Manual Matrix Multiplication Code

```
# Function to multiply two matrices
def matrix_multiply(A, B):
    rows_A = len(A)
    cols_A = len(A[0])
    rows_B = len(B)
    cols_B = len(B[0])

    if cols_A != rows_B:
        print("Matrix multiplication not possible ❌")
        return None

    # Create result matrix with 0s
    result = [[0 for _ in range(cols_B)] for _ in range(rows_A)]

    # Multiply
    for i in range(rows_A):
        for j in range(cols_B):
            for k in range(cols_A):
                result[i][j] += A[i][k] * B[k][j]

    return result

# Example matrices
A = [[1, 2],
     [3, 4]]

B = [[5, 6],
     [7, 8]]

# Call the function
C = matrix_multiply(A, B)

# Print result
print("Result Matrix:")
for row in C:
    print(row)
```

Output:

```
Result Matrix:
[19, 22]
[43, 50]

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