

CSE 373: Section 4

AVL and Hashtables

October 19th

1 AVL insertions

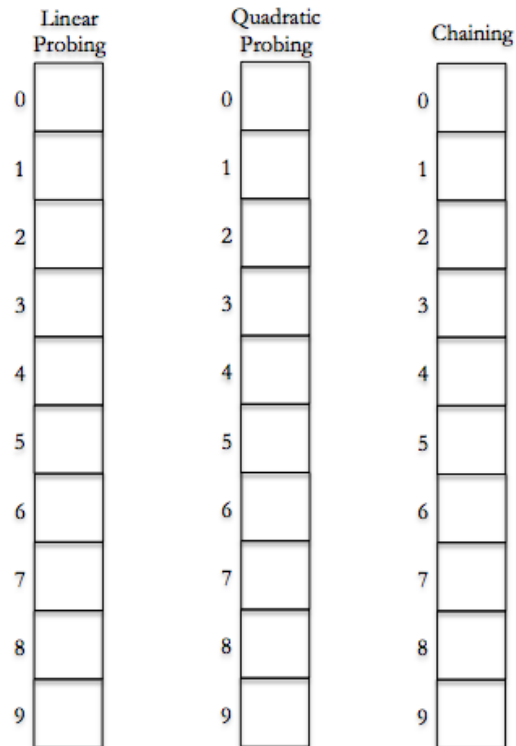
Show an AVL Tree as each of the following keys are added (in the order given). You may ignore their corresponding values.

$\{13, 17, 14, 19, 22, 18, 11, 10, 21\}$

Show the tree at each step.

2 Hashtable Insertions

Insert data with integer hash values 21, 44, 74, 16, 9, 20, 90 in the given order into a table of size 10. Insert using linear probing, quadratic probing and separate chaining with linked lists.



3 Secondary Hashing

Consider the following table which inserts values using secondary hashing with a primary hash function $h(k) = k \% 10$ and a secondary hash function $g(k) = 7 - (k \% 7)$. Insert the following values: 21, 36, 36, 11, 6 into the hashtable

0
1
2
3
4
5
6
7
8
9

1. Give a single integer that, when we attempt to insert it into the table results in an infinite loop.

2. Is there any way we can avoid double-hashing resulting in an infinite loop? Explain your answer.