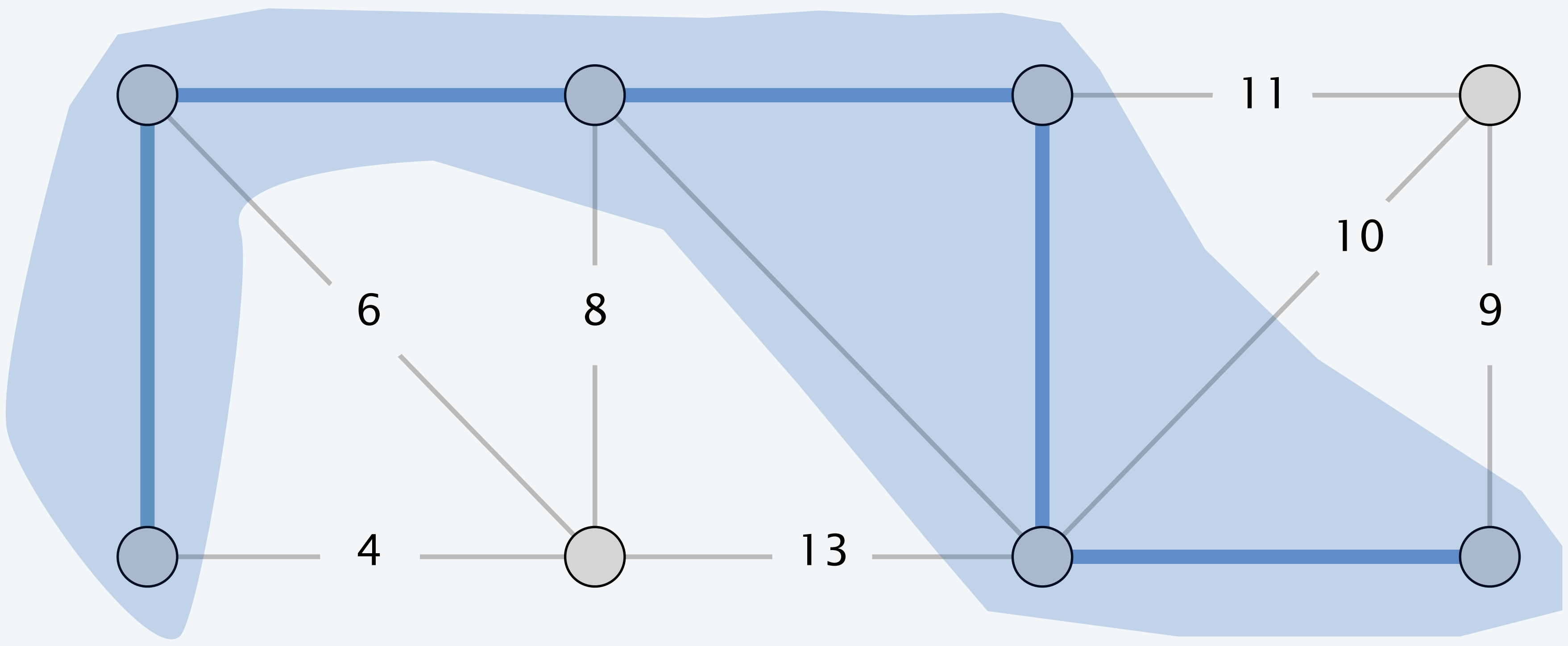

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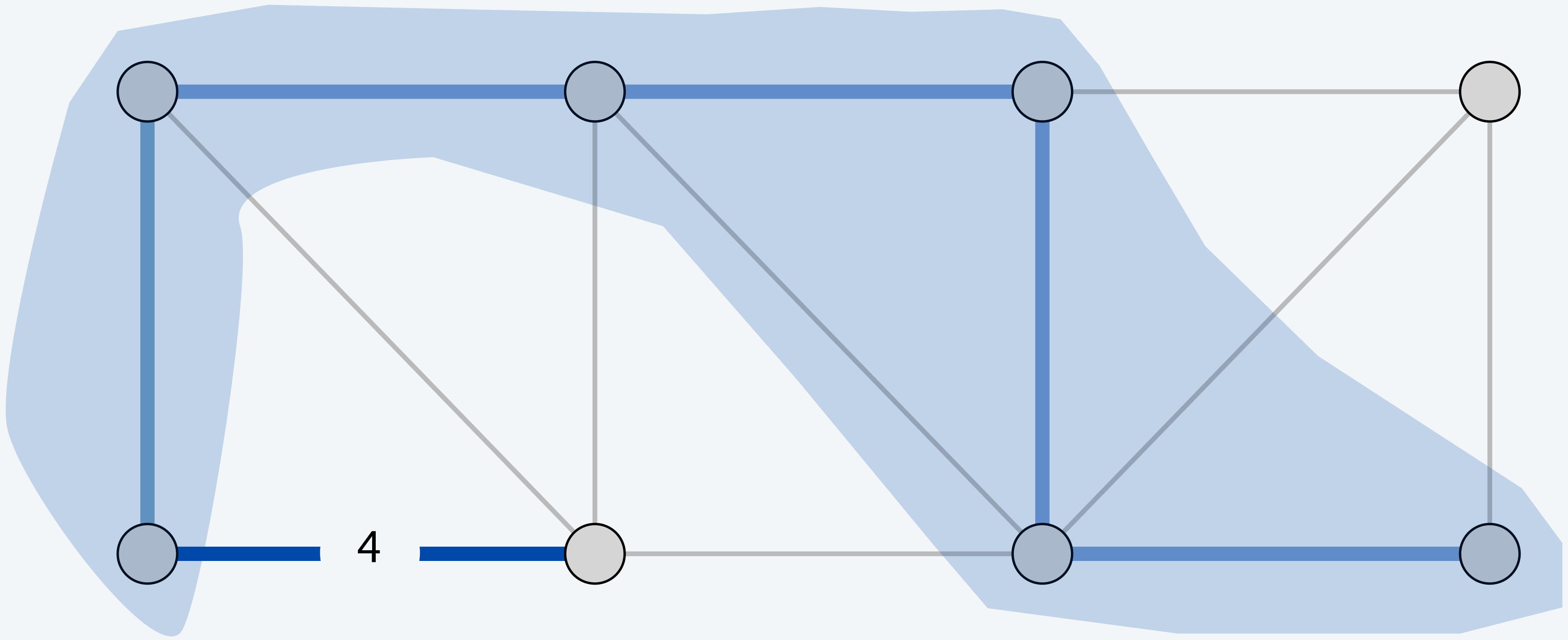

Prim's algorithm demo

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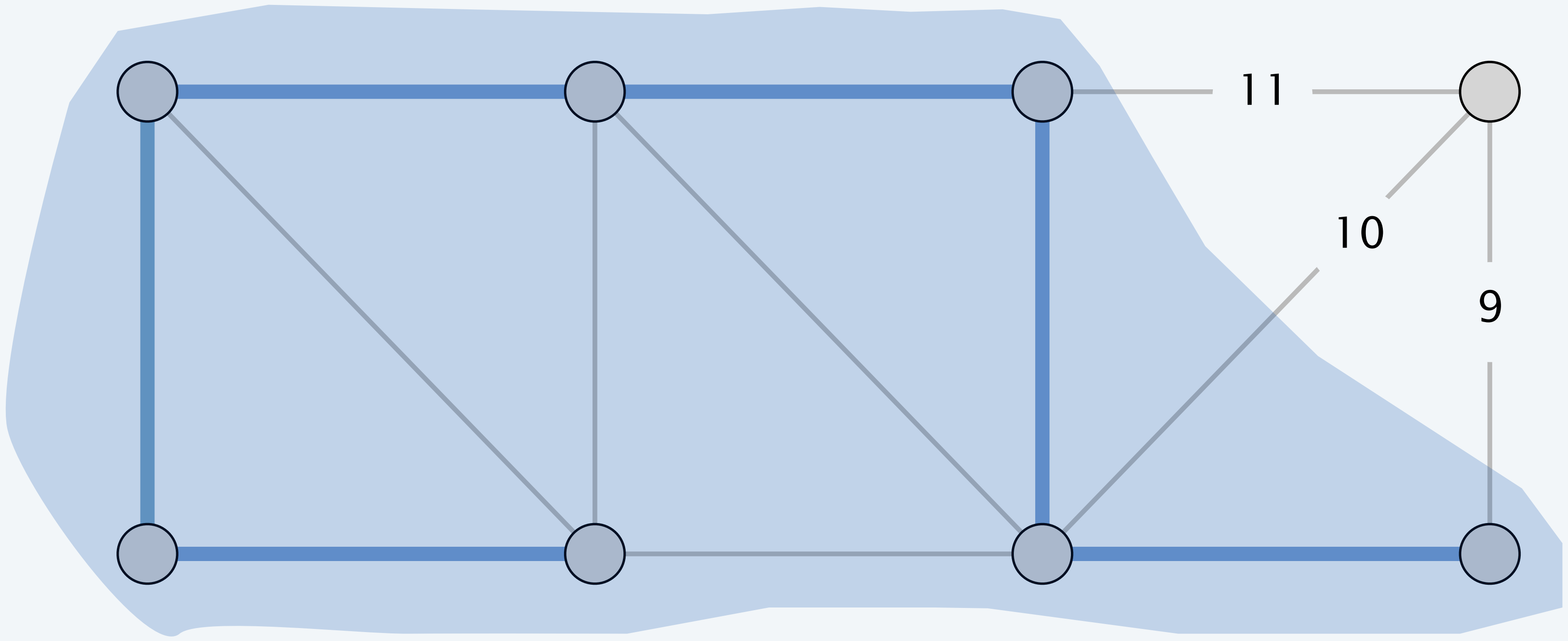

Prim's algorithm demo

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Repeat $n - 1$ times:

