4.3 Greedy MST Demo
Greedy MST algorithm demo

- Start with all edges colored gray.
- Find cut with no black crossing edges; color its min-weight edge black.
- Repeat until \( V - 1 \) edges are colored black.
Greedy MST algorithm demo

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MST edges
0–2
Greedy MST algorithm demo

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```
5-7  0.28
1-5  0.32
4-5  0.35
```

- **MST edges**
  - 0–2

![Diagram of a graph with edges colored and labeled with weights.](image-url)
Greedy MST algorithm demo

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![Graph with MST edges highlighted]

**MST edges**

0–2    5–7
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MST edges

0–2 5–7
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MST edges

0–2  5–7  6–2
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- Repeat until $V - 1$ edges are colored black.

MST edges

0-2  5-7  6-2

Crossing edges (sorted by weight)

in MST

0-7 0.16
2-3 0.17
2-7 0.34
4-5 0.35
1-2 0.36
4-7 0.37
3-6 0.52
Greedy MST algorithm demo

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MST edges:
- 0–2
- 5–7
- 6–2
- 0–7
Greedy MST algorithm demo

- Start with all edges colored gray.
- Find cut with no black crossing edges; color its min-weight edge black.
- Repeat until $V - 1$ edges are colored black.

MST edges

0–2  5–7  6–2  0–7

crossing edges (sorted by weight)

2–3  0.17
1–7  0.19
1–5  0.32
1–2  0.36
Greedy MST algorithm demo

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- Repeat until $V - 1$ edges are colored black.

MST edges

0–2  5–7  6–2  0–7  2–3
Greedy MST algorithm demo

- Start with all edges colored gray.
- Find cut with no black crossing edges; color its min-weight edge black.
- Repeat until \( V - 1 \) edges are colored black.

MST edges

0–2  5–7  6–2  0–7  2–3

crossing edges (sorted by weight)

in MST

1–7  0.19
1–3  0.29
1–5  0.32
4–5  0.35
1–2  0.36
4–7  0.37
0–4  0.38
6–4  0.93
Greedy MST algorithm demo

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- Find cut with no black crossing edges; color its min-weight edge black.
- Repeat until $V - 1$ edges are colored black.

MST edges

0–2  5–7  6–2  0–7  2–3  1–7
Greedy MST algorithm demo

- Start with all edges colored gray.
- Find cut with no black crossing edges; color its min-weight edge black.
- Repeat until $V - 1$ edges are colored black.

MST edges
0-2  5-7  6-2  0-7  2-3  1-7
Greedy MST algorithm demo

- Start with all edges colored gray.
- Find cut with no black crossing edges; color its min-weight edge black.
- Repeat until $V - 1$ edges are colored black.

MST edges

$0-2$  $5-7$  $6-2$  $0-7$  $2-3$  $1-7$  $4-5$