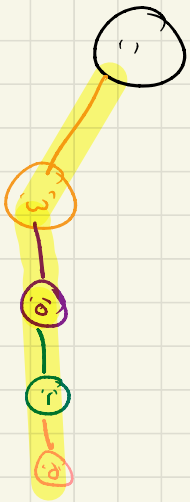
A2 Explanation : Tre Trees

Trie Trees

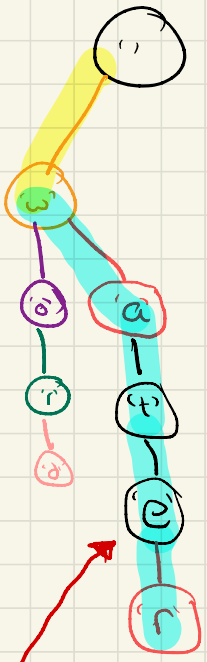
Insert("word")



1. Add "w" to subtrees, with value as a new TrieTree("w")
2. Add "o" to subtrees of w, make new TrieTree('o')
3. Add 'r' to subtrees of 'o', make new TrieTree('r')
4. Add 'd' to subtrees of 'r' make new TrieTree("d","word")

Trie Trees

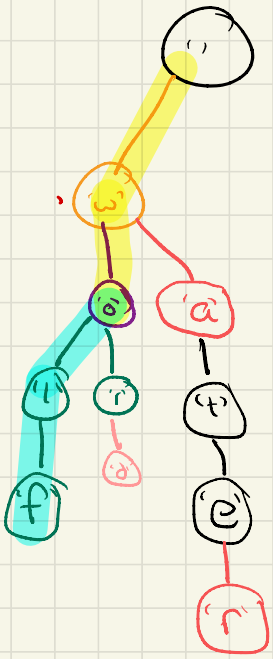
Insert("water")



1. Search for "w" in our children, retrieve that TrieTree
2. Add "a" to subtrees of w, make new TrieTree('a')
3/4. Add 't', 'e' to the chain
5. Add 'r' to subtrees of 'e' make new TrieTree("r", "water")

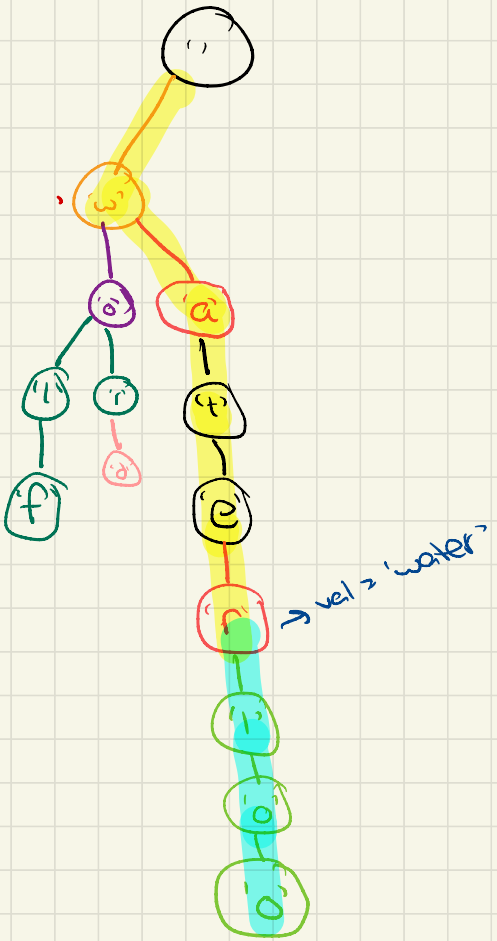
Trie Trees

Insert("wolf")