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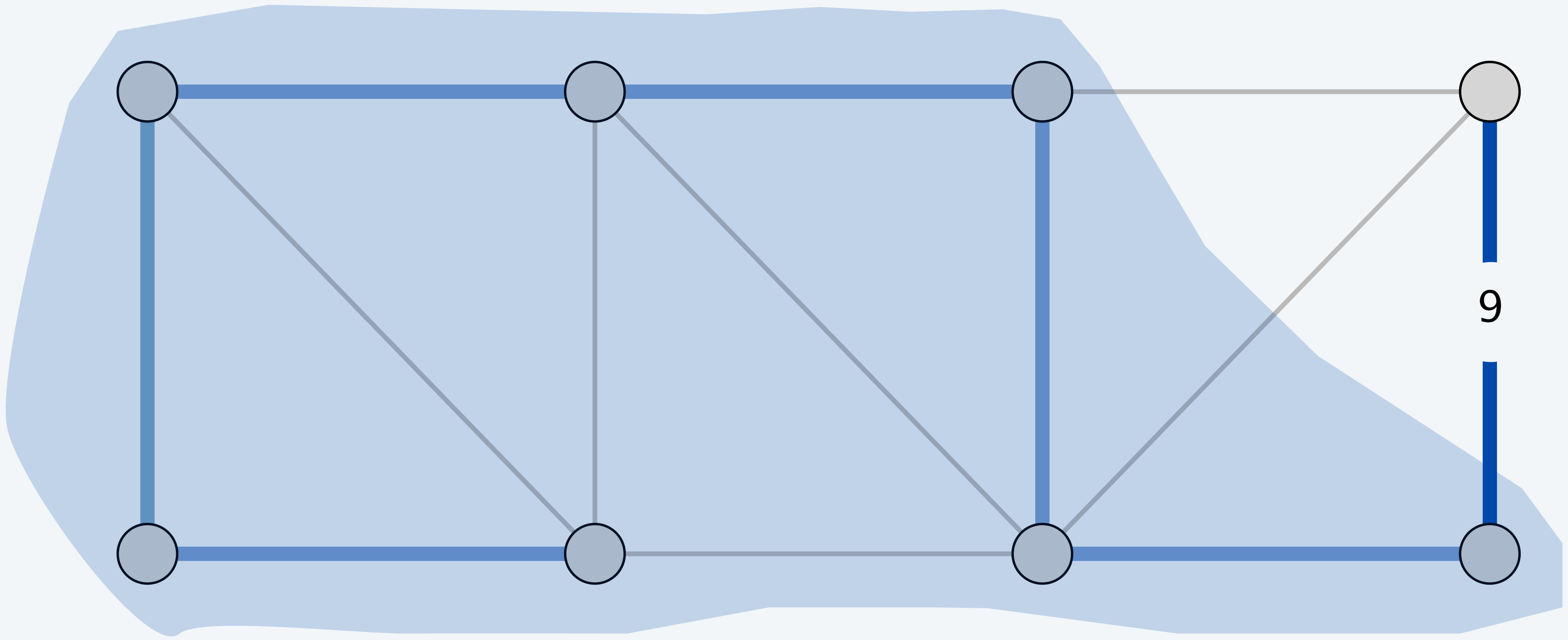
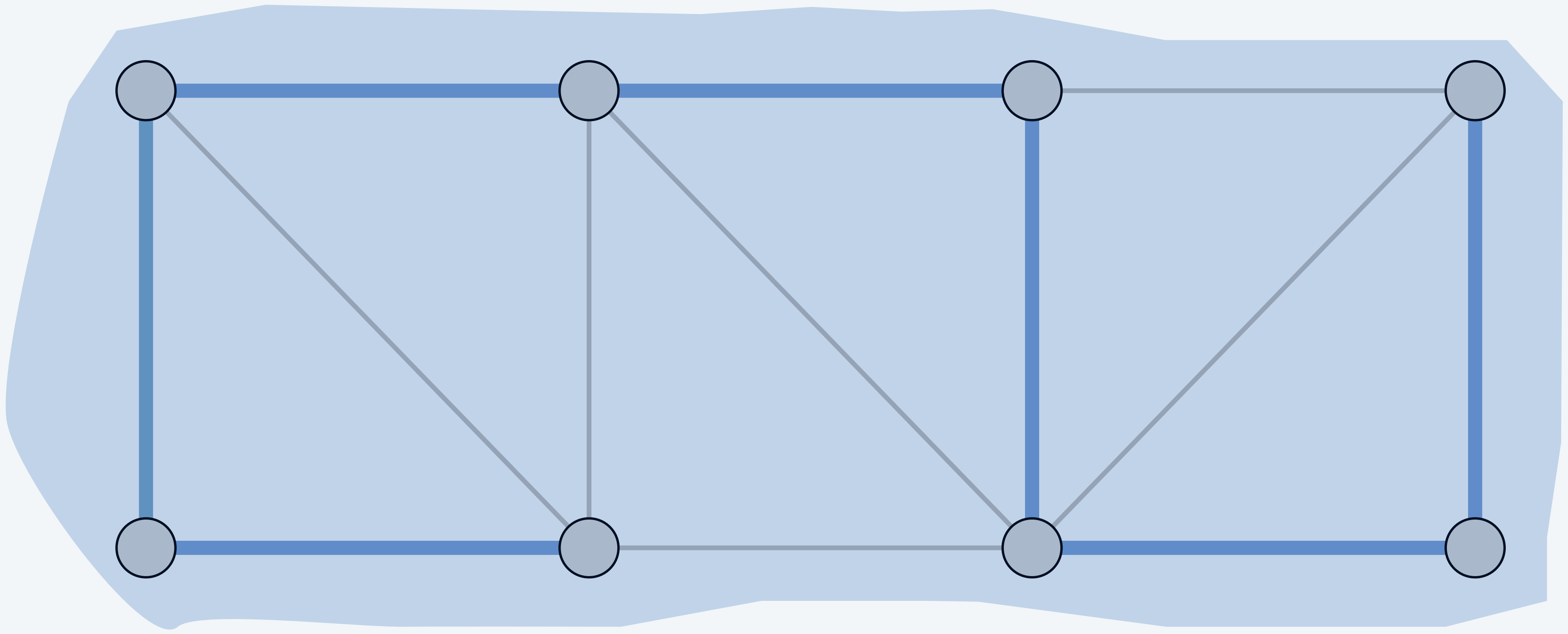


Prim's algorithm demo

Initialize S = any node, $T = \emptyset$.

Repeat $n - 1$ times:

- Add to T a min-weight edge with one endpoint in S.
- Add new node to S.



Prim's algorithm demo

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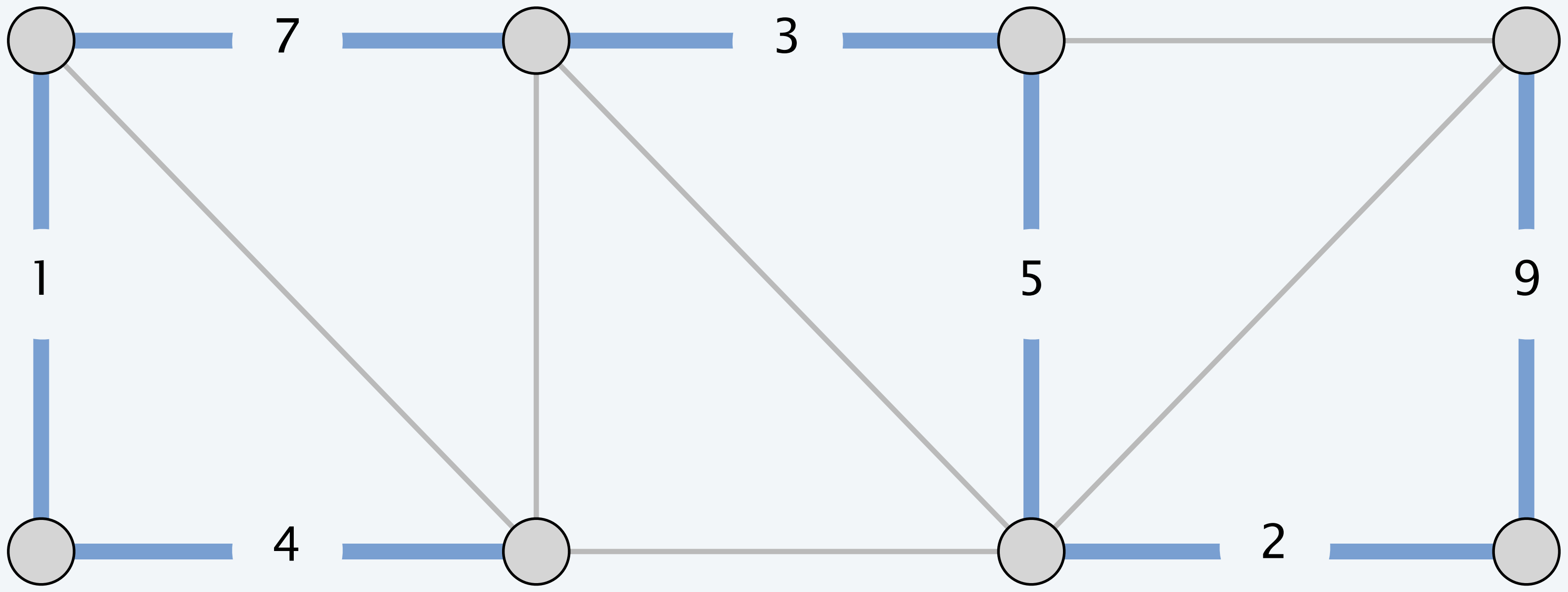
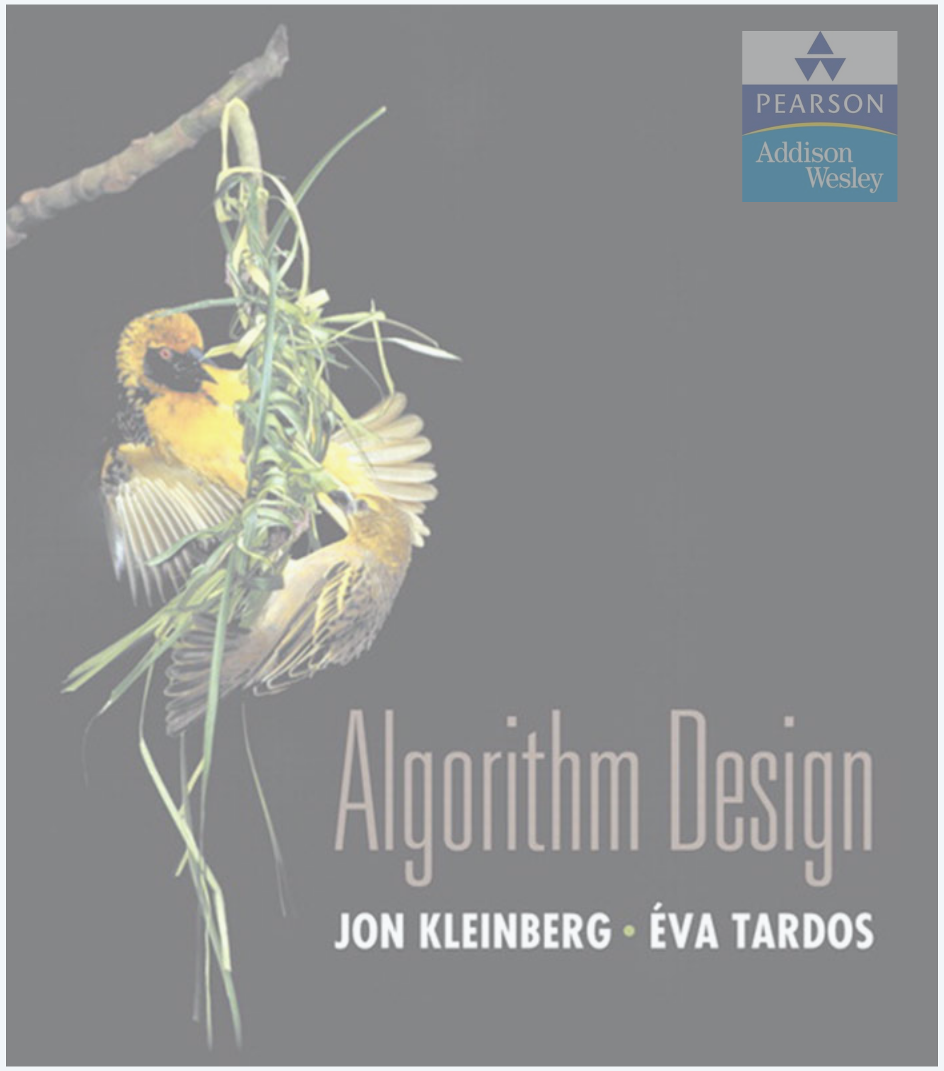




