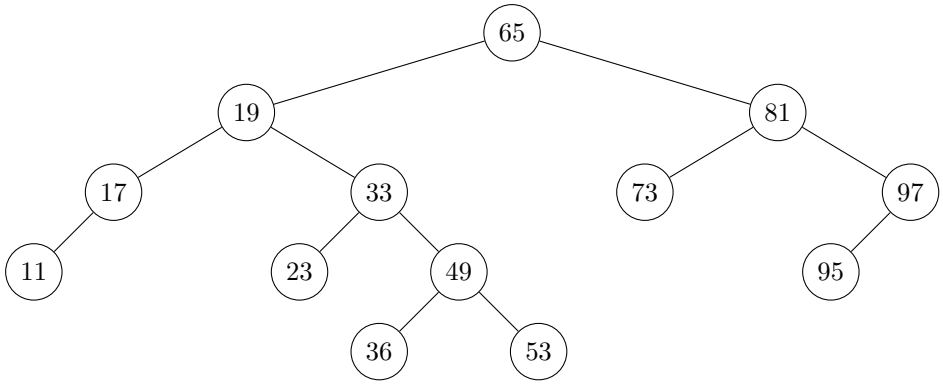
CS 240: Data Structures and Data Management **Winter 2025**

Tutorial 04: February 7

1. **Hoare's Partition**
   Assume that you call `QuickSort` on an array of size n where all elements are the same. Derive (with an explanation) an asymptotically tight bound on the run-time, presuming you use Hoare's partition-algorithm from class.

2. **AVL Operations**
   Consider the AVL Tree shown below and perform the following operations: insert 61, delete 73, delete 49.



3. **Skip List Operations**
   Insert the numbers 12, 11, 13, 10, 20 into an empty skip-list using the coin flips HHTHTHTTHHHT. Then delete the keys 13 and 20.