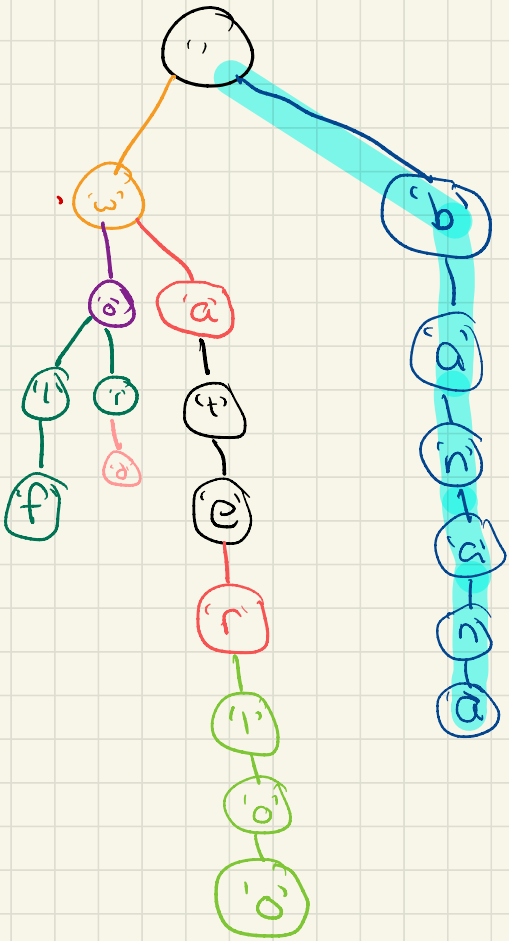
Trie Trees

Insert("waterloo")



Trie Trees

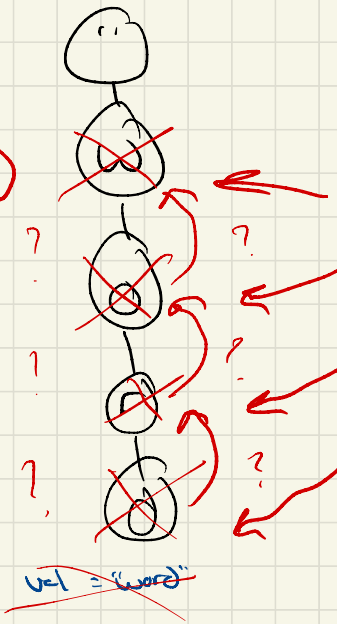
Insert("banana")



Deleting Items in Trie Trees

insert("word")

delItem("word")



Ex. 1

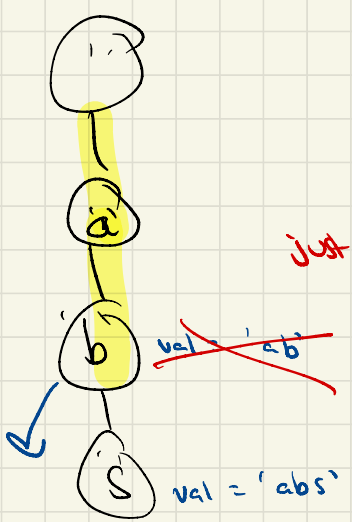
Delete nodes which have no other children.

Ex. 2

insert('ab')

insert('abs')

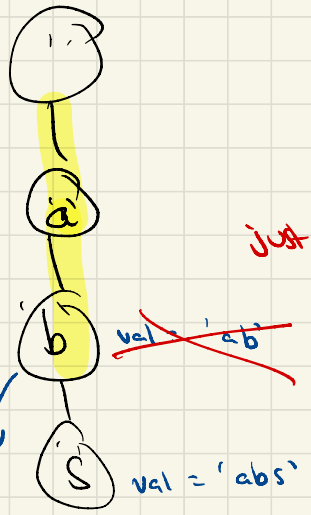
delItem('ab')



just delete the value 'ab'

don't delete b, because it has children

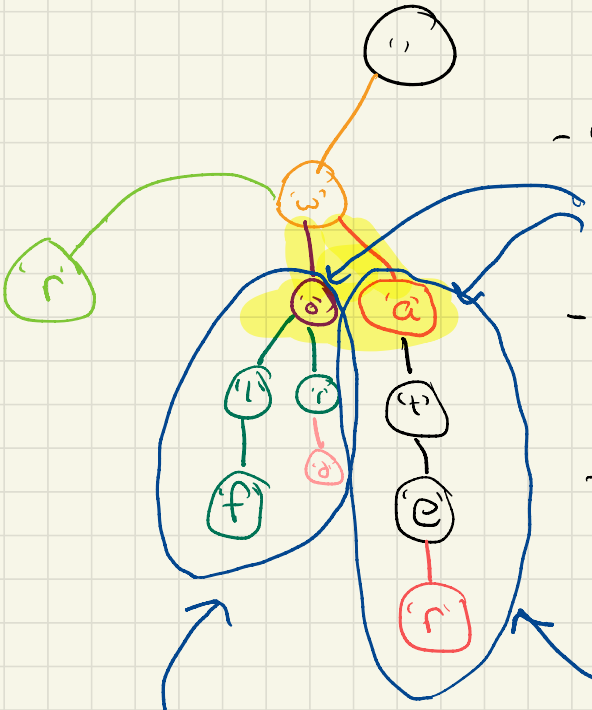
delitem('ab')



just delete the 'ab'

don't delete b, because it has children

Explaining self._children



Children of 'w'