SECTION 4.5

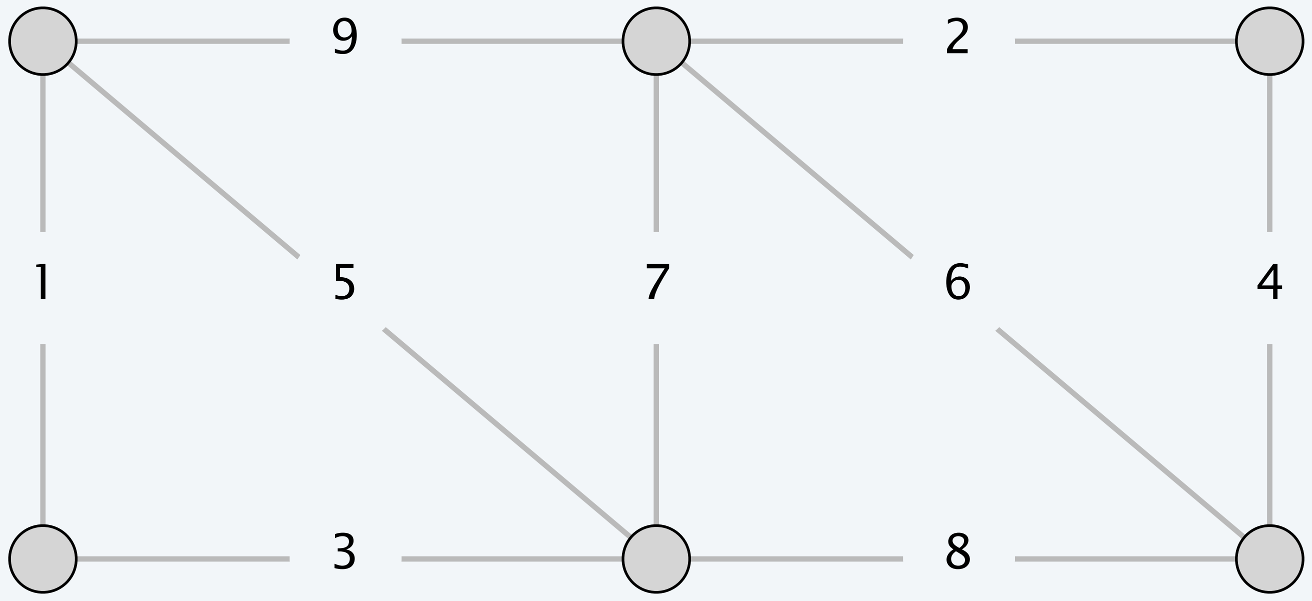
4. GREEDY ALGORITHMS II

- red-rule blue-rule demo
- Prim's algorithm demo
- *Kruskal's algorithm demo*
- reverse-delete algorithm demo
- Boruvka's algorithm demo

Kruskal's algorithm demo

Consider edges in ascending order of weight:

- Add to T unless it would create a cycle.



Kruskal's algorithm demo

Consider edges in ascending order of weight:

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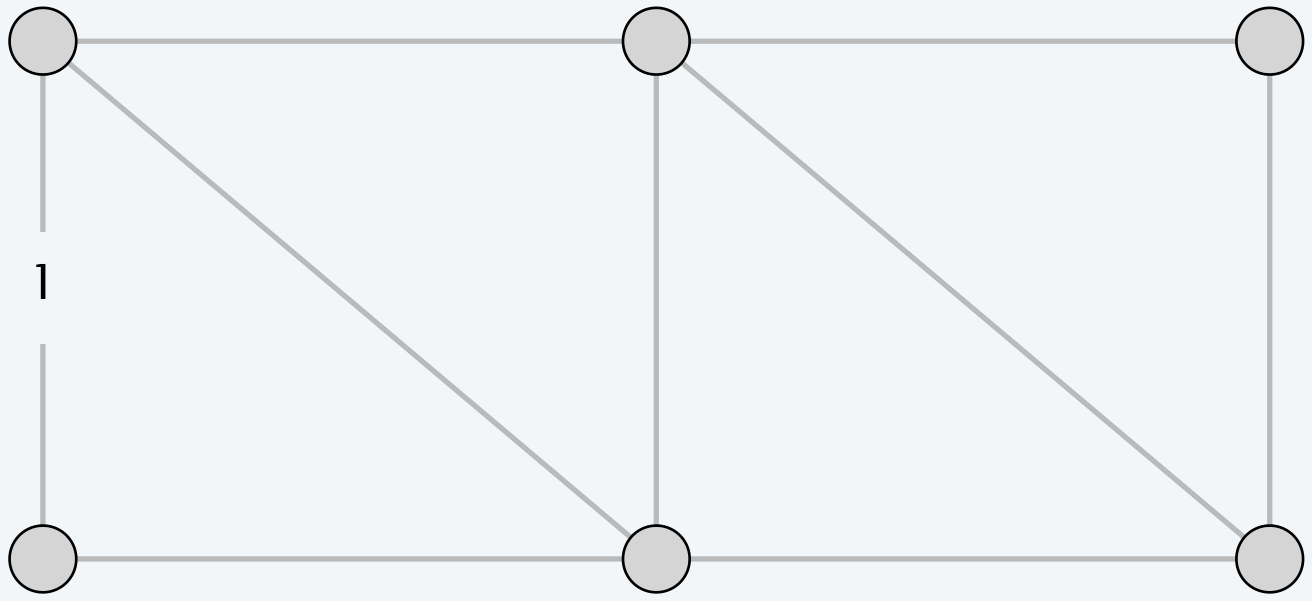

Kruskal's algorithm demo

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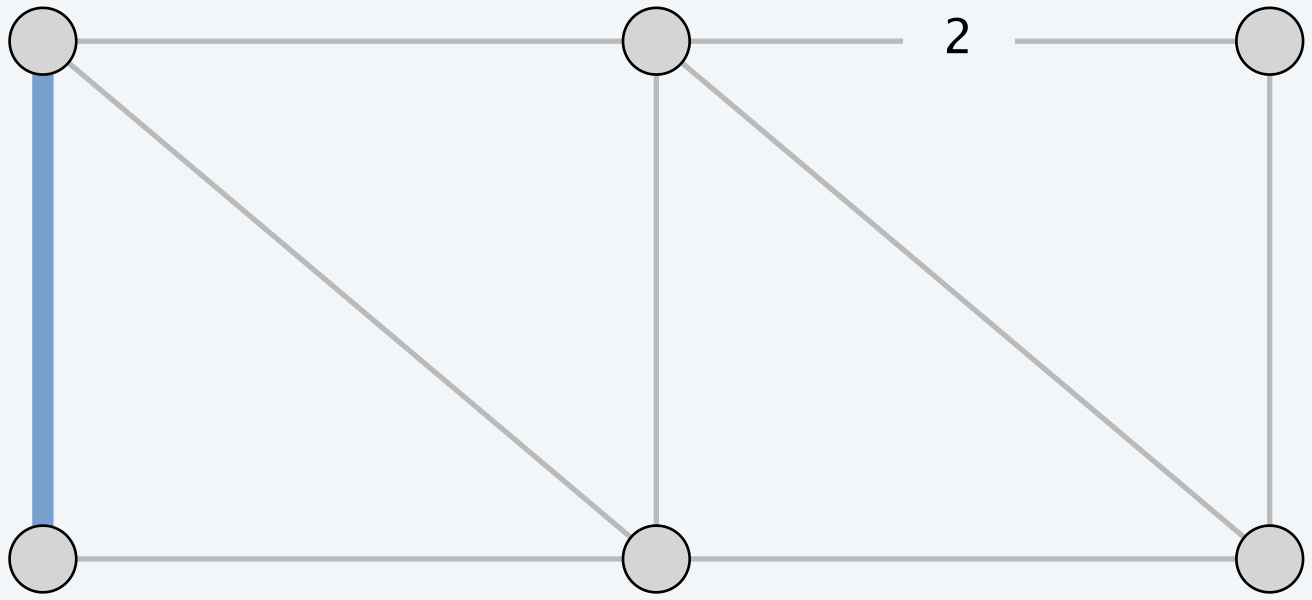

Kruskal's algorithm demo

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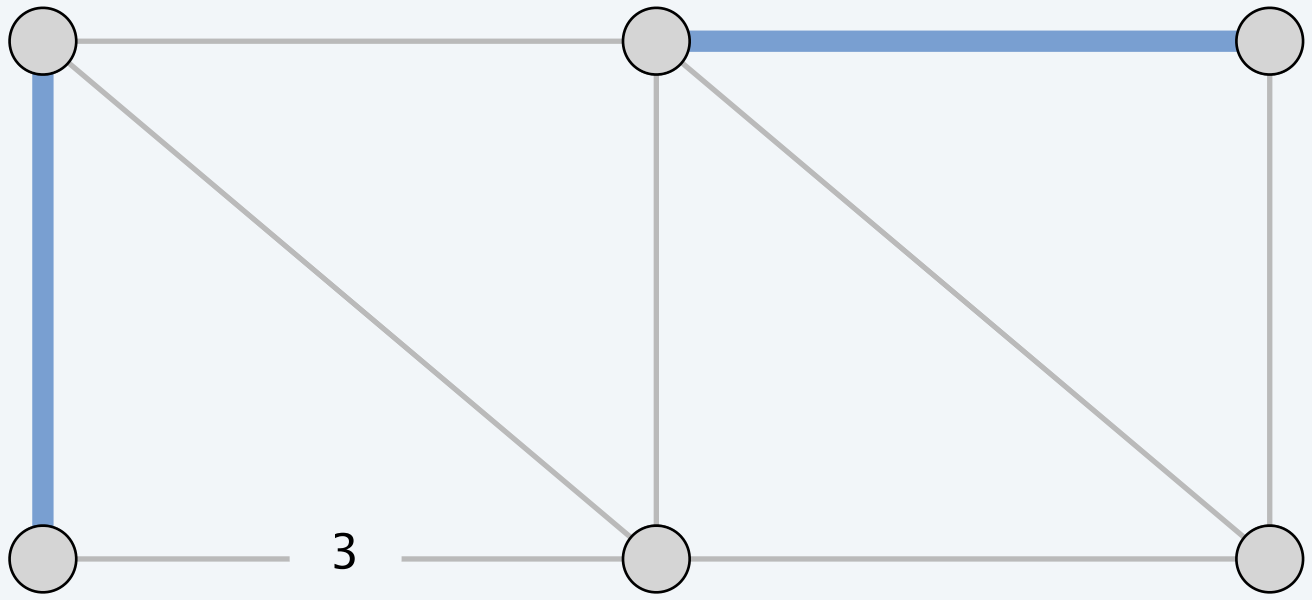

