Today's topic: Skew heaps Textbook §§ 23.1
Next class: Pairing heaps and applications. Textbook §§ 23.2.

1. List the members of your group below. Underline your name.

2. Use merge-based insertions and simplistic merging to insert the keys $1, 2, \ldots, 10$ into an initially empty heap-ordered tree. Then perform three merge-based deleteMin operations. Depict the state of the tree after each operation.

3. Repeat Question 2 using skew merging instead of simplistic merging.

4. Given a positive integer n, describe how to generate a sequence of $n + 1$ operations on an initially empty skew heap such that the last operation requires $\Omega(n)$ time, or explain why no such operations are possible. Provide illustrative worked examples.

5. Depict all distinct heap-ordered binary trees over the keys $1, 2, 3, 4$. You may abbreviate.

6. Provide a non-recursive variant of the recursive skew-merging algorithm of Section 23.1.3. Justify its correctness and quantify its time and space complexities, highlighting any differences from the recursive counterparts.