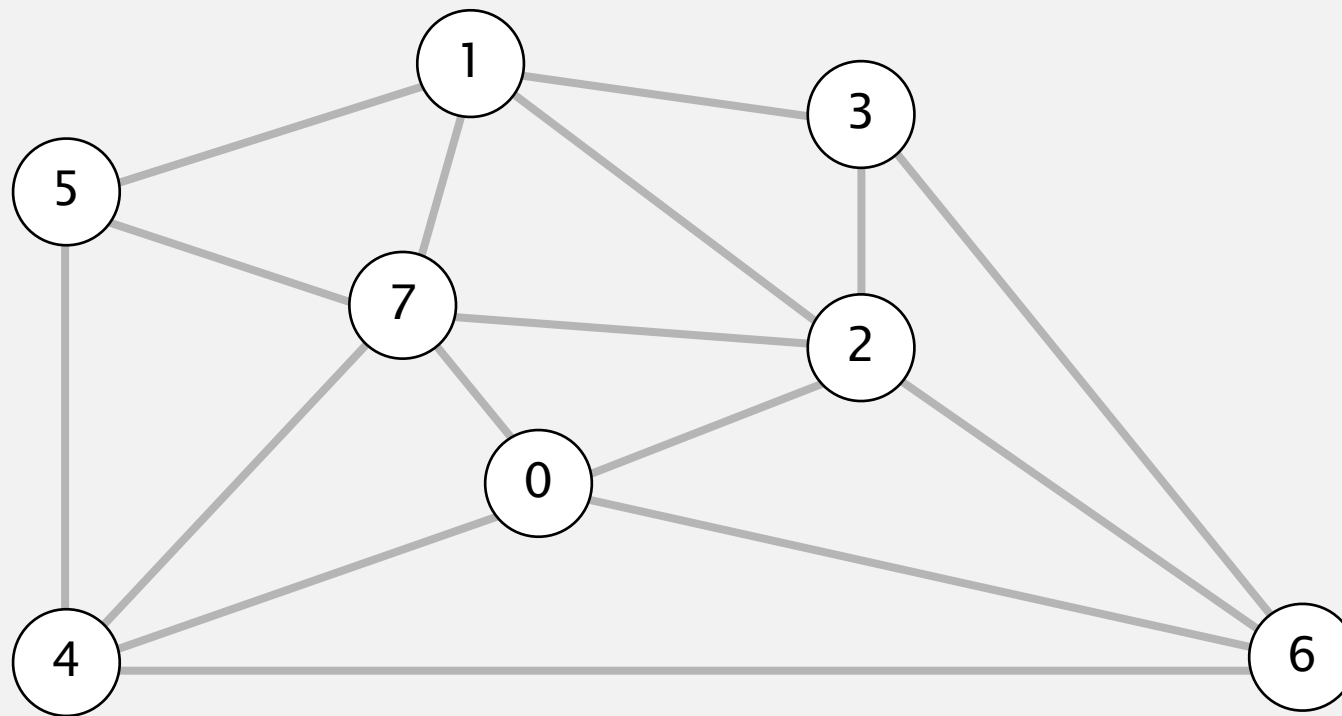


# GREEDY ALGORITHM DEMO

## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.

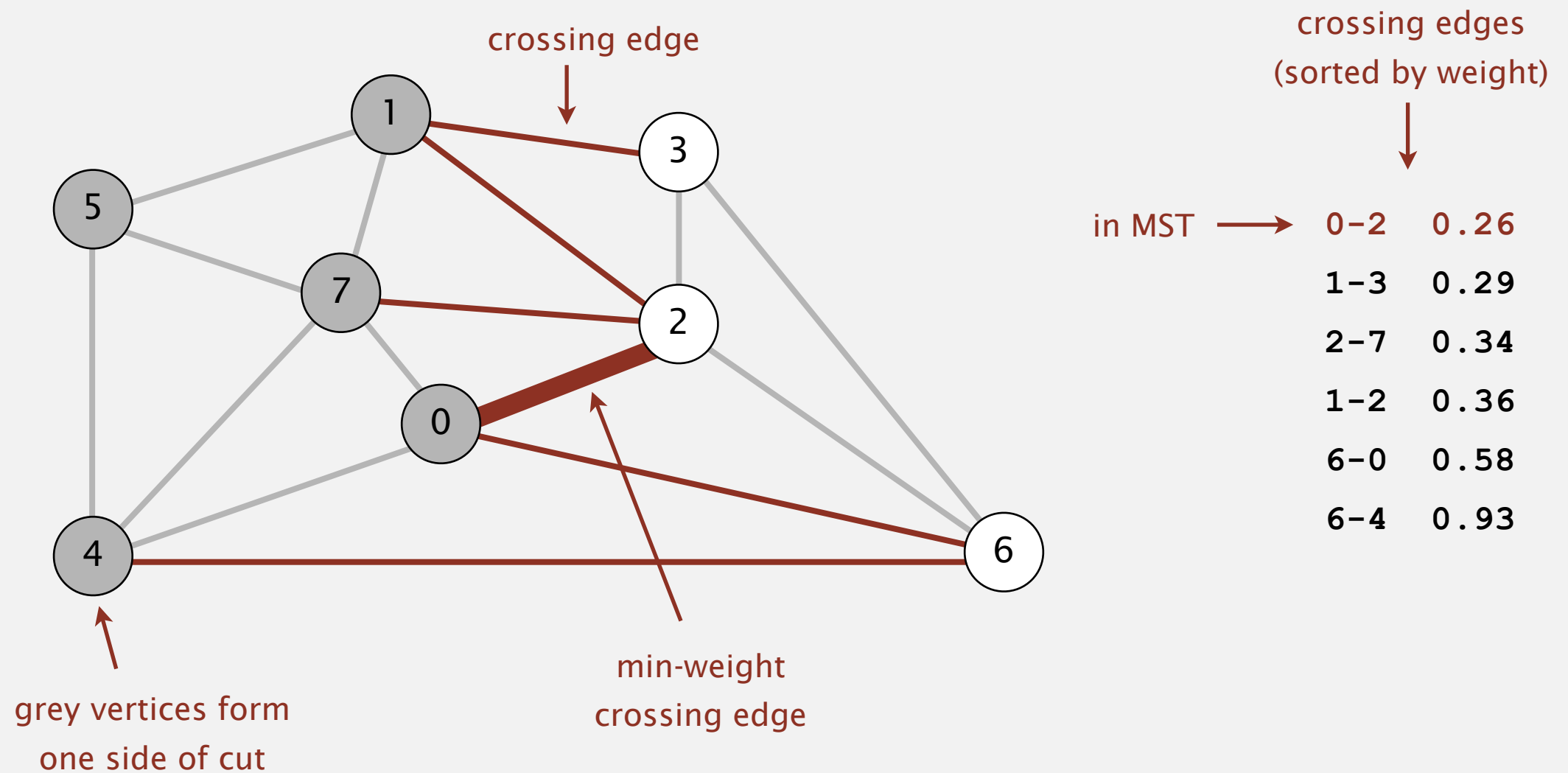


**an edge-weighted graph**

0-7	0.16
2-3	0.17
1-7	0.19
0-2	0.26
5-7	0.28
1-3	0.29
1-5	0.32
2-7	0.34
4-5	0.35
1-2	0.36
4-7	0.37
0-4	0.38
6-2	0.40
3-6	0.52
6-0	0.58
6-4	0.93

