Programming Assignment 5

NoSQL (Non Relational Databases) DB

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We have worked on the Florida lotto winning database and have used the DynamoDb AWS as our NoSql database.

Please find below the steps we used in the assignment.

1. Creating a table in the DynamoDb to store the Lottery information.
2. We have used the Java AWS SDK to create table “***Lotto***” and have stored the following columns:
3. Date – This is our primary key.
4. Num1 – The first number.
5. Num2 – The second number.
6. Num3 – The third number.
7. Num4 – The fourth number.
8. Num5 – The fifth number.
9. Num6 – The sixth number.
10. We have populated the data into this table using the Java API method.
11. Fetching the results.

For all the Results we fetch all the dataset from DynamoDB using the ScanRequest API

1. Most Frequent (Individual) Numbers Picked:

i) We maintain a HashMap of Numbers versus Count of that number

ii) We loop through each of the numbers to find the count and update it accordingly.

iii) After going through all the elements in DB, we get the count of all individual numbers

RESULT :

Find the Result Analysis in “***Result1-Individual Count.txt***”

1. Most frequent individual numbers by month in any year:
2. We maintain a HashMap where the key is the month and the value is again a HashMap where key is the winning number and value is the count
3. We iterate through the dataset fetched earlier and update this Hashmap accordingly
4. After going through all the data, we will have our results as required.

RESULT:

Find the Result Analysis in “**Result2-Month versus Winning Number.txt**”

1. Most frequent individual numbers by month in each year:
2. We maintain a HashMap where the key is the Year and the value is again a HashMap where the key is the Month and the value is again a HashMap where key is the winning number and value is the count
3. We iterate through the dataset fetched earlier and update this Hashmap accordingly
4. After going through all the data, we will have our results as required.

RESULT:

Find the Result Analysis in “**Result3-Month versus Winning Number For Each Year.txt**”

1. The most frequent two numbers occurring together in a winning pick:
2. We maintain a HashMap where the key is the FirstNumber and the value is again a HashMap where the key is the Second number and the value the count
3. We iterate through the dataset fetched earlier and update this Hashmap as shown below:
4. Take each row from the dataset. This will have following value Date, Num1, Num2, Num3, Num4, Num5, Num6.
5. Maintain a list containing just the winning numbers.
6. Sort this list
7. Have 2 for loops: the first for loop will iterate through the first to the last numbers in the list. The second loop will iterate from the next item from which the first loop is iterating.
8. Maintain 3 global variables each storing the MaxCount, which is count of the winning number combination. winningNumber1, which is the first winning number of the combination. WinningNumber2, which is the second number of the combination
9. Now for each pair of winning numbers in the for loops check if it is count is > than MaxCount . If Yes, update the MaxCount, WinningNumber1 and WinningNumber2. Else, continue.
10. After going through all the loops and dataset, we will have our results stored in our three variables

RESULT:

**Maximum Count of two most frequent numbers is ‘39’ and the numbers are ‘12’ and ‘44’**