58. Evaluate Boolean Expression

SQL Schema

Table Variables:

```
+---------------+---------+
| Column Name   | Type    |
+---------------+---------+
| name          | varchar |
| value         | int     |
+---------------+---------+
```

name is the primary key for this table.

This table contains the stored variables and their values.

Table Expressions:

```
+---------------+---------+
| Column Name   | Type    |
+---------------+---------+
| left_operand  | varchar |
| operator      | enum    |
| right_operand | varchar |
+---------------+---------+
```

(left_operand, operator, right_operand) is the primary key for this table.

This table contains a boolean expression that should be evaluated.

operator is an enum that takes one of the values ('<', '>', '=')

The values of left_operand and right_operand are guaranteed to be in the Variables table.

Write an SQL query to evaluate the boolean expressions in Expressions table.

Return the result table in any order.

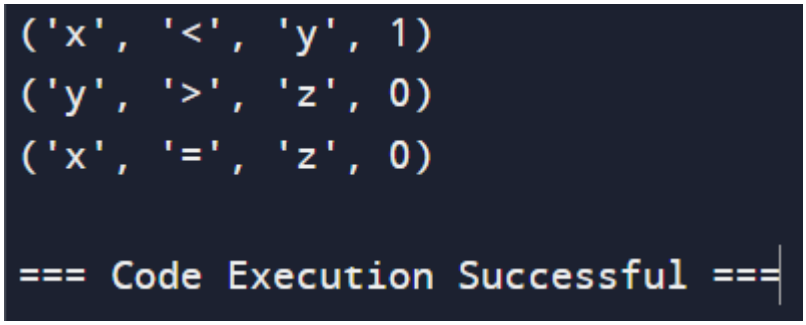
The query result format is in the following example.

Program:

```
import sqlite3

# Create an in-memory SQLite database
conn = sqlite3.connect(':memory:')
cursor = conn.cursor()

# Create the Variables table and insert sample data
cursor.execute('''
CREATE TABLE Variables (
    name TEXT PRIMARY KEY,
    value INTEGER
)
''')
cursor.executemany('''
INSERT INTO Variables (name, value) VALUES (?, ?)
''', [
    ('x', 1),
    ('y', 2),
    ('z', 3)
])

# Create the Expressions table and insert sample data
cursor.execute('''
CREATE TABLE Expressions (
    left_operand TEXT,
    operator TEXT,
    right_operand TEXT,
    PRIMARY KEY (left_operand, operator, right_operand)
)
''')
cursor.executemany('''
```

```
INSERT INTO Expressions (left_operand, operator, right_operand) VALUES (?, ?, ?)
''', [
    ('x', '<', 'y'),
    ('y', '>', 'z'),
    ('x', '=', 'z')
])

# Execute the query
query = '''
SELECT e.left_operand, e.operator, e.right_operand,
       CASE
          WHEN e.operator = '<' THEN v1.value < v2.value
          WHEN e.operator = '>' THEN v1.value > v2.value
          WHEN e.operator = '=' THEN v1.value = v2.value
       END AS result
FROM Expressions e
JOIN Variables v1 ON e.left_operand = v1.name
JOIN Variables v2 ON e.right_operand = v2.name
'''

cursor.execute(query)
results = cursor.fetchall()

# Print the results
for row in results:
    print(row)

# Close the connection
conn.close()
```

Output:



Time complexity:O(n*m)