Kruskal's algorithm demo

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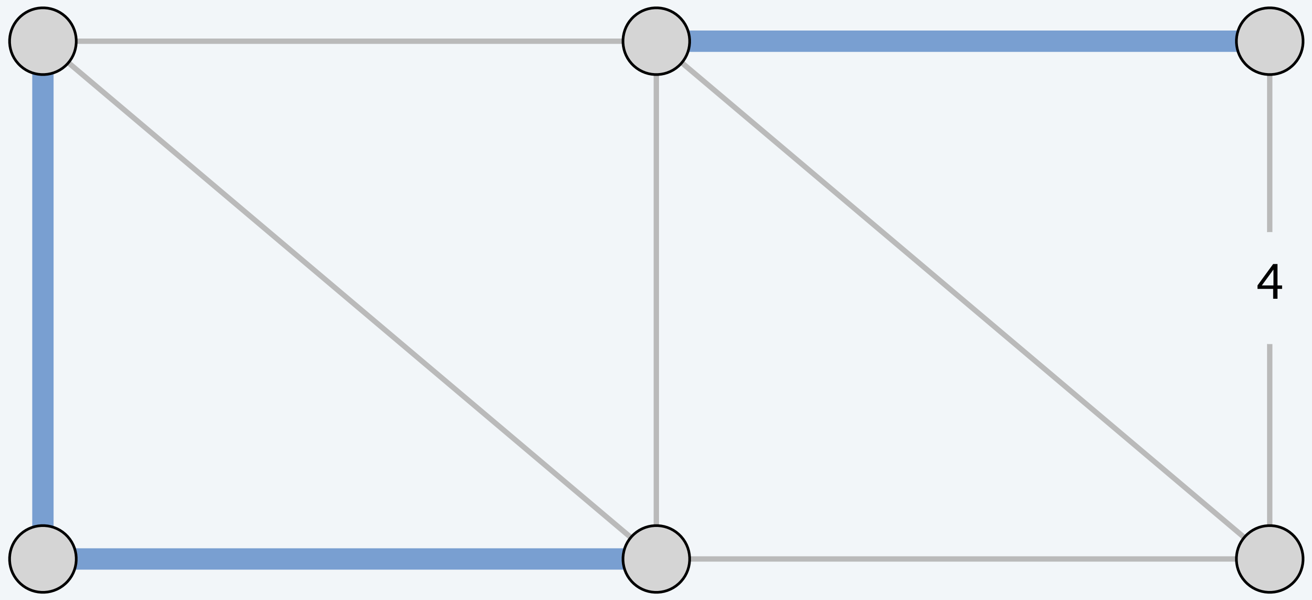

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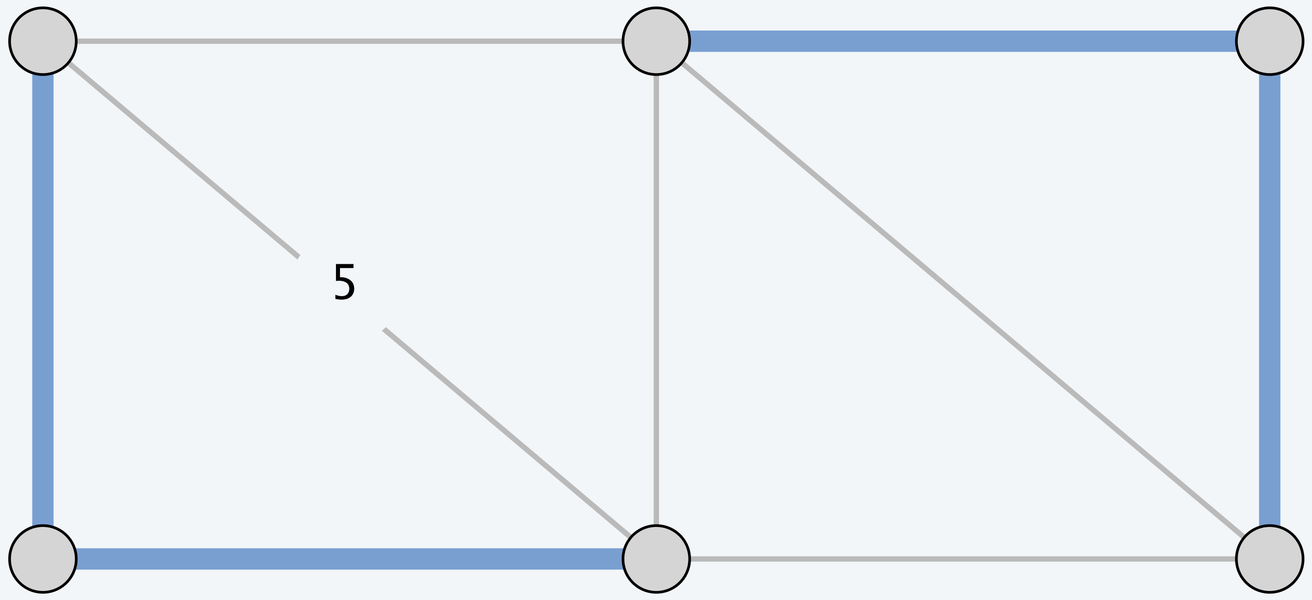

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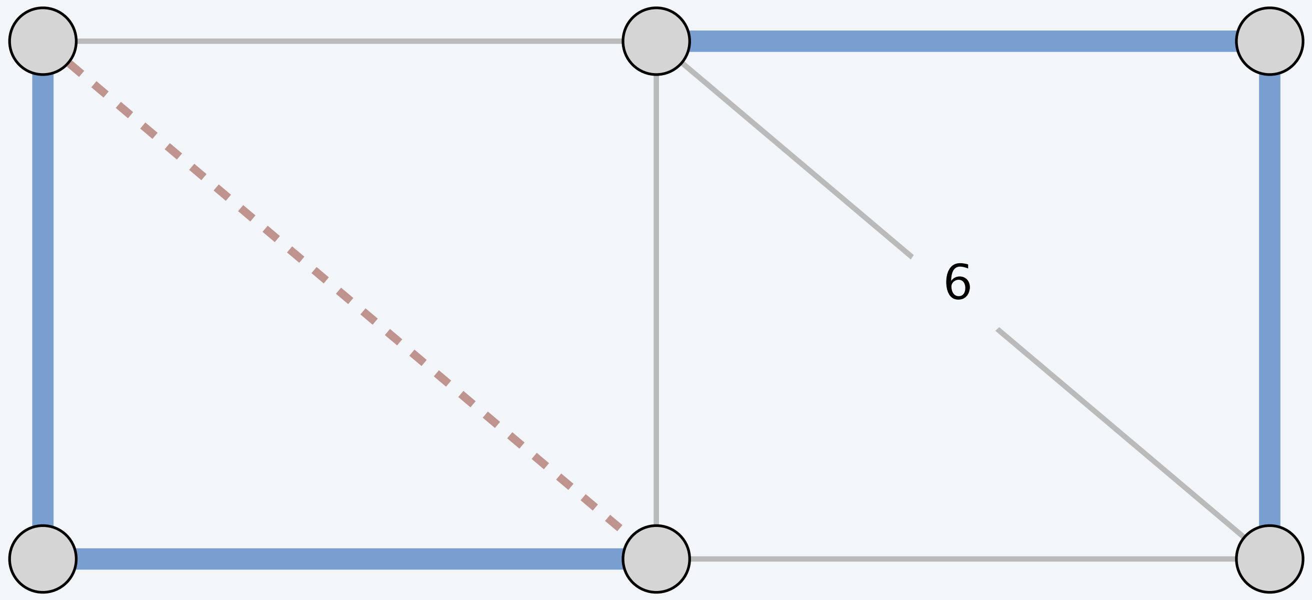

Kruskal's algorithm demo

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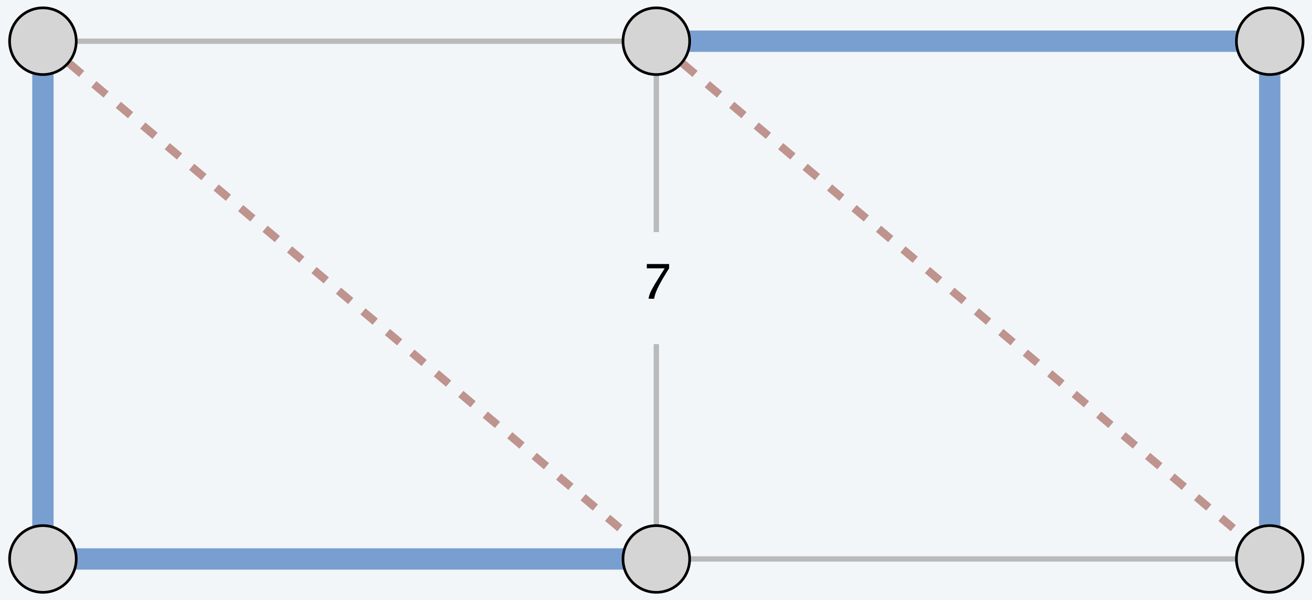