- Store next characters as the keys 'a', 'o'
- The values of each key is just the TrieTree representing that character

Code-wise: (rooted at 'w')

self._children['a'] → TrieTree

self._children['o'] → TrieTree

Add new TrieTree

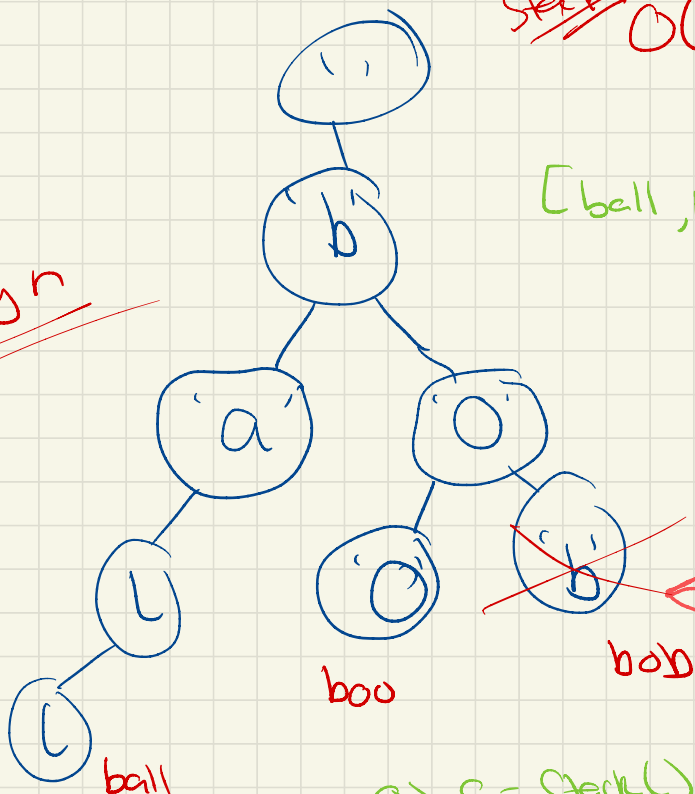
Let's say I want to add the word "write"

self._children['r'] = TrieTree('r')

Stack O(1)

Sorting
n log n

[ball, boo, bob]



delitem('bob')

0) S = Stack()
1) Search for b, S.push(b)
2) Search for o, S.push(o)
3) Search for b, S.push(b)
4) delete value 'bob' from
Start popping
5) parent = S.pop()
6) Check if parent has children
- If it has children, return (you're done)

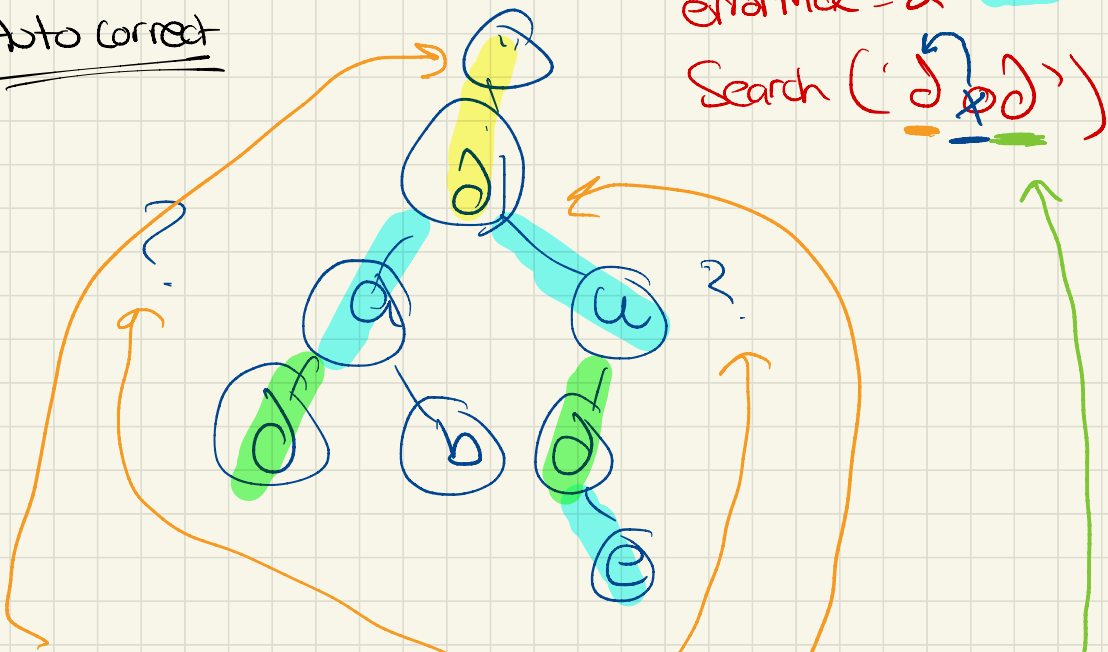
7) toDelete = parent.char
8) parent = S.pop()
9) delete toDelete from parent.children

