School of Computer Science
University of Guelph

CIS*3490 The Analysis and Design of Algorithms

Winter 2021
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Assignment 5 Guide (1)

- Q1.1
  Please see slides 27 – 29 in "06 Transform and Conquer" for constructing an AVL tree from a list. The details of rotations can be found in slides 24 – 26.

- Q1.2
  Please see slides 43 – 45 in "06 Transform and Conquer". Slide 43 explains heap construction, and slides 44 – 45 describe heap sorting in array representation.

- Q2.1
  Please see slides 25 – 31 in "10 Iterative Improvement" for how to find augmenting paths. For each augmenting path you find, draw the network in the format of the right network on slide 27.

- Q2.2
  Please see slides 40 – 42 in "10 Iterative Improvement" for how to find a stable marriage matching.

- Q3.1, Q3.2
  Please read and listen to "11 Limitations of Algorithm Power". Keep in mind that up to today not a polynomial algorithm has been found to solve an NP complete problem.