Kruskal's algorithm demo

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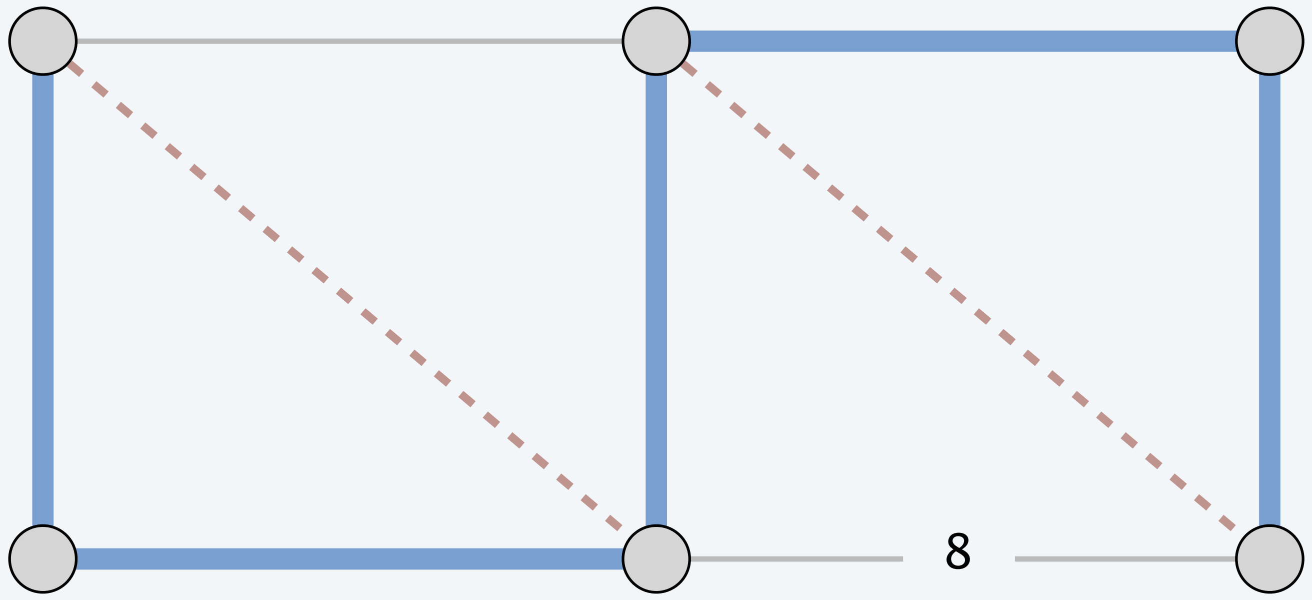

Kruskal's algorithm demo

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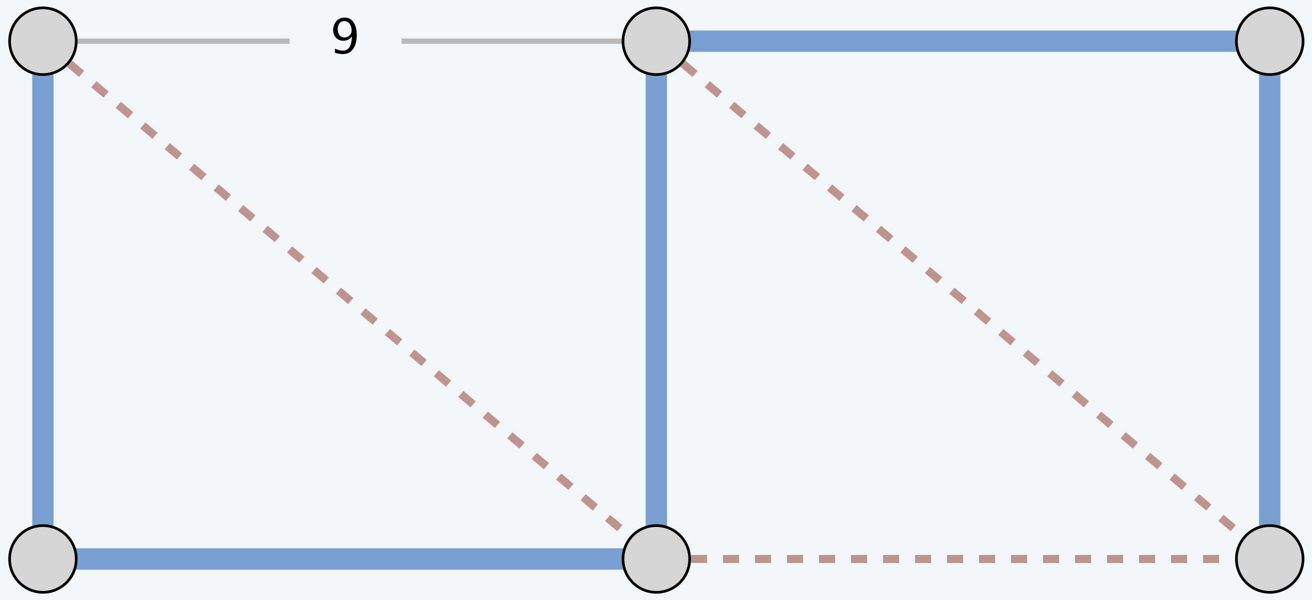

Kruskal's algorithm demo

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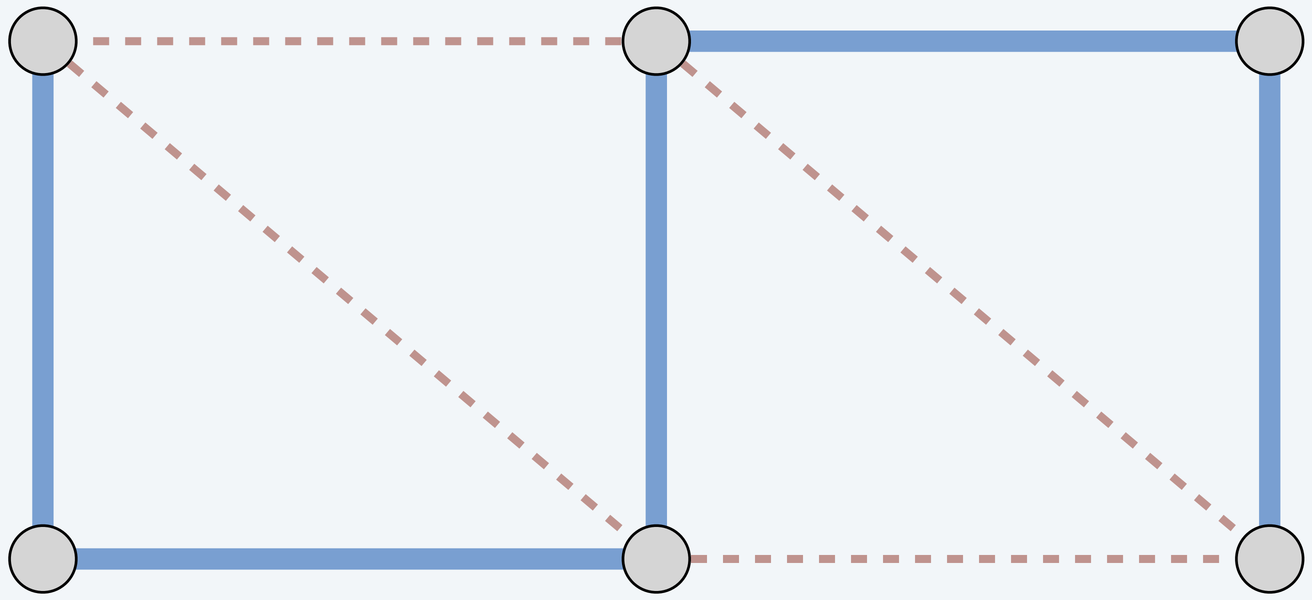

