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.