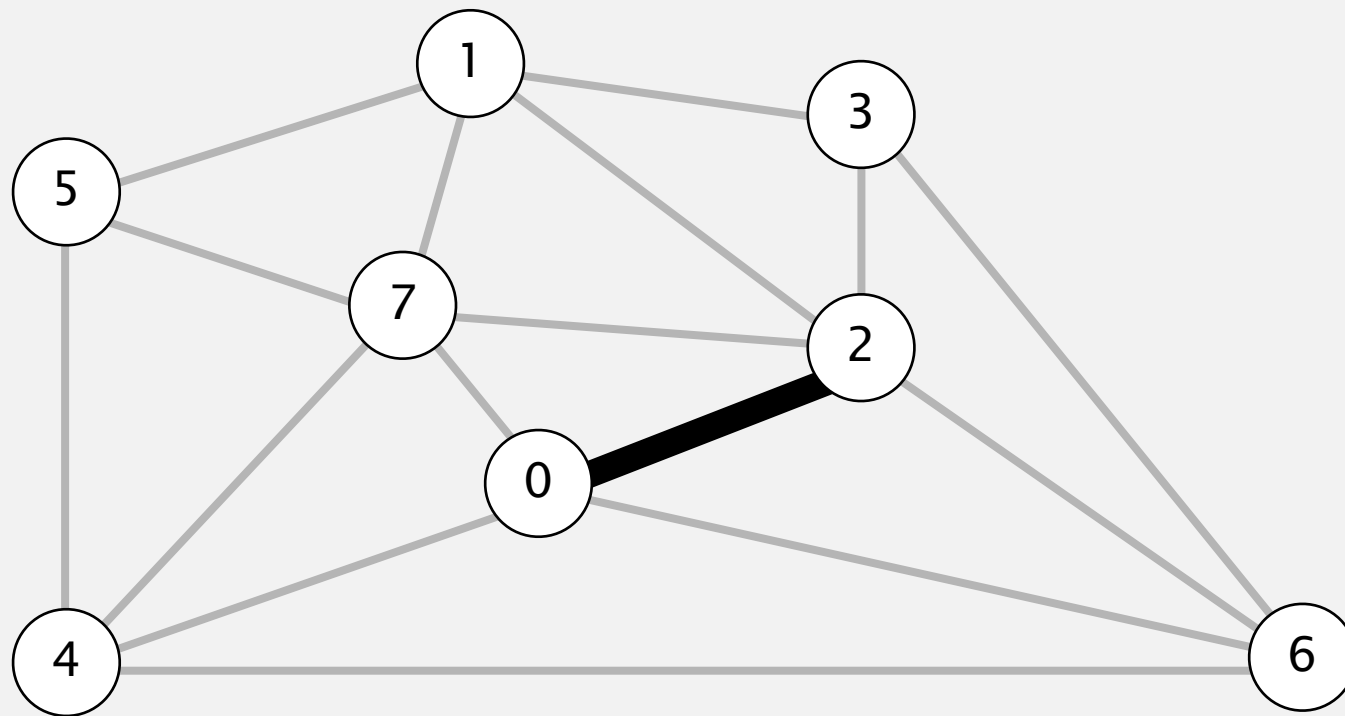
## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.



## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.