Kruskal's algorithm demo

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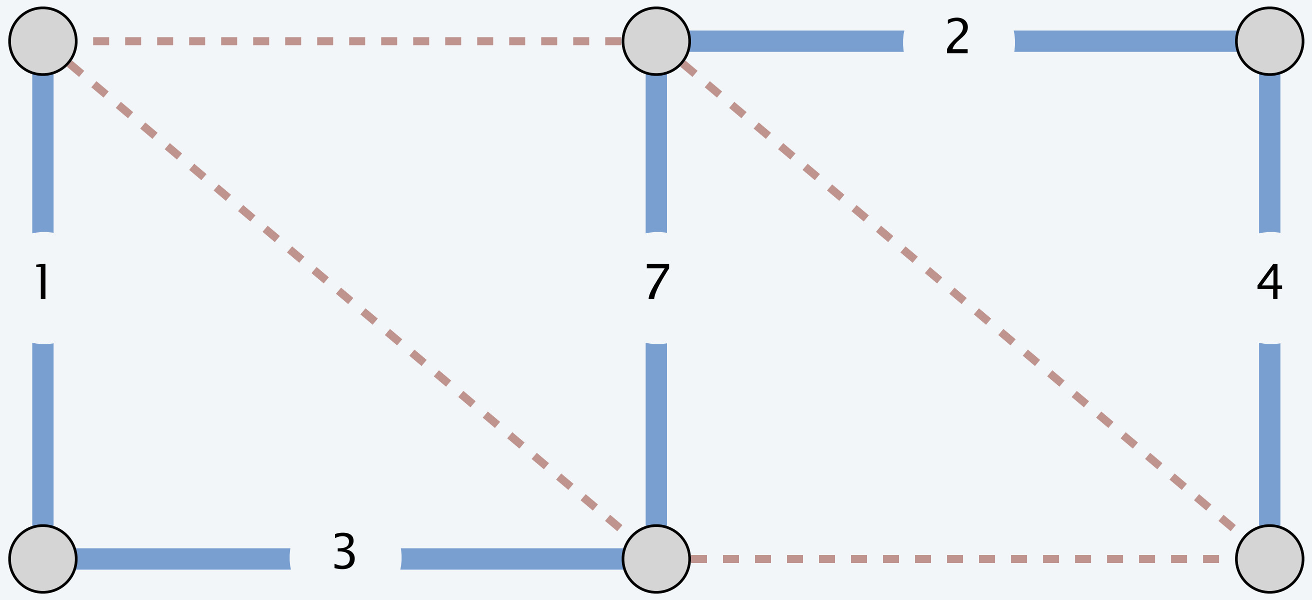
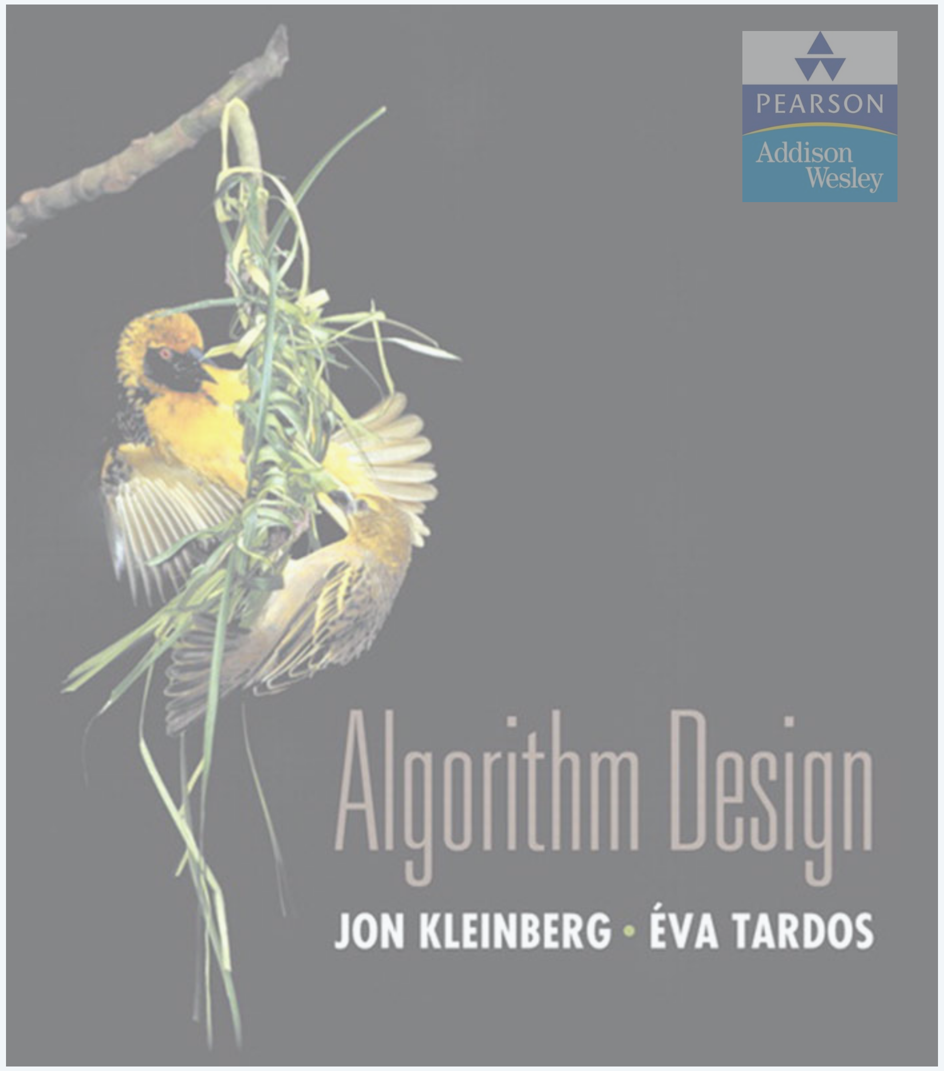




SECTION 4.5

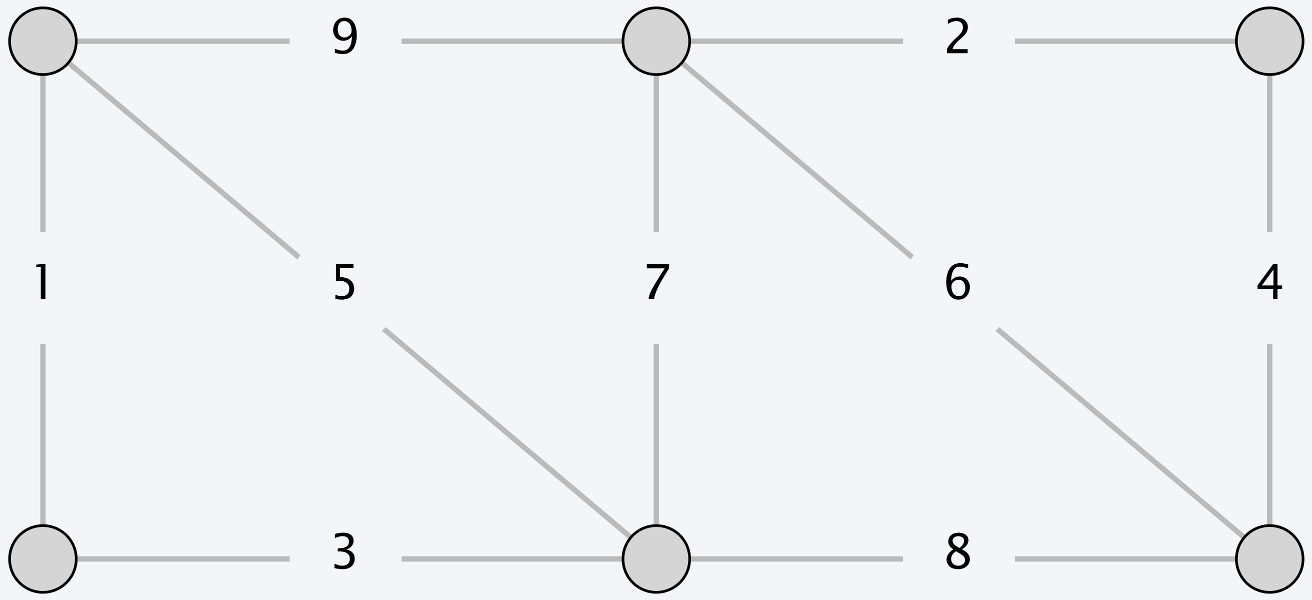
4. GREEDY ALGORITHMS II

- *red-rule blue-rule demo*
- *Prim's algorithm demo*
- *Kruskal's algorithm demo*
- *reverse-delete algorithm demo*
- *Boruvka's algorithm demo*

Reverse-delete algorithm demo

Start with all edges in T and consider them in descending order of weight:

- Delete edge from T unless it would disconnect T.



Reverse-delete algorithm

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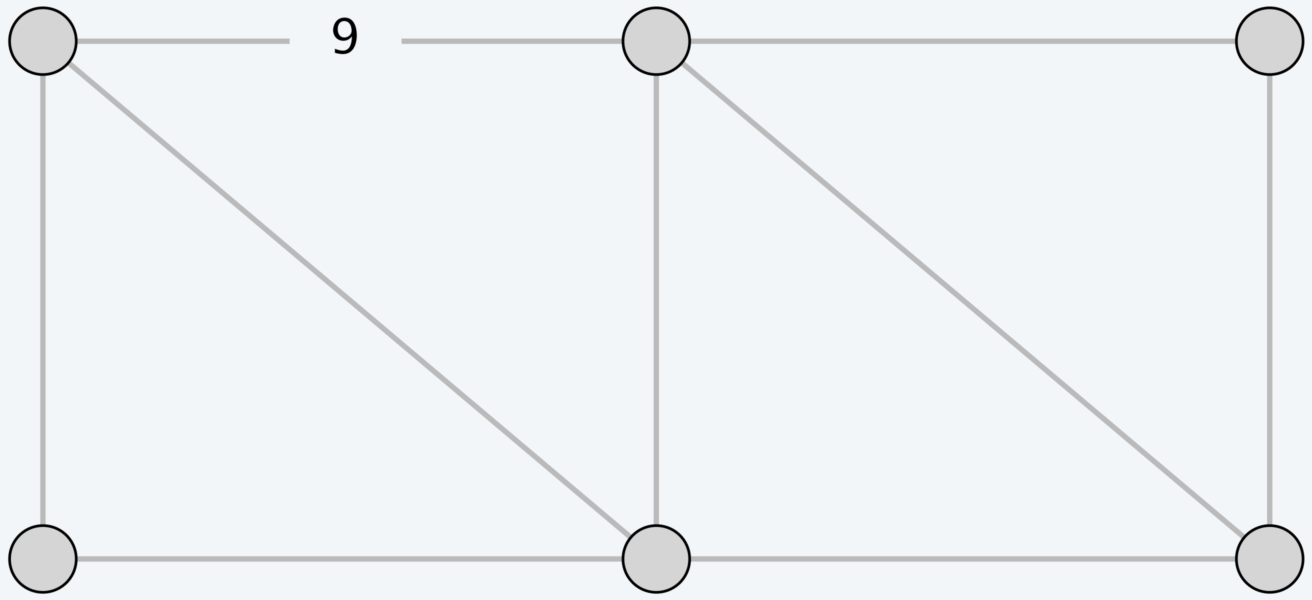

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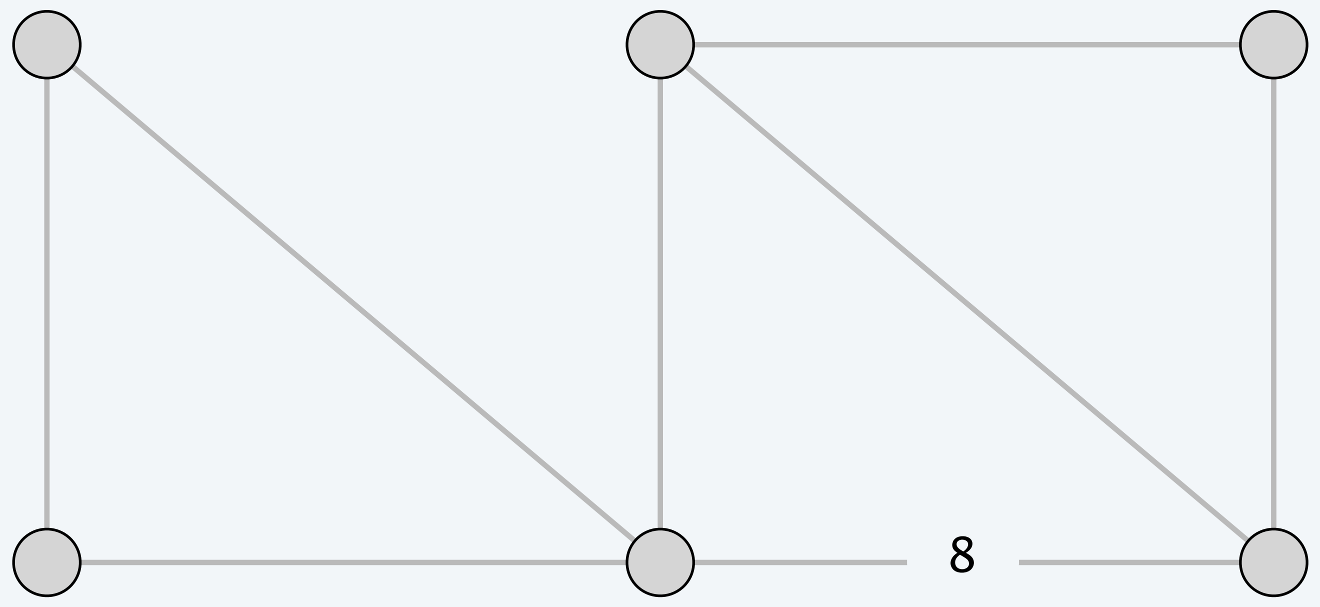

