

104)Word Wrap Problem

CODE:

```
import sys
def word_wrap(words, M):
    n = len(words)
    cost = [[0] * n for _ in range(n)]
    for i in range(n):
        cost[i][i] = M - len(words[i])
    for j in range(i + 1, n):
        cost[i][j] = cost[i][j - 1] - len(words[j]) - 1
    dp = [0] * n
    p = [0] * n
    for i in range(n - 1, -1, -1):
        dp[i] = sys.maxsize
    for j in range(i, n):
        if cost[i][j] < sys.maxsize:
            if j == n - 1:
                temp = 0
            else:
                temp = dp[j + 1]
            if dp[i] > cost[i][j] + temp:
                dp[i] = cost[i][j] + temp
                p[i] = j + 1
            start = 0
    while start < n:
        end = p[start]
        print(' '.join(words[start:end]))
        start = end

    return dp[0]

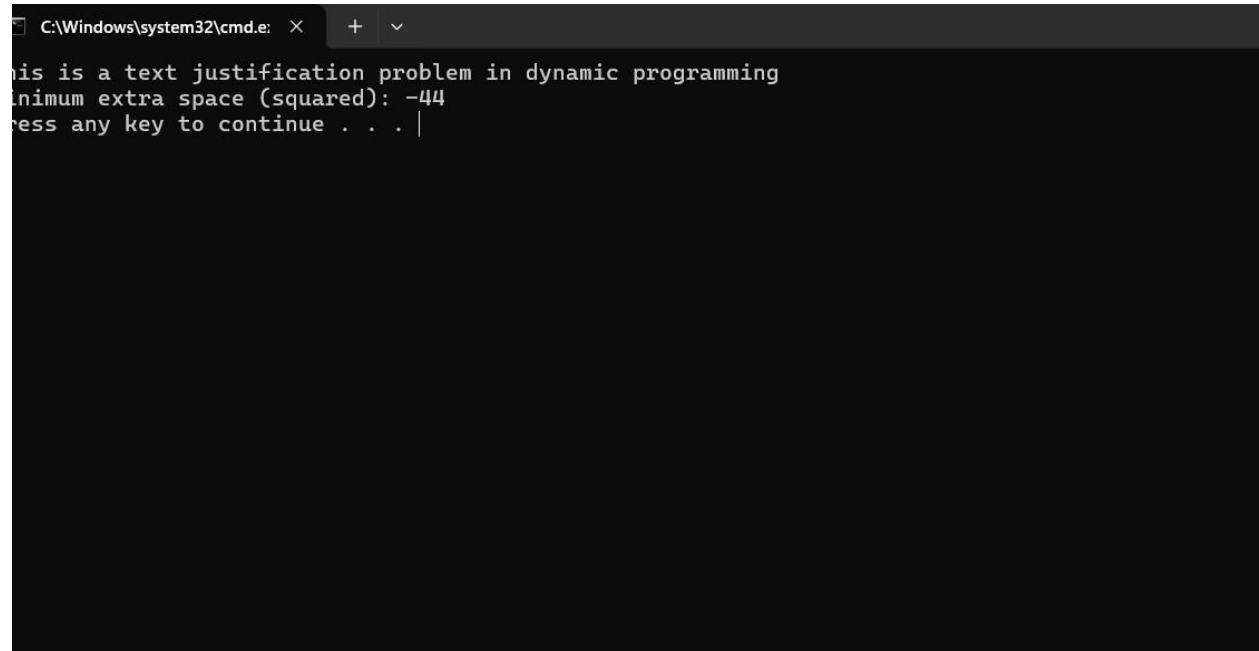
words = ["This", "is", "a", "text", "justification", "problem", "in", "dynamic",
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"programming"
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] M = 15
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print("Minimum extra space (squared):", word_wrap(words, M))
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OUTPUT:



```
C:\Windows\system32\cmd.e: × + v  
his is a text justification problem in dynamic programming  
Minimum extra space (squared): -44  
Press any key to continue . . . |
```

TIME COMPLEXITY :