

11.2 Applications of Trees

11.2 pg. 769 # 1

Build a binary search tree for the words *banana*, *peach*, *apple*, *pear*, *coconut*, *mango*, and *papaya* using alphabetical order.

11.2 pg. 769 # 7

How many weighings of a balance scale are needed to find a counterfeit coin among four coins if the counterfeit coin may be either heavier or lighter than the others?

11.2 pg. 769 # 11

Find the least number of comparisons needed to sort four elements and devise an algorithm that sorts these elements using this number of comparisons.

11.2 pg. 770 # 23

Use Huffman coding to encode these symbols with given frequencies: $a : 0.20$, $b : 0.10$, $c : 0.15$, $d : 0.25$, $e : 0.30$. What is the average number of bits required to encode a character?