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main.py

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```
def findways(m,n,N,i,j,memo):
    if i<0 or i>=m or j<0 or j>=n:
        return 1
    if N==0:
        return 0
    if (i,j,n) in memo:
        return memo([i,j,N])
    ways=(findways(m,n,N-1,i+1,j,memo)+
          findways(m,n,N-1,i-1,j,memo)+
          findways(m,n,N-1,i,j+1,memo)+
          findways(m,n,N-1,i,j-1,memo))
    memo[(i,j,N)]=ways
    return ways
def balloutgrid(m,n,N,i,j):
    memo={}
    return findways(m,n,N,i,j,memo)
print(balloutgrid(1,3,3,0,1))
```

Output | Clear

```
12

=== Code Execution Successful ===
```


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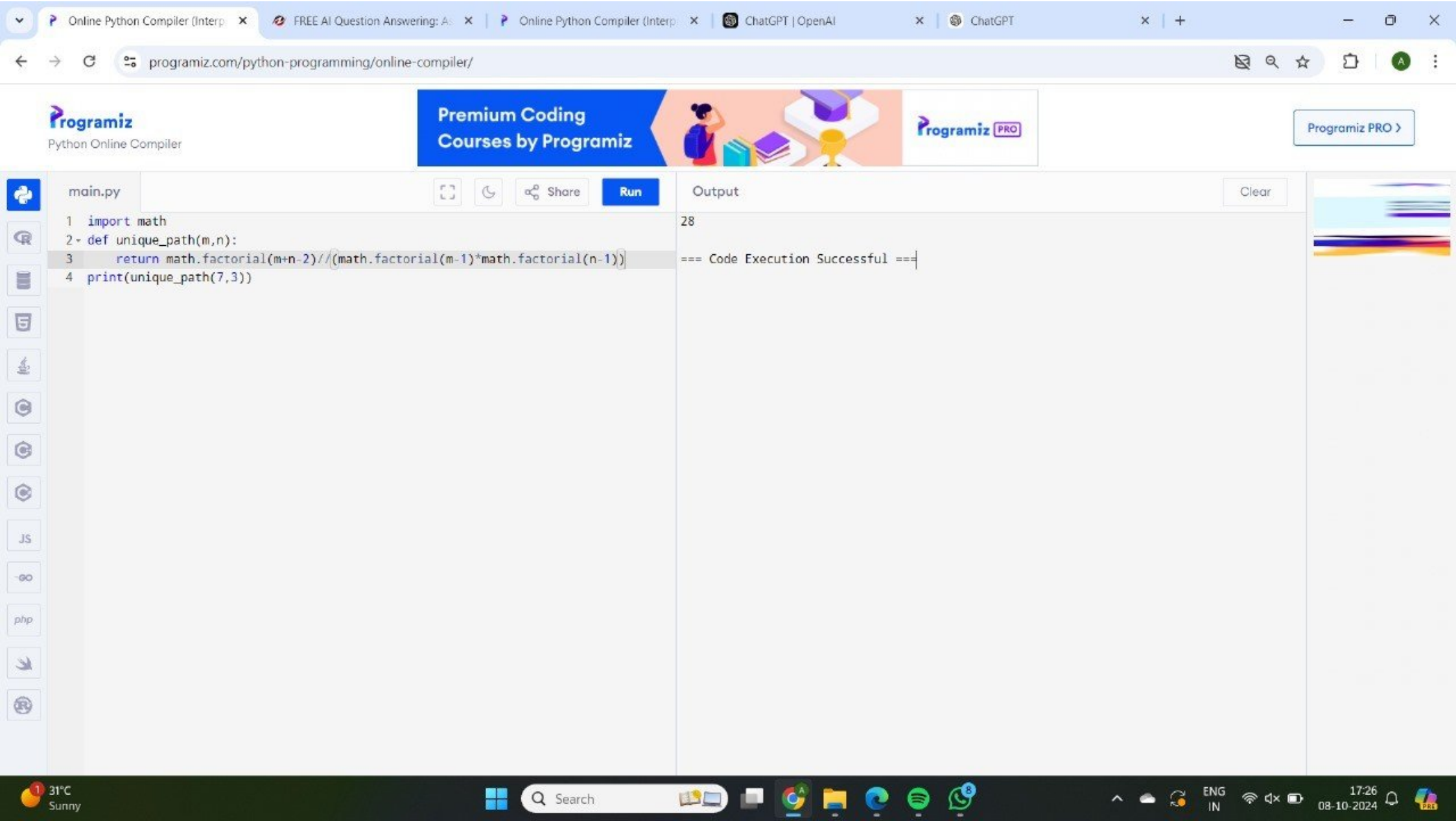
```
1 def stairs(n):
2     if n<=0:
3         return 0
4     elif n==1:
5         return 1
6     else:
7         return stairs(n-1)+stairs(n-2)
8 sum=1
9 for i in range(4):
10     sum+=stairs(i)
11 print(sum)
```

Output | Clear

