University of Waterloo
CS240R Fall 2017
Tutorial 11

Monday, December 4

B-Trees

a) Insert the following keys, in the order given, into an initially empty (2, 3)-tree:

$$34, 4, 8, 5, 40, 11, 6, 12, 16, 21, 7, 9.$$

Show the tree after every insertion.

b) From the tree constructed in part (a), delete the keys in this order:

$$5, 6, 4, 21, 9, 8, 40, 11, 7, 16, 34, 12.$$

Show the tree after every removal.

c) Draw any B-tree of order 6 that contains all the integers from 1 to 100. For simplicity, use the notation $[a - b]$ to denote a node with keys from a to b, and feel free to design your own notations for repetitive structures.