CIT 594 – Homework 6 – Theory

Due – Apr 26, 2017 at 12.00pm

Part 1 – Theory (20 points) – Individual

Regardless of whether you're doing team or individual projects, the theory part must be done independently.

Please do the following problems:

1. Exercise R-17.13 from Big Java (5 points)
2. Exercise R-17.16 from Big Java (5 points)
3. Exercise R-12.5 from Big Java (5 points)
4. AmeriDelUnited Airlines wants to give upgrade vouchers to their top log n frequent flyers, based on the number of miles accumulated, where n is the total number of frequent flyers. Their current algorithm sorts the flyers by the number of miles flown and then scans the sorted list to pick the top log n flyers. This algorithm runs in O(n log n) time. Is it possible to do this in O(n) time? If yes, explain how. If not, explain why not. (Note: You cannot use any forms of counting sort, radix sort, etc.) (5 points)

Submission Instructions

Please submit a single file (.doc, or .txt, or .pdf) via canvas.