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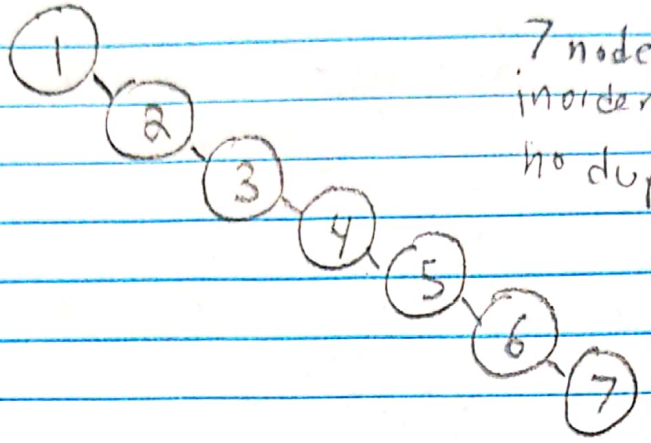
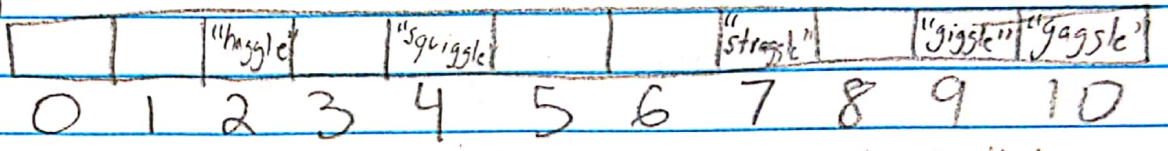
Foundation Exam - Summer 2021 - Section 1B

1.



7 nodes ☑
inorder = pre-order (1, 2, 3, 4, 5, 6, 7) ☑
no duplicates ☑

2. a)



Sorry the words are hard to read, so I decided to just write their index in the hash table.
"squiggle" @ index 4
"giggle" @ index 9
"haggle" @ index 2
"gaggle" @ indx 10
"straggle" @ index 7

b) One hash value that would cause a collision would be 117. The 7th index would cause a collision and satisfy the conditions. So 117 mod 11 equals 7. (I could have picked any number where the mod is 7)

$h = 117$

(3 is on backside of page)

3. a)

Item to delete	Number of restructure operations
6	2
20	2
33	1
57	0
62	0
100	1
107	1

b) 9 insertion operations
All on the right side of AVL Tree. After the nine insertions, any addition on right side WILL cause a imbalance that can only be solve by changing root.