Section Week 5 Worksheet

1) Hash Tables. Consider a hash table of size 7 where hashing function is h(key) % 7. Insert the following in order, according to the type of hash table below: 14, 10, 17, 4, 12, 13, 24

a. Show a chaining hash table

b. Show a hash table using open addressing with linear probing.

c. Show a hash table using open addressing with quadratic probing.

2) AVL Trees. We haven’t talked much about AVL deletion in this class, because it’s a bit more complicated than inserts. Let’s take a look at this example to see why. Find one key that we can delete so that the rebalancing phase requires two separate rebalancing acts (either a single- or double-rotation)? Note that a double-rotation counts as one, not two, rebalancing acts.

![AVL Tree Image]

3) B-Trees: (unfinished example from last time)

a. Insert the following into an empty B tree with M=3 and L=3: 12, 24, 36, 17, 18, 5, 22, 20.

b. Delete 17, 12, 22, 5 & 3