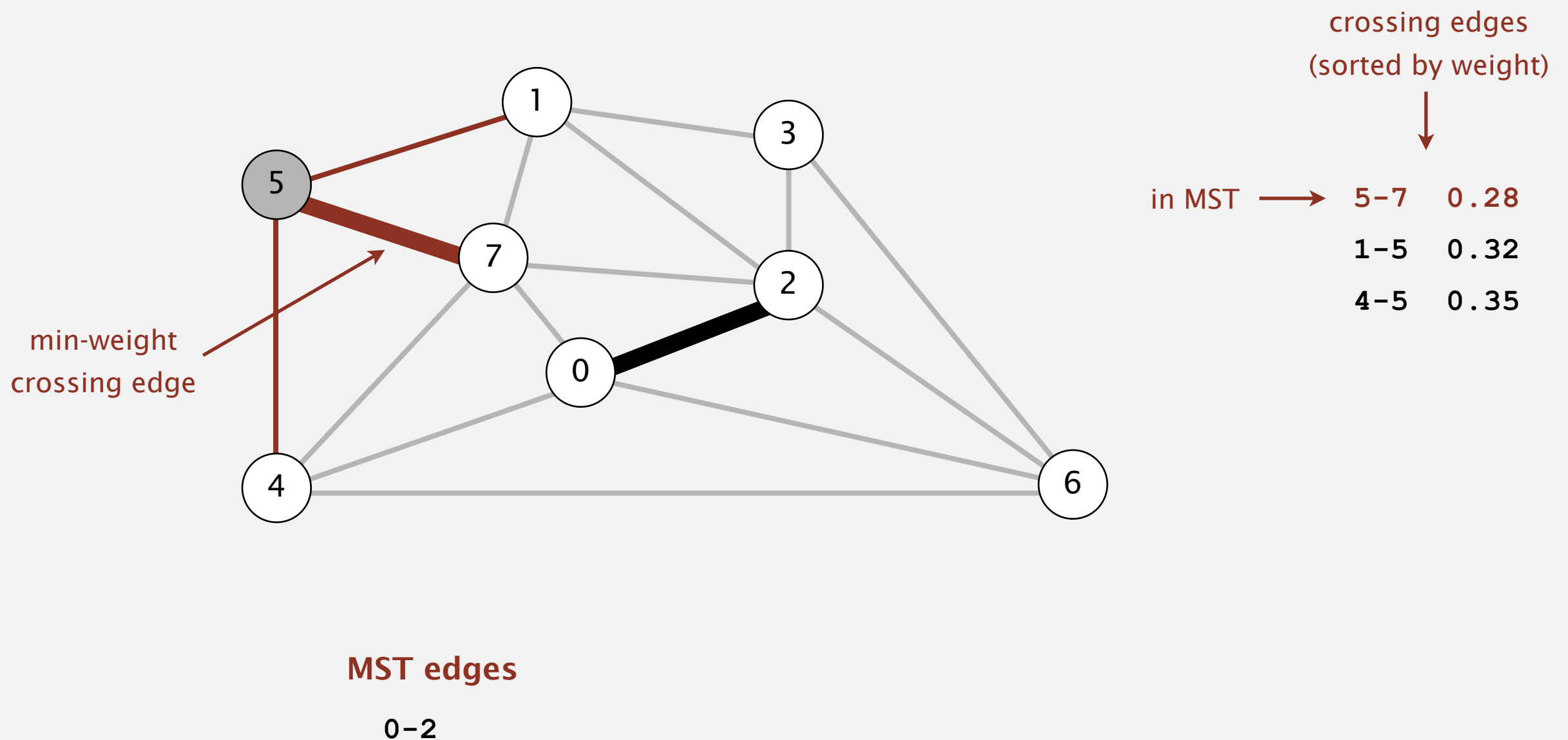


**MST edges**

0-2

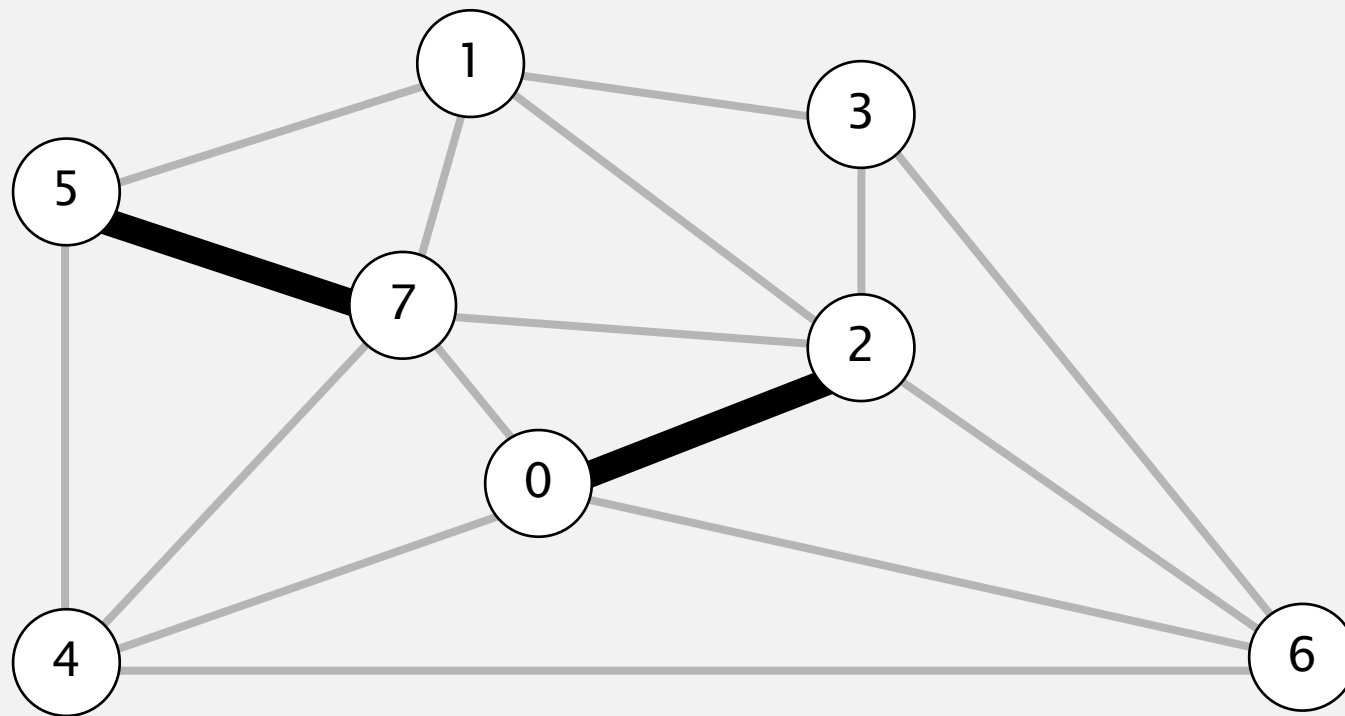
## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.



## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.

