152113022 VERİ YAPILARI LABORATUVARI LAB

LAB WORK 11

27 December 2022

Objectives:

- Tries

Question 1: Write a program to build Tries data structures using struct or class. It will have **insert, search,** and **delete** function for modify or usage of the tries data structure. While building data structures think of how it behaves. And for delete function, you need to carefully to think all scenarios which are:

- Key may not be there in trie.
  - Delete operation should not modify trie.
- Key present as unique key
  - no part of key contains another key (prefix), nor the key itself is prefix of another key in trie). Delete all the nodes.
- Key is prefix key of another long key in trie.
  - Unmark the leaf node.
- Key present in trie, having at least one other key as prefix key.
  - Delete nodes from end of key until first leaf node of longest prefix key.

Hint: In delete function, usage of recursion can be beneficial.

Example struct:

```
const int ALPHABET_SIZE = 26;

struct TrieNode {

    struct TrieNode* child [ALPHABET_SIZE];

  // true if the node represents end of a word
    bool isEndOfWord;
};
```