Red-rule blue-rule demo

Red rule. Let $C$ be a cycle with no red edges. Select an uncolored edge of $C$ of max weight and color it red.

Blue rule. Let $D$ be a cutset with no blue edges. Select an uncolored edge in $D$ of min weight and color it blue.

the input graph

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apply the red rule to the cycle

Red-rule blue-rule demo

current set of red and blue edges
Red-rule blue-rule demo

Red rule. Let $C$ be a cycle with no red edges. Select an uncolored edge of $C$ of max weight and color it red.

Current set of red and blue edges

Blue rule. Let $D$ be a cutset with no blue edges. Select an uncolored edge in $D$ of min weight and color it blue.

Apply the blue rule to the cutset
**Blue rule.** Let $D$ be a cutset with no blue edges. Select an uncolored edge in $D$ of min weight and color it blue.

- **apply the blue rule to the cutset**

![Diagram with blue edges applied to the cutset](image)

- **current set of red and blue edges**

![Diagram showing current set of red and blue edges](image)

**Red-rule blue-rule demo**

- **apply the red rule to the cycle**

![Diagram with red edges applied to the cycle](image)

- **current set of red and blue edges**

![Diagram showing current set of red and blue edges](image)
Blue rule. Let $D$ be a cutset with no blue edges. Select an uncolored edge in $D$ of min weight and color it blue.

apply the blue rule to the cutset

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current set of red and blue edges

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current set of red and blue edges
**Red-rule blue-rule demo**

**Blue rule.** Let \( D \) be a cutset with no blue edges. Select an uncolored edge in \( D \) of min weight and color it blue.

apply the blue rule to the cutset

![Diagram showing application of blue rule](image)

**Red-rule blue-rule demo**

**Blue rule.** Let \( D \) be a cutset with no blue edges. Select an uncolored edge in \( D \) of min weight and color it blue.

apply the red rule to the cycle

![Diagram showing application of red rule](image)
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Greedy algorithm. Upon termination, the blue edges form a MST.

A minimum spanning tree