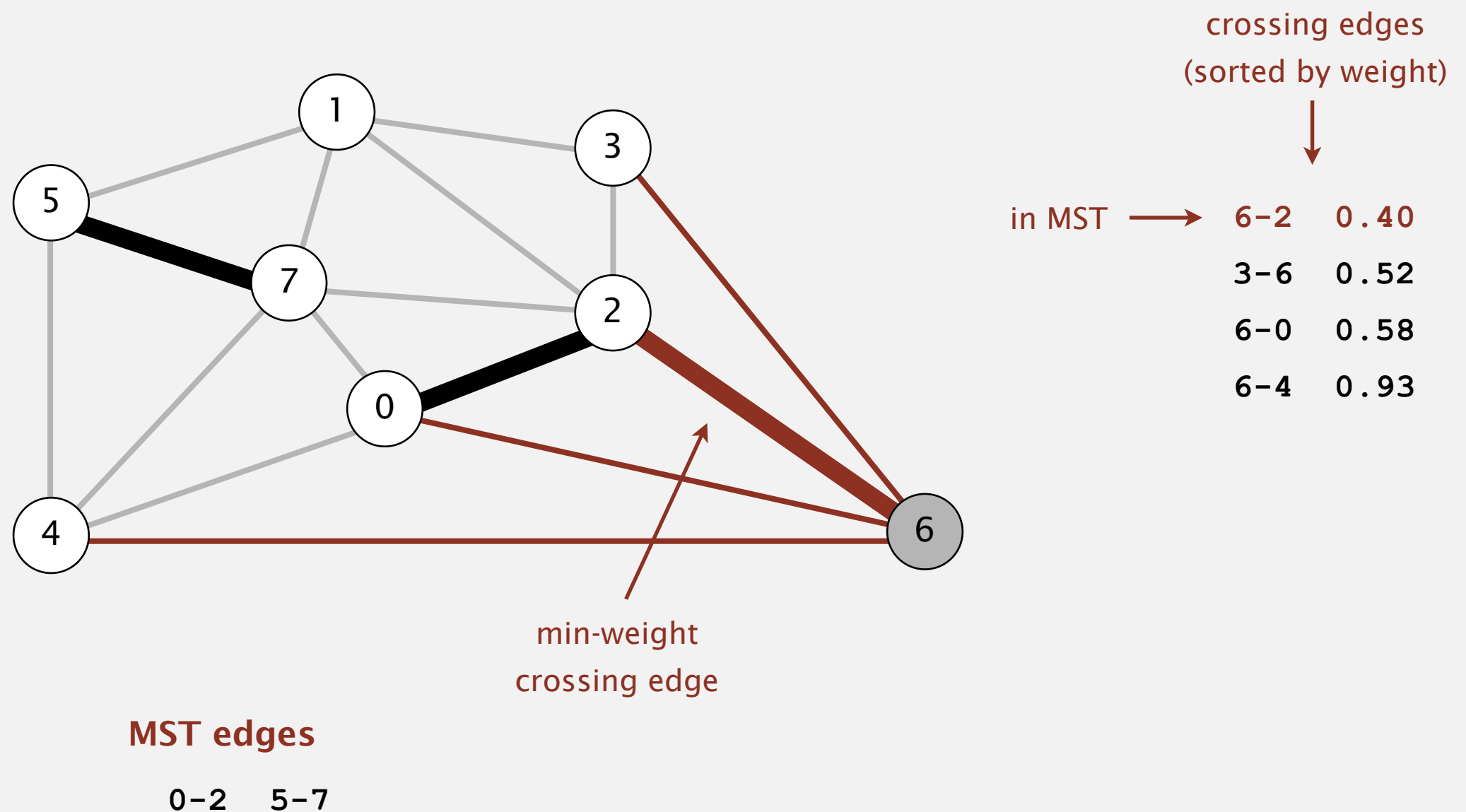


**MST edges**

0-2   5-7

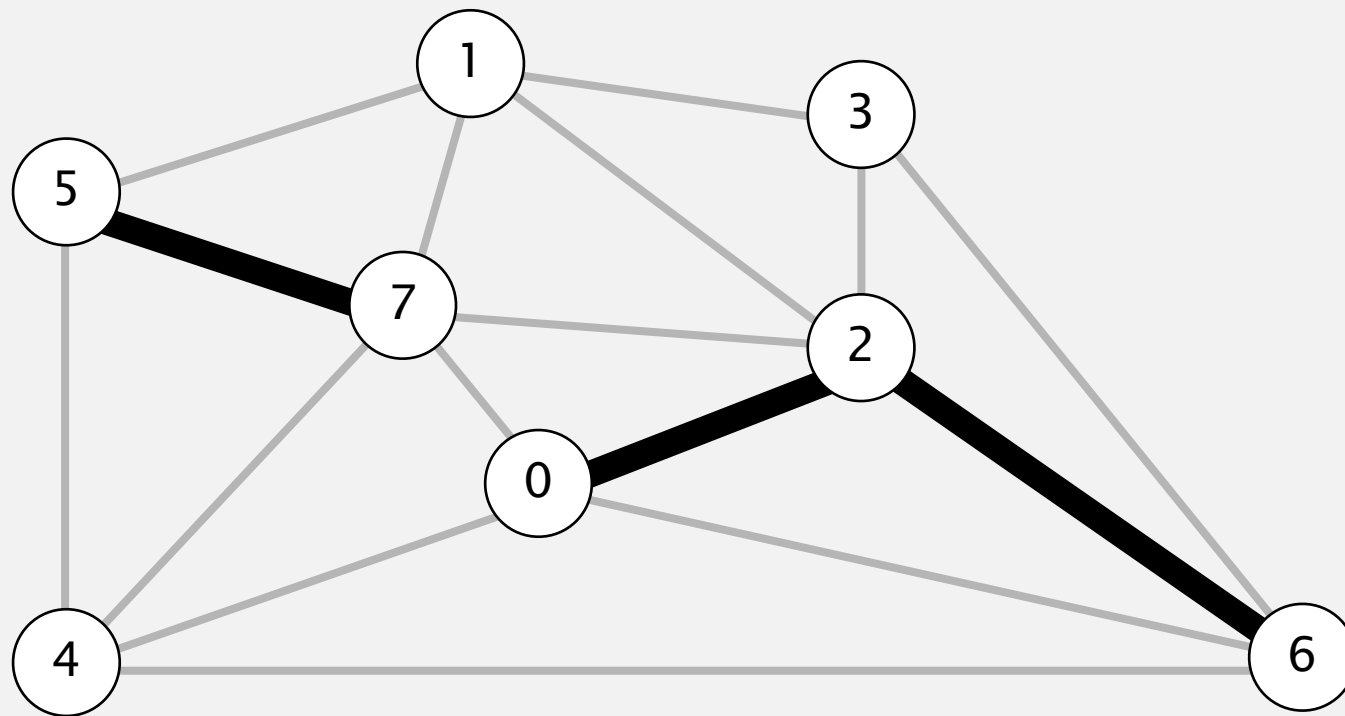
## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.



## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.



