Shri Vile Parle Kelavani Mandal's

INSTITUTE OF TECHNOLOGY

DHULE (M.S.)

DEPARMENT OF COMPUTER ENGINEERING

Subject: Competitive Programming Lab (BTCOL606)

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Class : T.Y Comp **Batch : T2** **Division: T**

Expt. No. :05 **Date : 24/03/2025**

Title : Problem 5:

Remark

Signature

Code:

```
// MOHAMMAD_ANAS_31_TY_COMP

#include <iostream>
#include <vector>
#include <unordered_map>
#include <sstream>
using namespace std;
int main() {
    int n;
    cout << "Enter the number of dictionary words: ";
    cin >> n;
    vector<string> dictionary(n);
    cout << "Enter the dictionary words: \n";
    for (int i = 0; i < n; ++i) cin >> dictionary[i];
    cin.ignore();
    string line;
    cout << "Enter encrypted lines (Ctrl+D to stop):\n";
    while (getline(cin, line)) {
        stringstream ss(line);
        string word, decrypted;
        vector<string> words;
```

```
while (ss >> word) words.push_back(word);

unordered_map<char, char> mapping;
unordered_map<char, char> reverseMapping;
vector<string> result(words.size(), "");

for (size_t i = 0; i < words.size(); ++i) {
    for (const string& dictWord : dictionary) {
        if (words[i].size() != dictWord.size()) continue;
        mapping.clear();
        reverseMapping.clear();
        bool valid = true;

        for (size_t j = 0; j < words[i].size(); ++j) {
            char enc = words[i][j], org = dictWord[j];
            if (mapping.count(enc) && mapping[enc] != org) {
                valid = false;
                break;
            }
            if (reverseMapping.count(org) && reverseMapping[org] != enc) {
                valid = false;
                break;
            }
            mapping[enc] = org;
            reverseMapping[org] = enc;
        }
        if (valid) {
            result[i] = dictWord;
            break;
        }
    }
}
for (size_t i = 0; i < result.size(); ++i) {
    if (result[i].empty()) result[i] = string(words[i].size(), '*');
    if (i > 0) decrypted += " ";
    decrypted += result[i];
```

```
        }
        cout << "Decrypted text: " << decrypted << endl;
    }
    return 0;
}
```

Output: