Given array of length, n
  largest number of digits, d
  and the range of digits, 0-9, $k=10$

Each sorting step will take $O(n+k)$
but this will be repeated d times
giving the expression $d(n+k)$

Since $k=10$, it can be ignored leaving
$$O(n \cdot d)$$

This program is also a stable sort.