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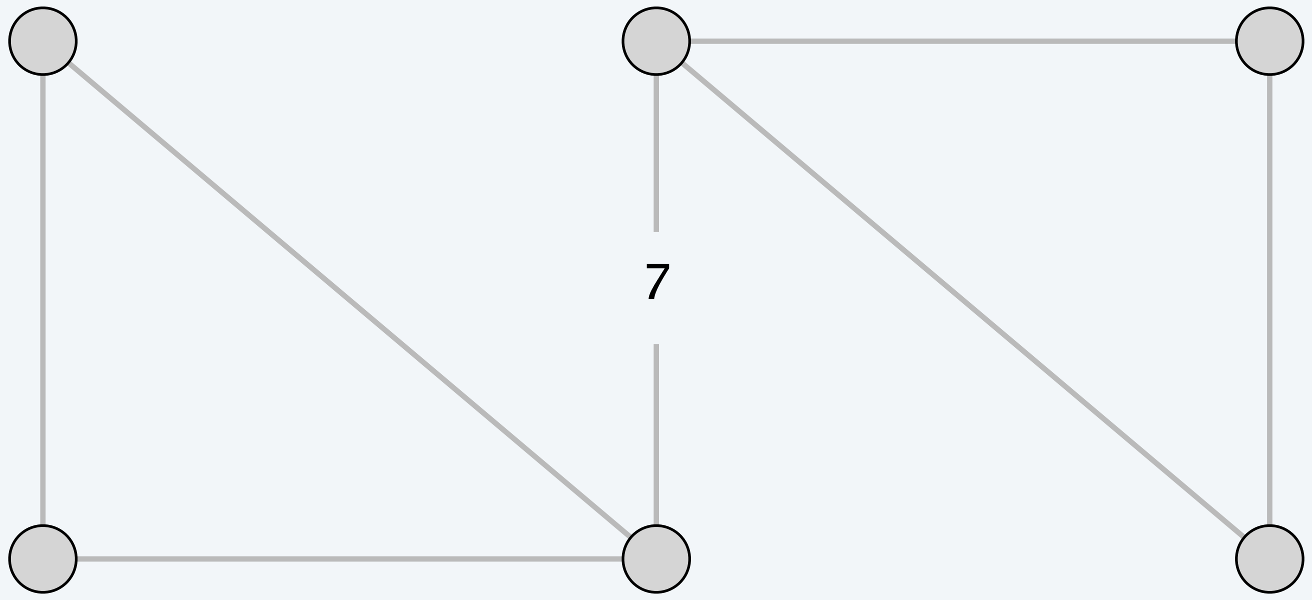

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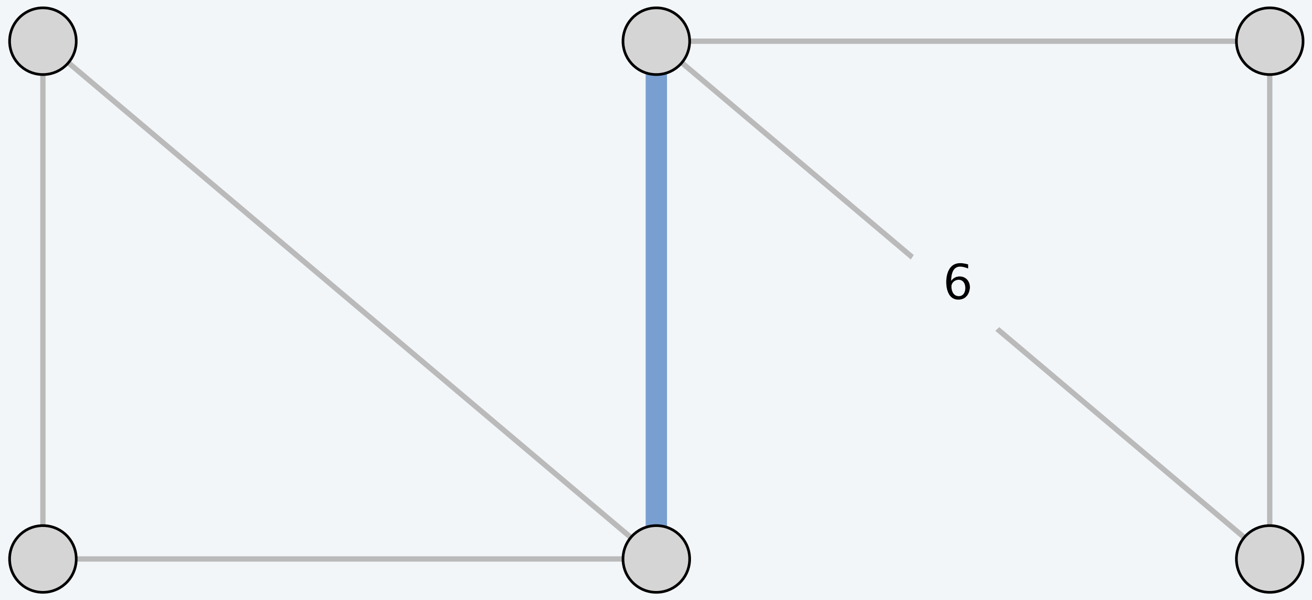

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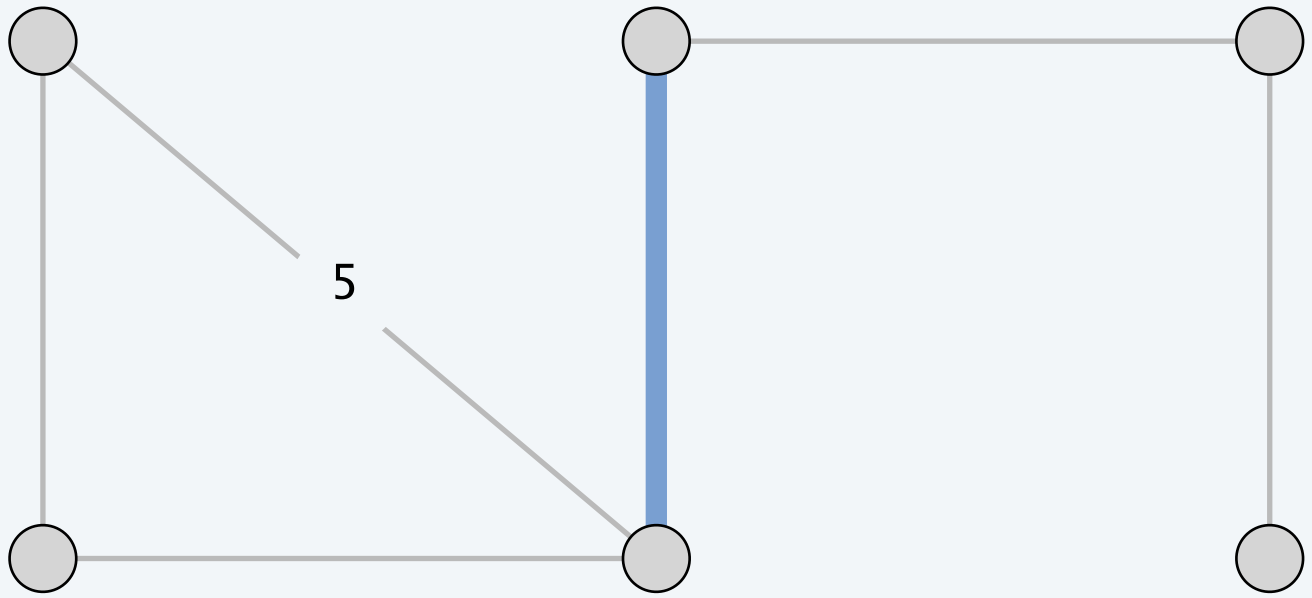

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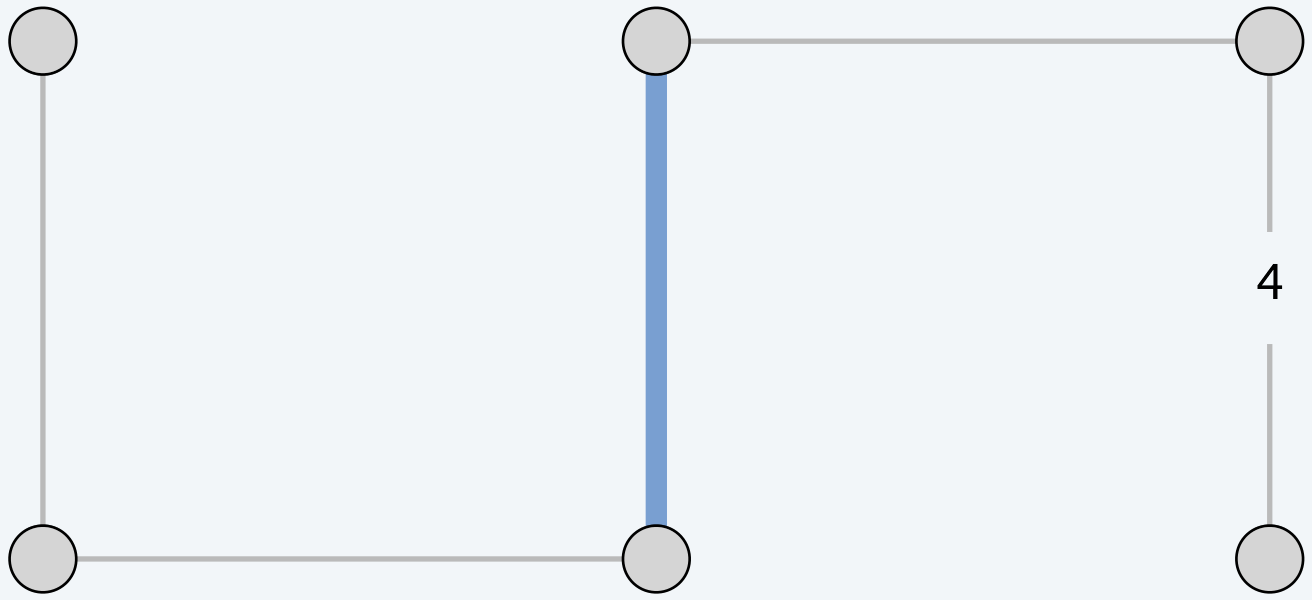

