Practice Questions: Min-heaps

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What have you learnt so far?

3/3 points (ungraded)

1. A min-heap contains the following $(key, value)$ couples: $(A, 25)$, $(B, 37)$, $(C, 5)$ What is the next couple that will be removed?

- ○ $(A, 25)$
- ● $(C, 5)$
- ○ $(B, 37)$

✔

2. A min-heap contains the following $(key, value)$ couples: $(A, 55)$, $(B, 22)$, $(C, 32)$, $(D, 87)$ Consider each of the following items one by one, and select the correct ones:

- ☑ If performing add or replace with $(A, 32)$, the resulting status will be $(A, 32)$, $(B, 22)$, $(C, 32)$, $(D, 87)$
- ☐ If performing add or replace with $(B, 53)$, the resulting status will be $(A, 55)$, $(B, 53)$, $(C, 32)$, $(D, 87)$
- ☑ The next element to be removed is $(B, 22)$
- ☐ The next element to be removed is $(D, 87)$
- ☑ If performing add or replace with $(D, 86)$, the resulting status will be $(A, 55)$, $(B, 22)$, $(C, 32)$, $(D, 86)$

✔

3. The Dijkstra algorithm can be implemented...

- ● using a min-heap, by storing vertices as keys, and distances to the starting position as values.
- ○ using a min-heap, by storing edges as keys, and distances to the starting position as values.
- ○ using two min-heaps, one for the edges, one for the vertices.

✔

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Answers are displayed within the problem

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