Repeat 6-9 while not S.is_empty()

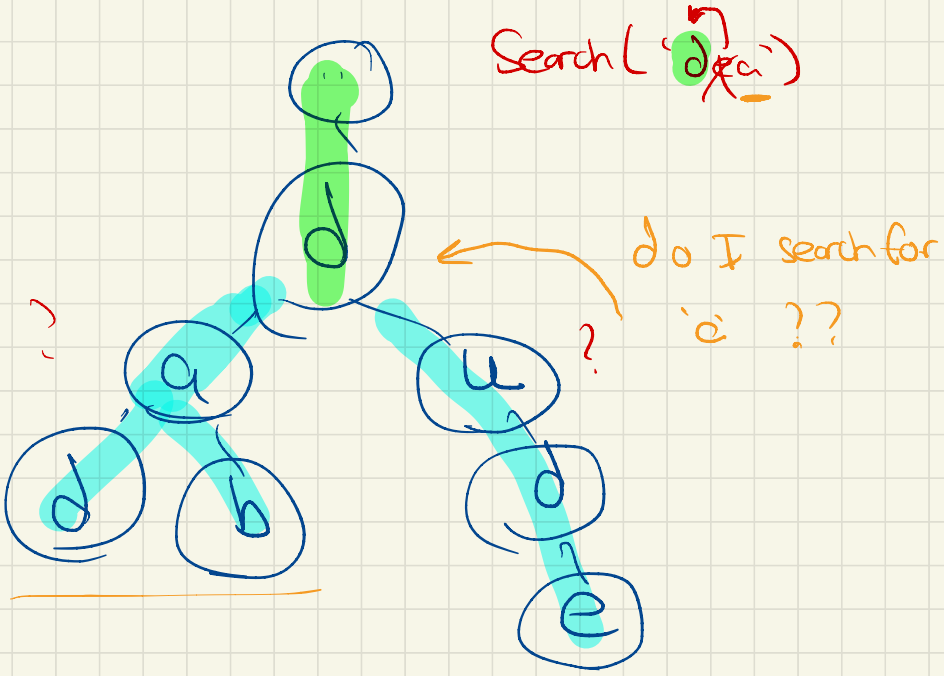
Auto correct

errorMax = 2

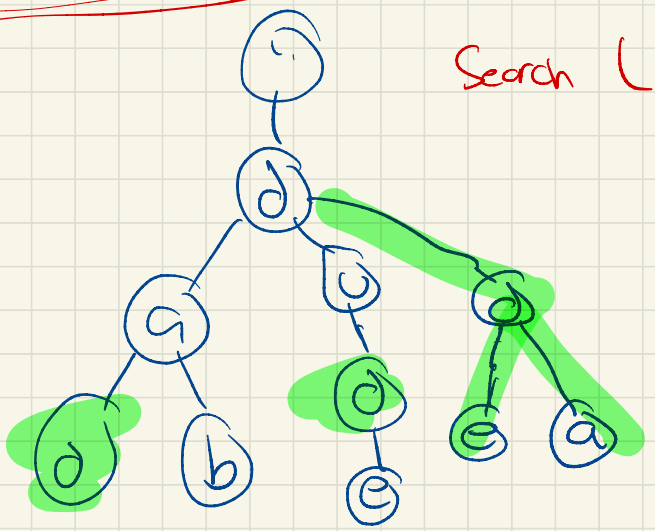
Search ('dpd')



1) Search for 'd'
2) Fails to search for 'o'
3) Moves back up to 'd'
4) for each child in ↗, look for next character.
5) Find dad and dude


Search('d')
d
a
u
d
b
d
e
do I search for 'e' ??

A2 clarification To Asil



Search ('dad')

Should I still return [dcd, dude]

or [dde, dda]