Reverse-delete algorithm

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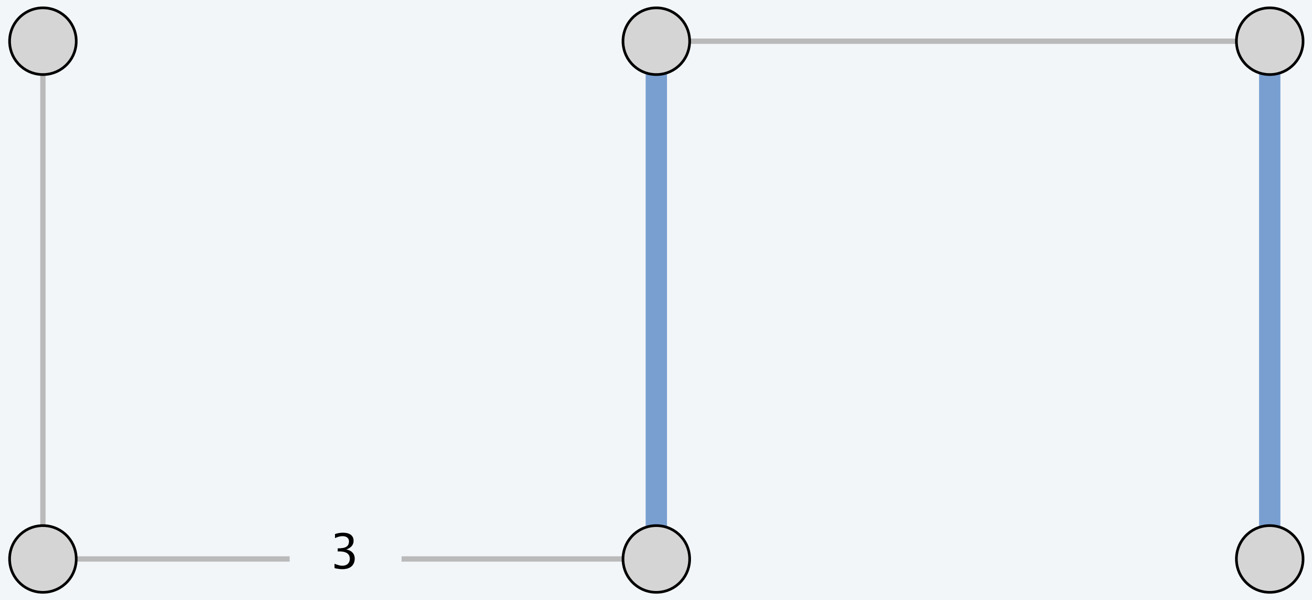

Reverse-delete algorithm

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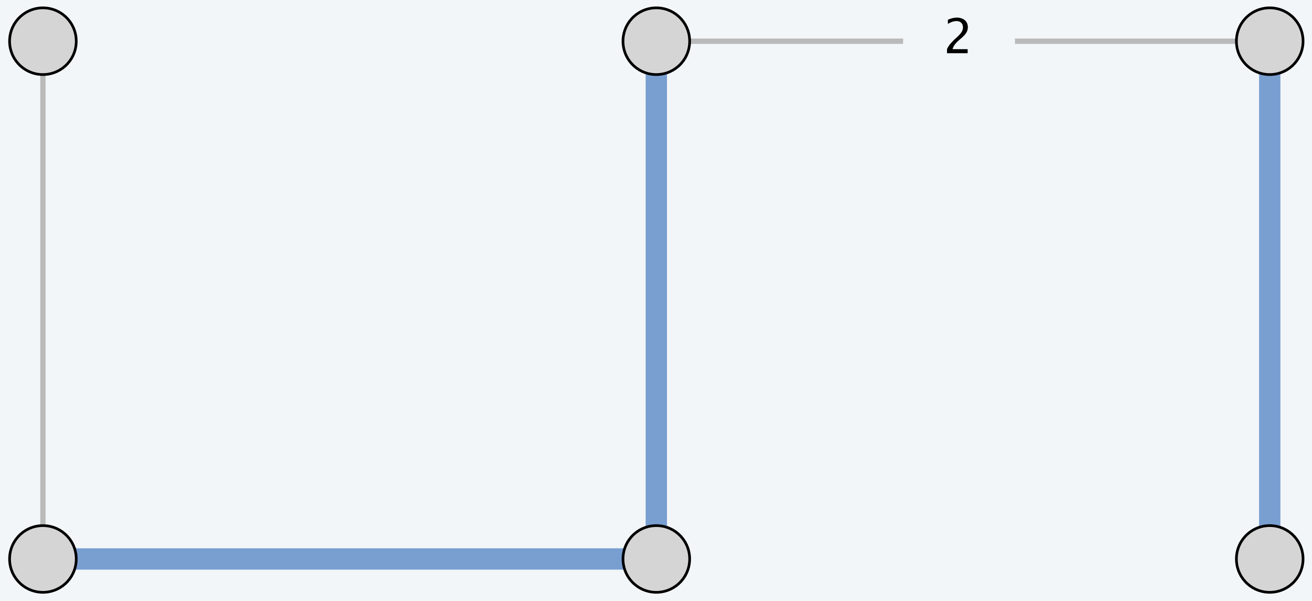

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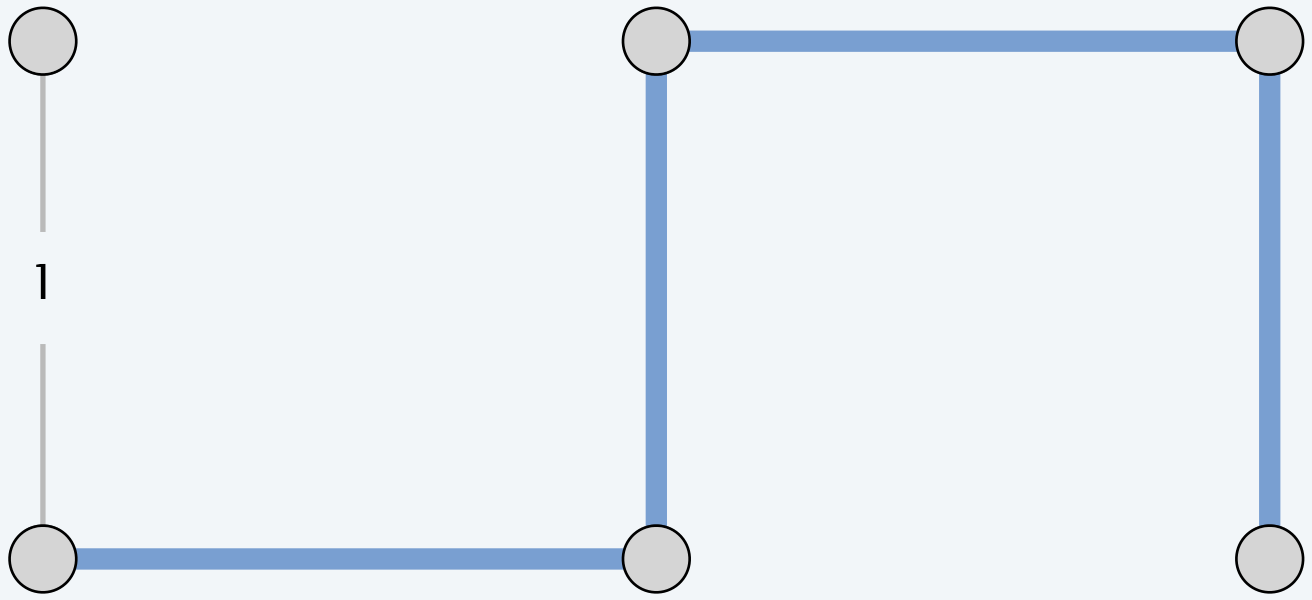

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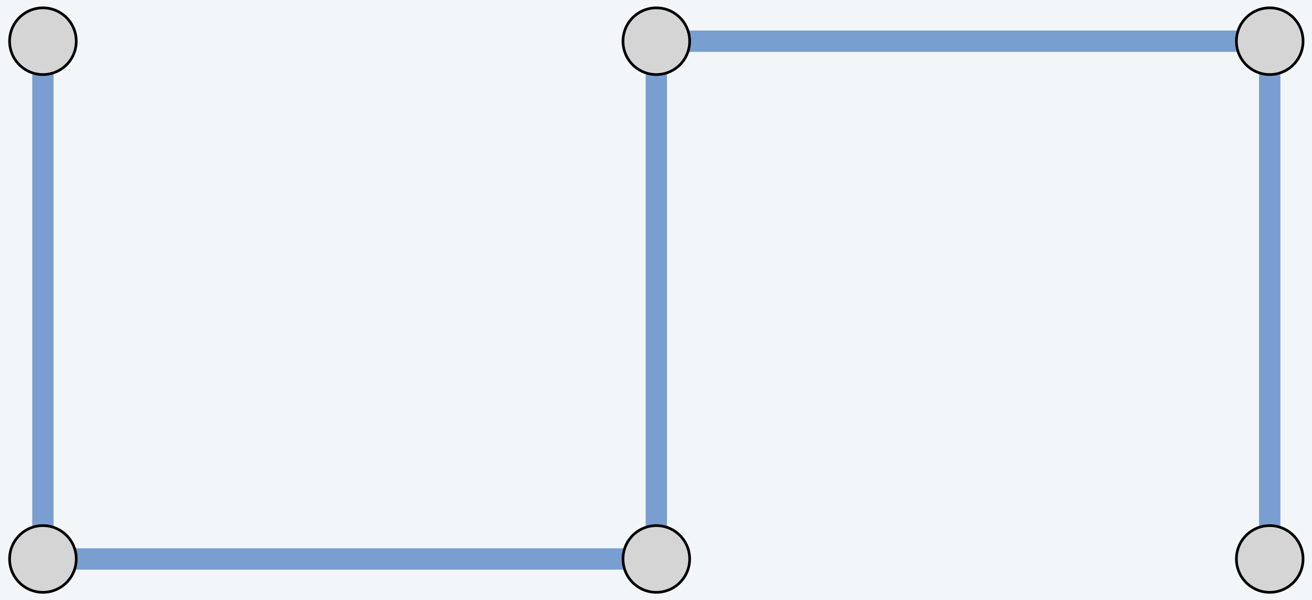

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