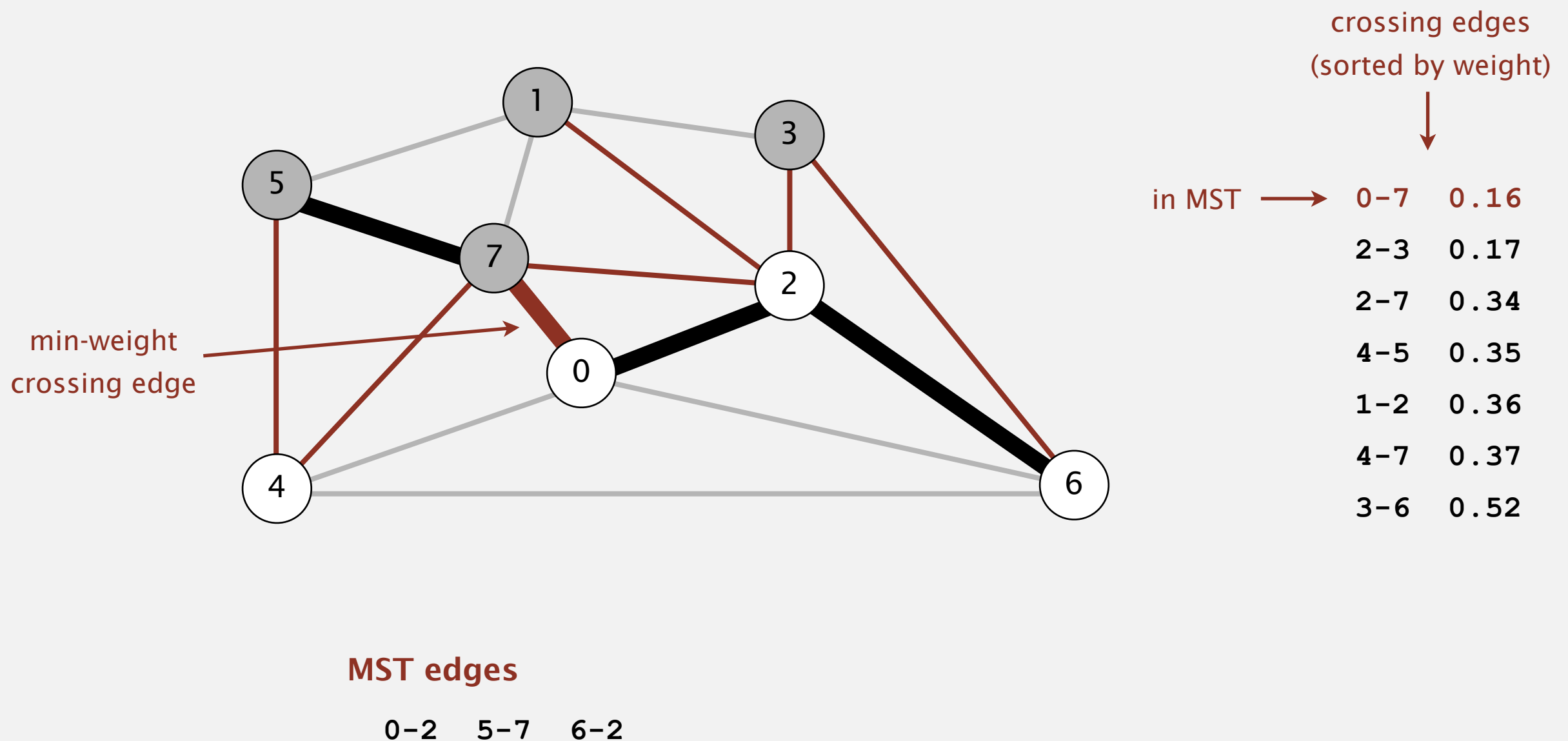
**MST edges**

0-2   5-7   6-2



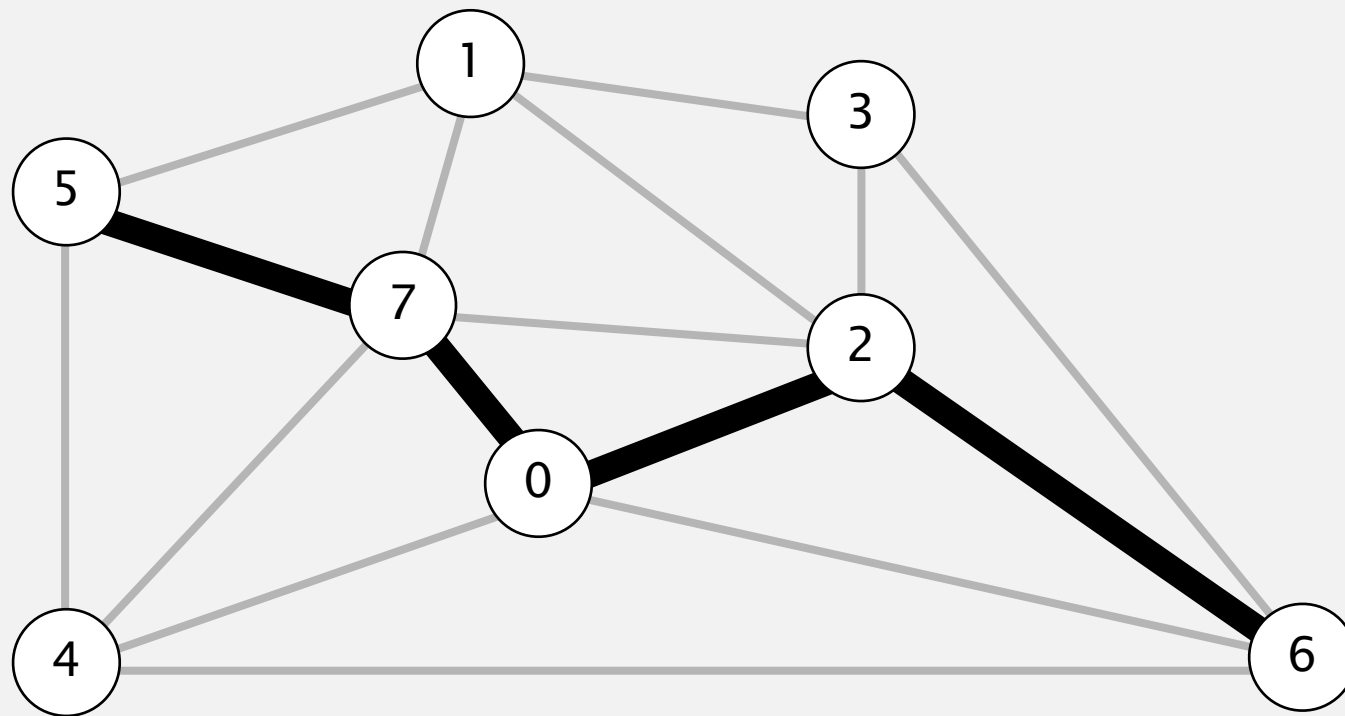
## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.



## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.

