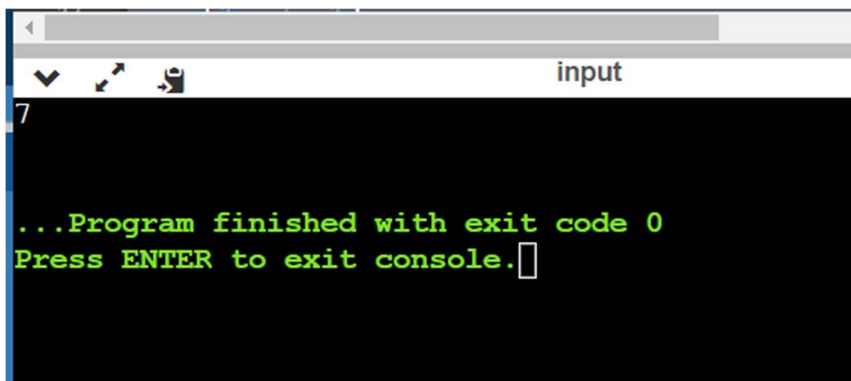


**Problem 1 :** Minimum Path Sum in A Grid

```
def min_path_sum(grid):  
    if not grid:  
        return 0  
  
    rows, cols = len(grid), len(grid[0])  
    dp = [[0 for _ in range(cols)] for _ in range(rows)]  
    dp[0][0] = grid[0][0]  
    for c in range(1, cols):  
        dp[0][c] = dp[0][c - 1] + grid[0][c]  
    for r in range(1, rows):  
        dp[r][0] = dp[r - 1][0] + grid[r][0]  
    for r in range(1, rows):  
        for c in range(1, cols):  
            dp[r][c] = min(dp[r - 1][c], dp[r][c - 1]) + grid[r][c]  
    return dp[rows - 1][cols - 1]  
  
grid = [  
    [1, 3, 1],  
    [1, 5, 1],  
    [4, 2, 1]  
]  
print(min_path_sum(grid))
```

A screenshot of a terminal window with a dark background. The title bar at the top shows a window icon, a maximize icon, and a close icon, followed by the text "input". The terminal content shows a green prompt character "7" on the first line. The second line displays the message "...Program finished with exit code 0" in green. The third line displays the message "Press ENTER to exit console." in green, followed by a white cursor icon (a small square) on the same line.

```
7  
...Program finished with exit code 0  
Press ENTER to exit console.
```