

104. Word break problem

Code:

```
def wordBreak(s, wordDict):
    word_set = set(wordDict)
    dp = [False] * (len(s) + 1)
    dp[0] = True

    for i in range(1, len(s) + 1):
        for j in range(i):
            if dp[j] and s[j:i] in word_set:
                dp[i] = True
                break

    return dp[len(s)]

s1 = "leetcode"
wordDict1 = ["leet", "code"]
print(wordBreak(s1, wordDict1))

s2 = "applepenapple"
wordDict2 = ["apple", "pen"]
print(wordBreak(s2, wordDict2))

s3 = "catsanddog"
wordDict3 = ["cats", "dog", "sand", "and", "cat"]
print(wordBreak(s3, wordDict3))
```

Output:

```
True
True
False
```

Time Complexity:

- $T(n) = O(n^2)$