```
5

=== Code Execution Successful ===
```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main.py
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Run
Output
Clear
1 import math
2 def unique_path(m,n):
3 return math.factorial(m+n-2)//(math.factorial(m-1)*math.factorial(n-1))
4 print(unique_path(7,3))
28
=== Code Execution Successful ===
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main.py | Share | Run

```
1  def rob_linear(houses):
2      previous=0
3      current=0
4      for amount in houses:
5          new_current=max(current,previous+amount)
6          previous=current
7          current=new_current
8      return current
9  def rob_circular(num):
10     if (len(num)==1):
11         return num[0]
12     case1=rob_linear(num[:-1])
13     case2=rob_linear(num[1:])
14     return max(case1,case2)
15 print(rob_circular([1,2,9]))
```

Output | Clear

```
9

=== Code Execution Successful ===
```

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main.py

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```python
def large_group_positions(s):
    result = []
    n = len(s)
    i = 0
    while i < n:
        start = i
        while i < n and s[i] == s[start]:
            i += 1
        if i - start >= 3:
            result.append([start, i - 1])
    return result
print(large_group_positions("abbxxxxzzy"))

```

Output | Clear

```
[[3, 6]]

=== Code Execution Successful ===
```


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main.py | Share | Run | Output | Clear

```python
def game_of_life(board):
    rows, cols = len(board), len(board[0])
    directions = [(-1, -1), (-1, 0), (-1, 1), (0, -1), (0, 1), (1, -1), (1, 0), (1, 1)]
    def count_live_neighbors(r, c):
        count = 0
        for dr, dc in directions:
            nr, nc = r + dr, c + dc
            if 0 <= nr < rows and 0 <= nc < cols and abs(board[nr][nc]) == 1:
                count += 1
        return count
    for r in range(rows):
        for c in range(cols):
            live_neighbors = count_live_neighbors(r, c)
            if board[r][c] == 1 and (live_neighbors < 2 or live_neighbors > 3):
                board[r][c] = -1
            elif board[r][c] == 0 and live_neighbors == 3:
                board[r][c] = 2
    for r in range(rows):
        for c in range(cols):
            if board[r][c] > 0:
                board[r][c] = 1
            else:
                board[r][c] = 0
board1 = [[0,1,0],[0,0,1],[1,1,1],[0,0,0]]
game_of_life(board1)
print(board1)
board2 = [[1,1],[1,0]]
game_of_life(board2)
print(board2)
```

```
[[0, 0, 0], [1, 0, 1], [0, 1, 1], [0, 1, 0]]
[[1, 1], [1, 1]]

=== Code Execution Successful ===
```

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main.py

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```python
def champagneTower(poured: int, query_row: int, query_glass: int) -> float:
    glasses = [[0] * (i + 1) for i in range(query_row + 1)]
    glasses[0][0] = poured
    for r in range(query_row + 1):
        for c in range(r + 1):
            if glasses[r][c] > 1:
                excess = glasses[r][c] - 1
                glasses[r][c] = 1
                if r + 1 < len(glasses):
                    glasses[r + 1][c] += excess / 2
                    glasses[r + 1][c + 1] += excess / 2
    return min(1, glasses[query_row][query_glass])
print(champagneTower(2, 1, 1))
```

```
0.5

--- Code Execution Successful ---
```

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