University of Waterloo
CS240 - Winter 2021
Assignment 5 Post Mortem

Problem 1
• Q1a, many students did not write using the AVL tree.
• Q1a, some students used the priority search tree but did not write the correct worst-case runtime.
• Q1a, missing justification of the runtime complexity or space requirement.

Problem 2
• Some got $O(\log n)$ using binary search.
• Incorrect recurrence relationship, resulting in an incorrect final bound.
• Students describe the correct algorithm but fail to analyze it correctly.

Problem 3
• Q3b), incorrect 4th or 5th step.

Problem 4
• Q4a) b), incorrect algorithm / runtime complexity.
• Q4b), some people did a "brute force search" (i.e. going up and down the list) after one search, but the counter example would be searching for a in aaaaaa.
• Q4b), some students return m when $A[m] = P$.

Problem 5
• Q5a), many students came up with a totally incorrect Huffman encoding.
• Q5a), some students did not write the coded text.
• Q5b), many has no idea how to reconstruct the decoding tree.
• Q5b), some students forget that for Huffman encoding, the depth is not $\log(n)$.
• Q5b), students loop through the list as is, not using a max heap.
• Q5b), many students did not write the priority and break tie rule.