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Project 4 Report

CS 32

1. I think all my classes are working without any bugs.
2. Every method satisfies the Big-O requirements in the spec.
3. Trie::find() method description:

Search for the first character of the key in the root node’s children

If character is found,

For the remaining N-1 characters of the key, //done recursively

If there are no more characters to search for in key,

Return the values in the current node

Otherwise,

For every child of the current node, check for the first character in the key

If the key is in the child, search for the rest of the key starting at this child

If the letter is not found and you aren’t searching for an exact match, continue searching for an exact match of the rest of the key at this child

GenomeMatcher::findGenomesWithThisDNA() method description:

If the input is invalid,

Return false

Search your Trie for the prefix of fragment that is the length of the minimum search length

For every match found,

Extract a fragment that is the size of the fragment you are searching for (longest possible match size) from the genome, starting with the matching prefix

Check how much of the extracted fragment is actually a match to the searched-for fragment

If the match isn’t long enough, move on

Otherwise,

Check if you have already recorded a match for this genome,

If you have and this match is longer than the recorded match, replace the recorded match

If you haven’t, record a new match

If no matches have been found,

Return false

Return true