

University of Waterloo
CS240E, Winter 2023
Assignment 4 Post-Mortem

Question 1 [1+2+2+5=10 marks]

- Q1b: many solutions did not include a proof as to why their expression for h was correct.

Question 2 [2+4+5 = 11 marks]

- Q2c: most solutions directly handled all the string bits different case rather than differ by one bit case. Although this approach is slightly harder, it is perfectly correct.
- Q2d: most solutions did not consider the auxiliary space.

Question 3 [1+2+9+5+4=21 marks]

- Q3b: most solutions missed the base case
- Q3b: many did not handle the zig-zig case properly
- Q3b: many made errors in working out the constants
- Q3b: several solutions gave a bound that is too small, to which there are counter-examples
- Q3d: many missed the initial potential of the tree.

Question 4 [3 marks]

- many solutions forgot the case when k is out of range of the array
- some solutions were not about Algorithm 6.3

Question 5 [8 marks]

- some solutions made errors in using results from the notes