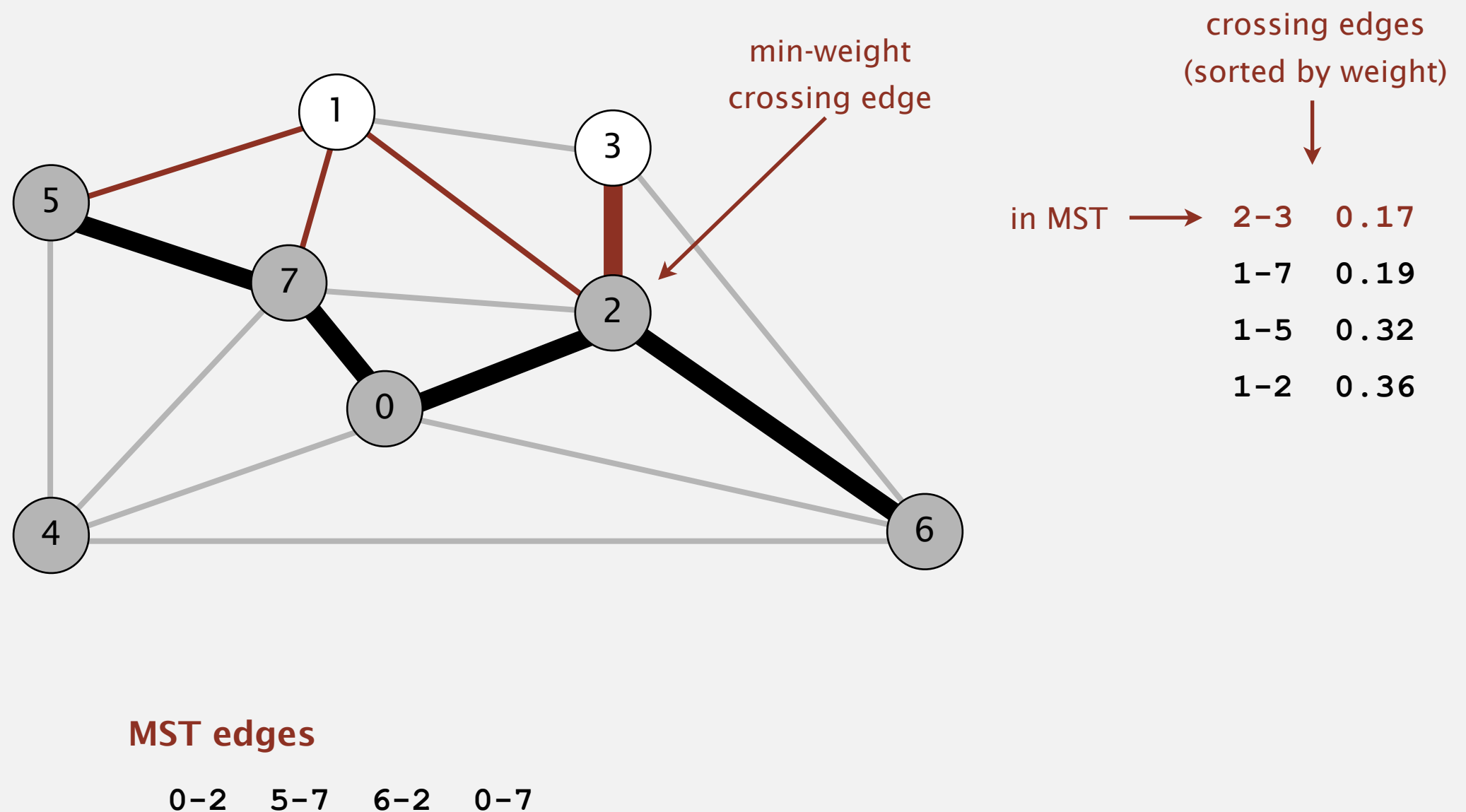


**MST edges**

0-2   5-7   6-2   0-7

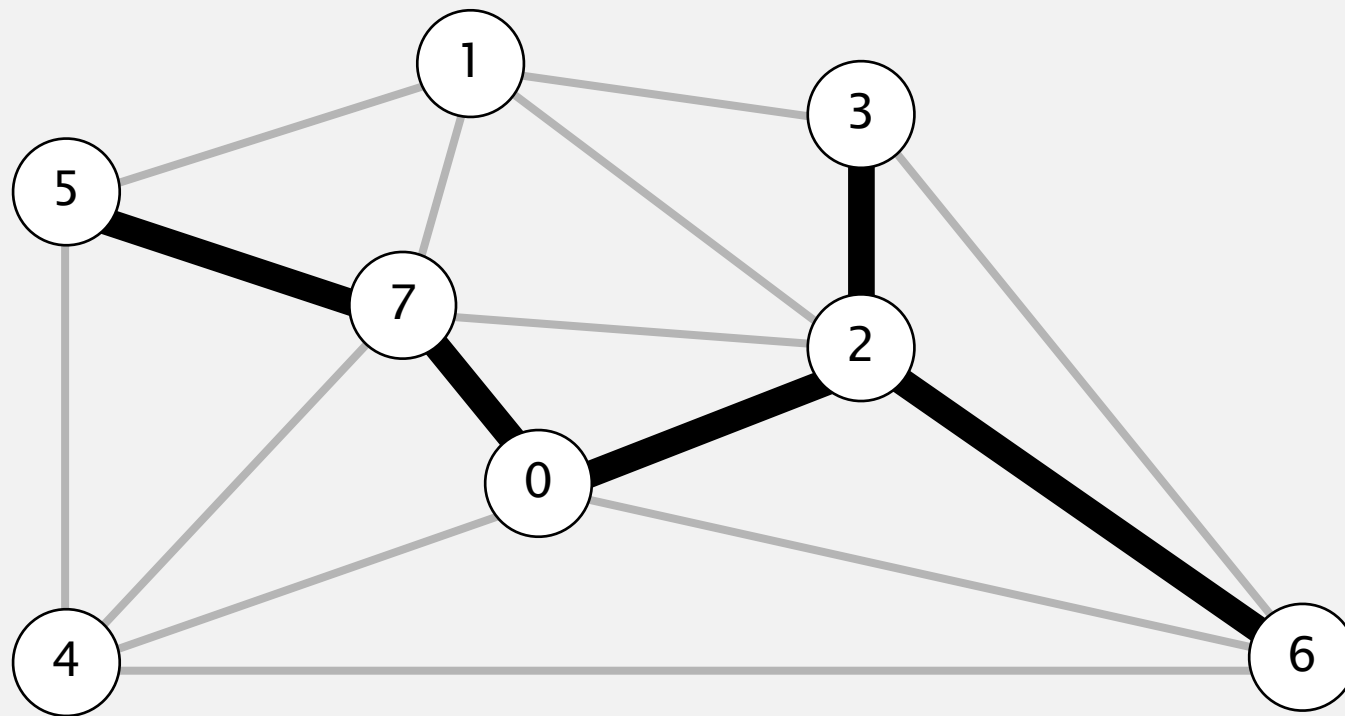
## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.



## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.

