

## C-10.22

This problem can be solved using a divide-and-conquer approach. First, we choose a random bolt and partition the remaining nuts around it. Then we take the nut that matches the chosen bolt and partition the remaining bolts around it. We can continue doing this until all the nuts and bolts are matched up. In essence, we are doing the randomized quicksort algorithm. Thus, we have an average running time of  $O(n \log n)$ .