



Shri Vile Parle Kelavani Mandal's

# INSTITUTE OF TECHNOLOGY

## DHULE (M.S.)

### DEPARTMENT OF COMPUTER ENGINEERING

**Subject:** Competitive Programming Lab (BTCOL606)

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**Roll No. :** 31

**Class :** T.Y Comp

**Batch :** T2

**Division:** T

**Expt. No. :**07

**Date :**

**Title : Problem 6:Write a Program to implement QWERTY Problem.**

Remark

Signature

**Code:**

```
// MOHAMMAD_ANAS_31_TY_COMP
```

```
#include <iostream>
```

```
#include <string>
```

```
using namespace std;
```

```
int main() {
```

```
    string line;
```

```
    // QWERTY keyboard layout as a reference string
```

```
    string keyboard = "1234567890-  
=QWERTYUIOP[]\ASDFGHJKL;'ZXCVBNM,./";
```

```
    // Read lines until EOF
```

```
    while (getline(cin, line)) {
```

```
        string decoded = "";
```

```
// Loop through each character in the line
for (int i = 0; i < line.length(); i++) {
    char ch = line[i];

    // If it's a space, keep it as is
    if (ch == ' ') {
        decoded += ' ';
    } else {
        // Search in keyboard string
        int pos = -1;
        for (int j = 0; j < keyboard.length(); j++) {
            if (keyboard[j] == ch) {
                pos = j;
                break;
            }
        }

        // If found and not the first character, take the left character
        if (pos > 0) {
            decoded += keyboard[pos - 1];
        } else {
            decoded += ch; // If not found, add as is
        }
    }
}
```

```
}
```

```
// Print the decoded line
```

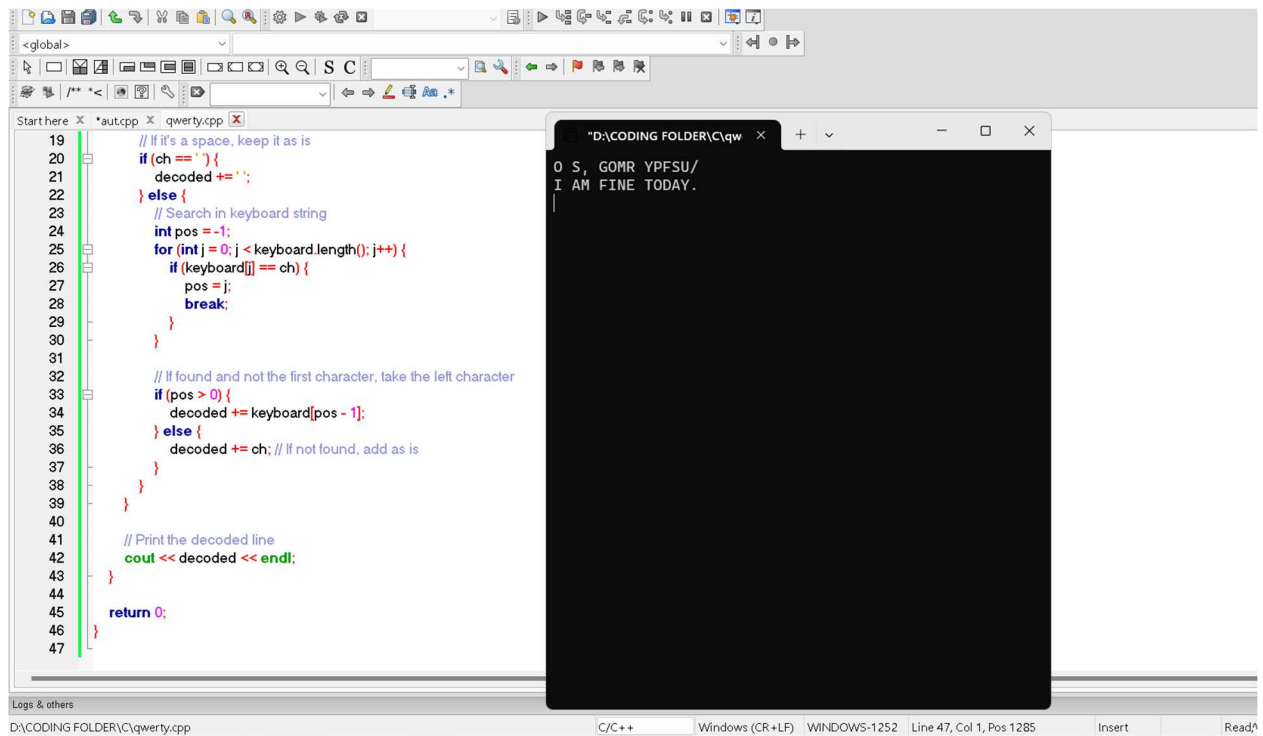
```
cout << decoded << endl;
```

```
}
```

```
return 0;
```

```
}
```

**Output:**



The screenshot shows a C++ IDE with two windows. The left window, titled 'Start here x \*aut.cpp x qwerty.cpp', displays the source code for a program that decodes a string. The code includes comments and logic to handle spaces and search for characters in a 'keyboard' string. The right window, titled 'D:\CODING FOLDER\C\qw', shows the output of the program: 'O S, GOMR YPFSU/' and 'I AM FINE TODAY.'.

```
19 // If it's a space, keep it as is
20 if (ch == ' ') {
21     decoded += ' ';
22 } else {
23     // Search in keyboard string
24     int pos = -1;
25     for (int j = 0; j < keyboard.length(); j++) {
26         if (keyboard[j] == ch) {
27             pos = j;
28             break;
29         }
30     }
31
32     // If found and not the first character, take the left character
33     if (pos > 0) {
34         decoded += keyboard[pos - 1];
35     } else {
36         decoded += ch; // If not found, add as is
37     }
38 }
39 }
40
41 // Print the decoded line
42 cout << decoded << endl;
43 }
44
45 return 0;
46 }
47
```

O S, GOMR YPFSU/  
I AM FINE TODAY.