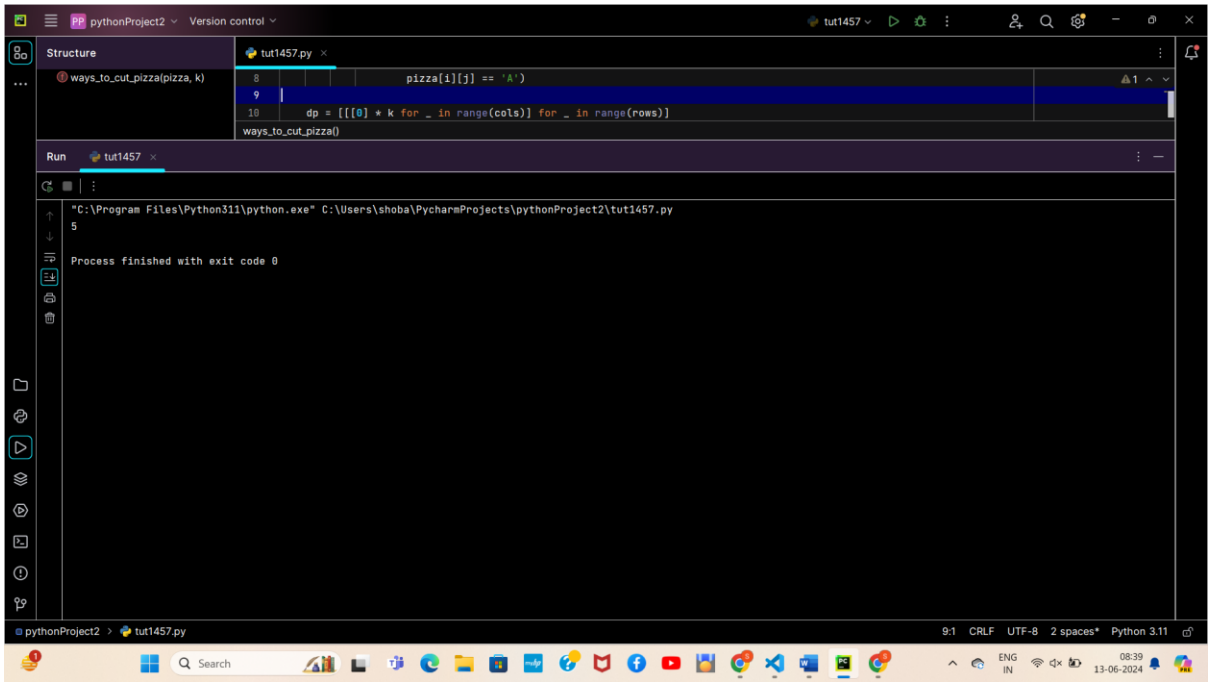
62. Number of ways of cutting a Pizza

Program:

```
    def ways_to_cut_pizza(pizza, k):


    MOD = 10 ** 9 + 7


    rows, cols =  len(pizza), len(pizza[0])


    prefix_sum = [[0] * (cols + 1) for _ in range(rows + 1)]


    for i in range(rows - 1, -1, -1):


        for j in range(cols - 1, -1, -1):


            prefix_sum[i][j] = prefix_sum[i + 1][j] + prefix_sum[i][j + 1]
- prefix_sum[i + 1][j + 1] + (


                        pizza[i][j] == 'A')









    dp = [[[0] * k for _ in range(cols)] for _ in range(rows)]









    for i in range(rows):


        dp[i][cols - 1][0] = 1


    for j in range(cols):


        dp[rows - 1][j][0] = 1
```

```
    for slices in range(1, k):
        for i in range(rows - 1, -1, -1):
            for j in range(cols - 1, -1, -1):
                for x in range(i + 1, rows):
                    if prefix_sum[i][j] - prefix_sum[x][j] > 0:
                        dp[i][j][slices] += dp[x][j][slices - 1]
                        dp[i][j][slices] %= MOD
                for y in range(j + 1, cols):
                    if prefix_sum[i][j] - prefix_sum[i][y] > 0:
                        dp[i][j][slices] += dp[i][y][slices - 1]
                        dp[i][j][slices] %= MOD
    return dp[0][0][k - 1]
print(ways_to_cut_pizza(["A..", "AAA", "..."], 3))
```

Output:


pythonProject2
Version control
tut1457
Structure
tut1457.py
ways_to_cut_pizza(pizza, k)
pizza[i][j] == 'A')
dp = [[[0] * k for _ in range(cols)] for _ in range(rows)]
ways_to_cut_pizza()
Run
tut1457
"C:\Program Files\Python311\python.exe" C:\Users\shoba\PycharmProjects\pythonProject2\tut1457.py
5
Process finished with exit code 0
pythonProject2 > tut1457.py
9:1 CRLF UTF-8 2 spaces* Python 3.11
Search
ENG
IN
08:39
13-06-2024