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from pyspark.sql import SparkSession

def input_matrix(name):
    print(f"\nEnter the number of rows and columns for Matrix {name}:")
    rows = int(input("Number of rows: "))
    cols = int(input("Number of columns: "))
    print(f"Enter elements of Matrix {name} in the format 'row column value'")
    print("Enter 'done' when finished.")

    matrix = []
    while True:
        entry = input("> ")
        if entry.lower() == "done":
            break
        try:
            r, c, v = map(int, entry.strip().split())
            matrix.append((r, c, v))
        except:
            print("Invalid input. Please enter in the format 'row column value'")
    return matrix

def multiply_matrices(matrix_A, matrix_B):
    # Initialize Spark session
    spark = SparkSession.builder.appName("MatrixMultiplication").getOrCreate()
    sc = spark.sparkContext

    # Convert to RDD
    rdd_A = sc.parallelize(matrix_A)
    rdd_B = sc.parallelize(matrix_B)

    # Map Phase
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    mapped_A = rdd_A.map(lambda x: (x[1], (x[0], x[2])))  # (col_A, (row_A, val_A))
    mapped_B = rdd_B.map(lambda x: (x[0], (x[1], x[2])))  # (row_B, (col_B, val_B))

    # Join Phase
    joined = mapped_A.join(mapped_B)
    # ((common_index), ((row_A, val_A), (col_B, val_B)))

    # Partial Products
    partial_products = joined.map(lambda x: ((x[1][0][0], x[1][1][0]), x[1][0][1] * x[1][1][1]))

    # Reduce Phase
    result = partial_products.reduceByKey(lambda x, y: x + y)

    # Collect and Print
    output = result.collect()
    for ((row, col), value) in sorted(output):
        print(f"({row}, {col}) -> {value}")

    spark.stop()

def menu():
    while True:
        print("\n--- Matrix Multiplication Menu ---")
        print("1. Use default matrices")
        print("2. Enter custom matrices")
        print("3. Exit")
        choice = input("Enter your choice (1/2/3): ")

        if choice == '1':
            matrix_A = [
                (0, 0, 4), (0, 1, 6), (0, 2, 8),
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            (1, 0, 5), (1, 1, 5), (1, 2, 4)
        ]
        matrix_B = [
            (0, 0, 7), (0, 1, 8),
            (1, 0, 9), (1, 1, 10),
            (2, 0, 11), (2, 1, 12)
        ]
        multiply_matrices(matrix_A, matrix_B)

    elif choice == '2':
        print("Enter details for Matrix A:")
        matrix_A = input_matrix("A")
        print("Enter details for Matrix B:")
        matrix_B = input_matrix("B")
        multiply_matrices(matrix_A, matrix_B)

    elif choice == '3':
        print("Exiting the program.")
        break
    else:
        print("Invalid choice. Please enter 1, 2, or 3.")

# Run the menu
menu()
```