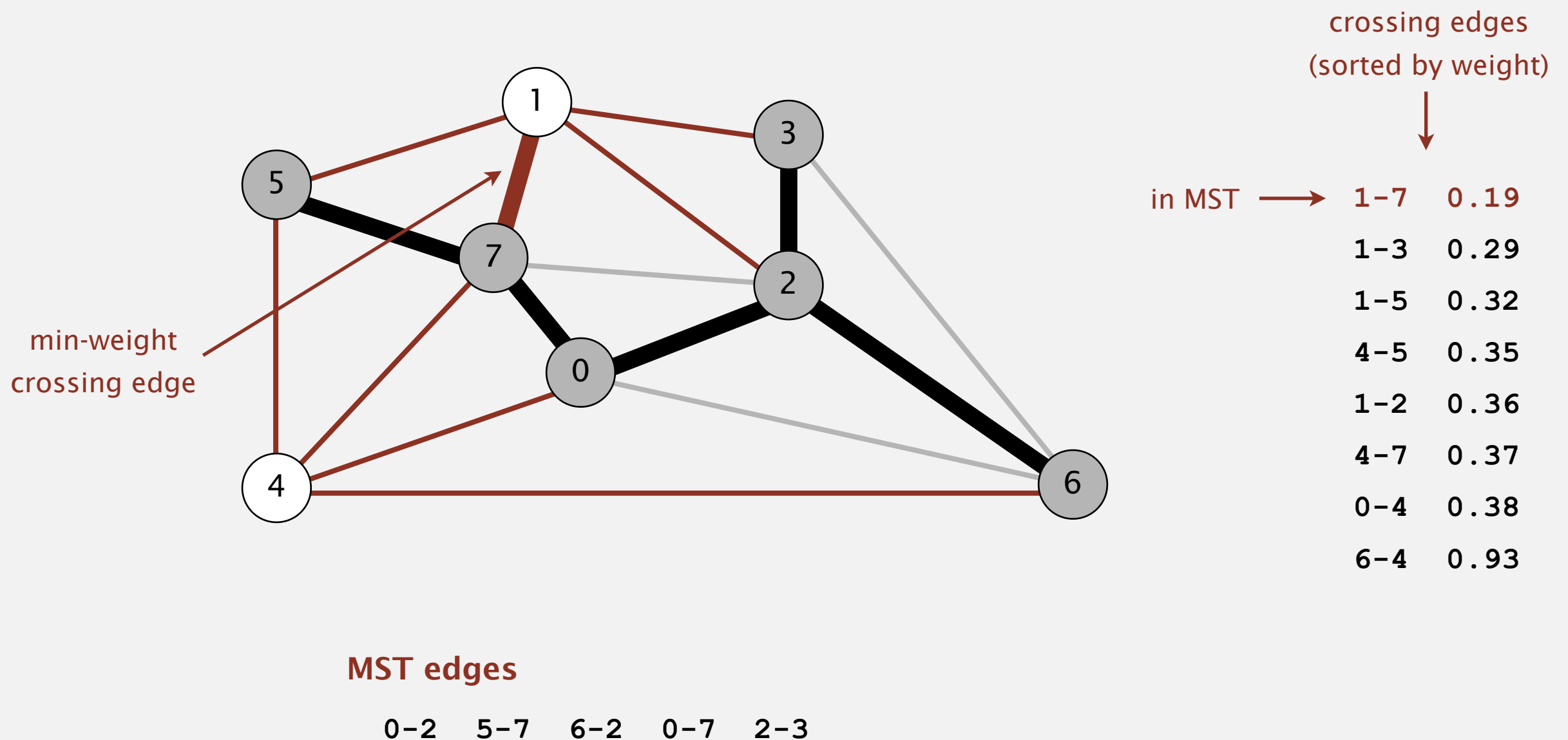


**MST edges**

0-2   5-7   6-2   0-7   2-3

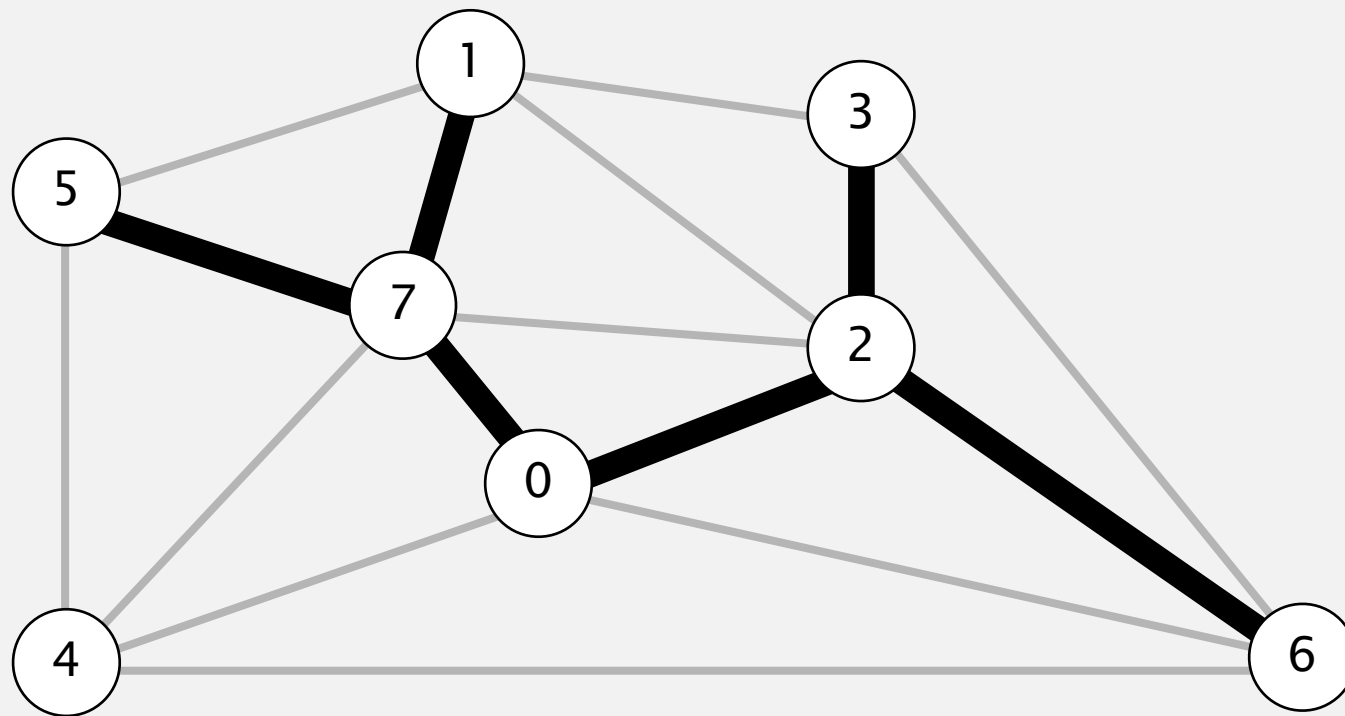
## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.



## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.

