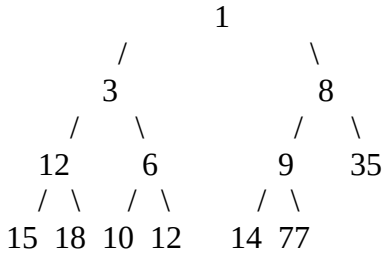
COP 3502 Study Group Sheet: Heaps, Hash Tables

Directions: Work together as a group to try to solve these problems. Talk through issues and see if you can convince yourselves of the right path to move forward.

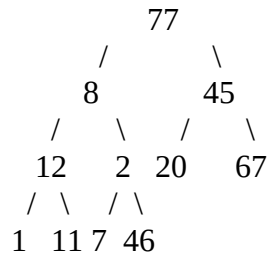
1) Show the result of inserting the item 7 into the heap shown below:



2) Show the result of removing the minimum element from the original heap in question #2 (without 7) from above.

3) Show the array representation of the original heap from question #2.

4) Run the whole Make Heap function on the following random values:



5) Consider a hash table that uses the linear probing technique with the following hash function f(x) = (5x+4)%11. (The hash table is of size 11.) If we insert the values 3, 9, 2, 1, 14, 6 and 25 into the table, in that order, show where these values would end up in the table?

index	0	1	2	3	4	5	6	7	8	9	10
value											

6) Do the same question as above, but this time use the quadratic probing strategy.

index	0	1	2	3	4	5	6	7	8	9	10
value											

7) Do the question above, but draw a picture of what the hash table would look like if linear chaining hashing was used.