COS226 Group Activity

1. *Quicksort.*

   Suppose that the result of the shuffle in Algorithm 2.5 is `T A T S T L T M T O T`. Show the result of the first call to `partition()` by giving the contents of the array after each exchange.

   ```
   T  A  T  S  T  L  T  M  T  O  T
   ```

2. *Binary heaps.*

Consider the following binary heap (i.e., the array-representation of a heap-ordered complete binary tree).

0	1	2	3	4	5	6	7	8	9	10	11	12	13
-	Z	W	Y	T	G	K	V	R	S	F	A	-	-

(a) *Delete* the maximum key. Give the resulting binary heap. *Circle* those values that changed.

0	1	2	3	4	5	6	7	8	9	10	11	12	13
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(b) *Insert* the key X into the *original* binary heap. Give the resulting binary heap. *Circle* those values that changed.

0	1	2	3	4	5	6	7	8	9	10	11	12	13
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