

## Word Break in C++

```
#include <iostream>
#include <unordered_set>
#include <string>

using namespace std;

void wordBreak(string str, string ans,
unordered_set<string>& dict) {
    if (str.length() == 0) {
        cout << ans << endl;
        return;
    }

    for (int i = 0; i < str.length(); i++) {
        string left = str.substr(0, i + 1);
        if (dict.find(left) != dict.end()) {
            string right = str.substr(i + 1);
            wordBreak(right, ans + left + " ",
dict);
        }
    }
}

int main() {
    int n = 5;
    unordered_set<string> dict = {"microsoft",
"hiring", "at", "kolkata"};
    string sentence = "microsoft hiring";

    wordBreak(sentence, "", dict);

    return 0;
}
```

### Dry Run Table:

| Call | str              | ans                 | Lo<br>op<br>i | left =<br>str.substr(0<br>, i+1) | left<br>in<br>dict<br>? | Action<br>Taken                                     |
|------|------------------|---------------------|---------------|----------------------------------|-------------------------|---|
| 1    | microsoft hiring | ""                  | 0             | m                                | ✗                       | skip  |
| 1    | microsoft hiring | ""                  | 1             | mi                               | ✗                       | skip  |
| 1    | microsoft hiring | ""                  | 2             | mic                              | ✗                       | skip  |
| 1    | microsoft hiring | ""                  | 3             | micr                             | ✗                       | skip  |
| 1    | microsoft hiring | ""                  | 4             | micro                            | ✗                       | skip  |
| 1    | microsoft hiring | ""                  | 5             | micros                           | ✗                       | skip  |
| 1    | microsoft hiring | ""                  | 6             | microso                          | ✗                       | skip  |
| 1    | microsoft hiring | ""                  | 7             | microsof                         | ✗                       | skip  |
| 1    | microsoft hiring | ""                  | 8             | microsoft                        | ✓                       | Recurse with<br>str=hiring,<br>ans=microso<br>ft    |
| 2    | hiring           | microsoft           | 0             | h                                | ✗                       | skip  |
| 2    | hiring           | microsoft           | 1             | hi                               | ✗                       | skip  |
| 2    | hiring           | microsoft           | 2             | hir                              | ✗                       | skip  |
| 2    | hiring           | microsoft           | 3             | hiri                             | ✗                       | skip  |
| 2    | hiring           | microsoft           | 4             | hirin                            | ✗                       | skip  |
| 2    | hiring           | microsoft           | 5             | hiring                           | ✓                       | Recurse with<br>str="",<br>ans=microso<br>ft hiring |
| 3    | ""               | microsoft<br>hiring | -             | —                                | —                       | Print:<br>microsoft<br>hiring                       |

### ✓ Final Output:

microsoft hiring

|                  |  |
|------------------|--|
|                  |  |
| Output:-         |  |
| microsoft hiring |  |