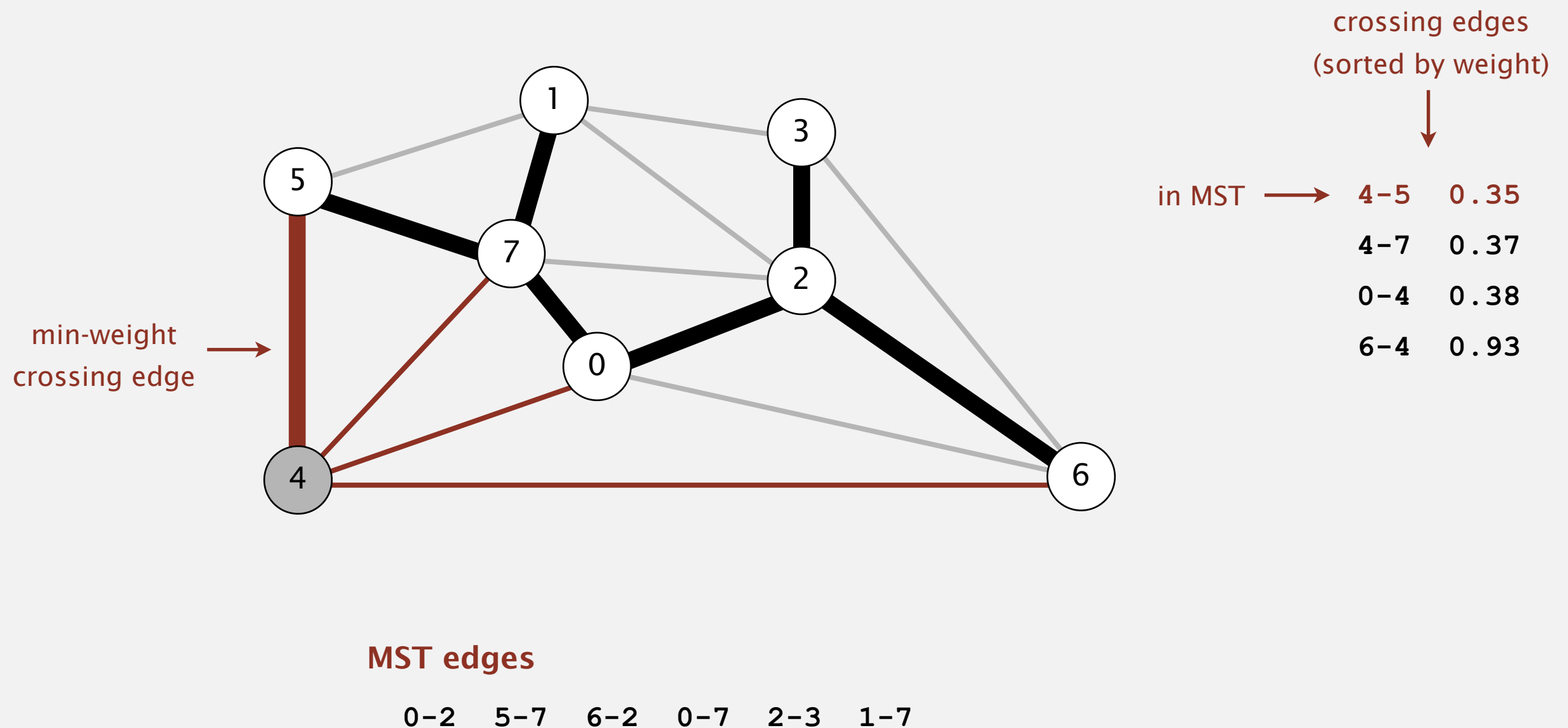


**MST edges**

0-2   5-7   6-2   0-7   2-3   1-7

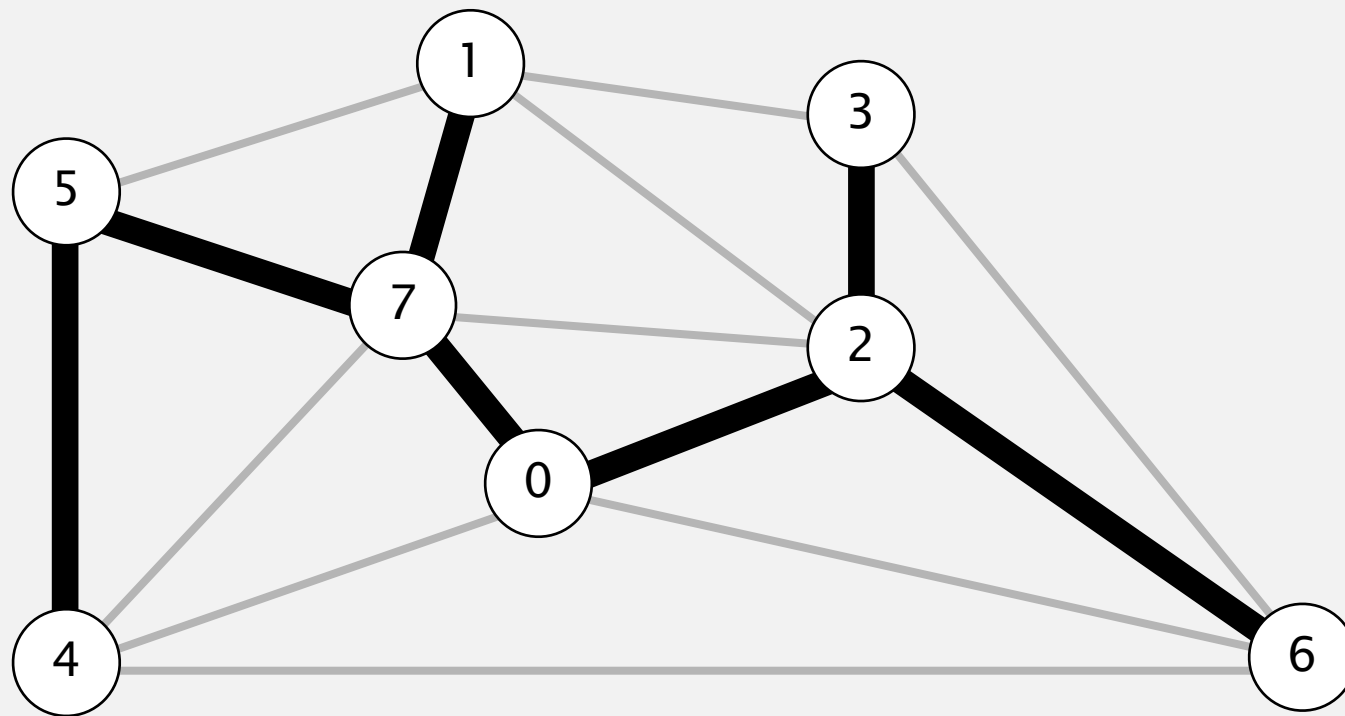
## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.



## Greedy MST algorithm

- Start with all edges colored gray.
- Find a cut with no black crossing edges, and color its min-weight edge black.
- Continue until  $V - 1$  edges are colored black.



**MST edges**

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