

Week6_Q3

A	B	C	E
S	F	C	S
A	D	E	E

Word = "ABCCED"

First it searches for A

A	B	C	E
S	F	C	S
A	D	E	E

Now it searches for B around A

A	B	C	E
S	F	C	S
A	D	E	E

Next for C around B

A	B	C	E
S	F	C	S
A	D	E	E

Next C around last c

Next E around C

Next D around E

Final

A	B	C	E
S	F	C	S
A	D	E	E

CODE:

```

def exist(board, word):
    def backtrack(board, word, row, col, index):
        if index == len(word):
            return True

        if (
            row < 0 or row >= len(board) or
            col < 0 or col >= len(board[0]) or
            board[row][col] != word[index]
        ):
            return False

        temp = board[row][col]
        board[row][col] = '#'

        found = (
            backtrack(board, word, row - 1, col, index + 1) or # Up
            backtrack(board, word, row + 1, col, index + 1) or # Down
            backtrack(board, word, row, col - 1, index + 1) or # Left
            backtrack(board, word, row, col + 1, index + 1)     # Right
        )

        board[row][col] = temp
        return found

    for row in range(len(board)):
        for col in range(len(board[0])):
            if backtrack(board, word, row, col, 0):
                return True

    return False

board = [
    ["A", "B", "C", "E"],
    ["S", "F", "C", "S"],
    ["A", "D", "E", "E"]
]
word = "ABCCED"
print(exist(board, word))

```

```
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1 def exist(board, word):
2     def backtrack(board, word, row, col, index):
3         if index == len(word):
4             return True
5
6         if (
7             row < 0 or row >= len(board) or
8             col < 0 or col >= len(board[0]) or
9             board[row][col] != word[index]
10        ):
11            return False
12
13        temp = board[row][col]
14        board[row][col] = '#'
15
16        found = (
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL**

/usr/local/bin/python3 /Users/rakesh_kasha/Desktop/Week6_Q3.py
(base) rakesh_kasha@Rakesh-kashas-MacBook-Pro ~ % /usr/local/bin/python3 /Users/rakesh_kasha/Desktop/Week6_Q3.py
True
True
False
(base) rakesh_kasha@Rakesh-kashas-MacBook-Pro ~ %

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```
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30     return False
31
32
33 board = [
34     ["A","B","C","E"],["S","F","C","S"],["A","D","E","E"]]
35 word = "ABCCED"
36 print(exist(board, word))
37
38 board2 = [
39     ["A","B","C","E"],["S","F","C","S"],["A","D","E","E"]]
40 word = "SEE"
41 print(exist(board2, word))
42
43 board3 = [
44     ["A","B","C","E"],["S","F","C","S"],["A","D","E","E"]]
45 word = "ABCB"
46 print(exist(board3, word))
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL**

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(base) rakesh_kasha@Rakesh-kashas-MacBook-Pro ~ % /usr/local/bin/python3 /Users/rakesh_kasha/Desktop/Week6_Q3.py
True
True
False
(base) rakesh_kasha@Rakesh-kashas-MacBook-Pro ~ %

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