

Tutorial 05: June 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. **Bounded Digit Sorting** Given an array A of n positive integers such that the total number of decimal digits in all integers combined is ℓ , design an algorithm to sort A in $O(\ell)$ time.
3. **AVL operations**
Consider the AVL Tree shown below and perform the following operations: insert 61, delete 73, delete 49.

