Exp.No.: 5a

Design and test various schema models to optimize data storage and retrieval Using Hive

Aim:

To Design and test various schema models to optimize data storage and retrieval Using Hbase.

Procedure:

Step 1: Start Hive

Open a terminal and start Hive by running:

$hive

Step 2: Create a Database

Create a new database in Hive: hive>CREATE DATABASE financials;

```
hive> CREATE DATABASE financials;
OK
Time taken: 0.063 seconds
```

Step 3: Use the Database*:*

Switch to the newly created database: hive>use financials;

```
hive> use financials;
OK
Time taken: 0.57 seconds
```

Step 4: Create a Table:

Create a simple table in your database:

hive>CREATE TABLE finance_table(id INT, name STRING);

```
hive> CREATE TABLE finance_table( id INT, name STRING );
OK
Time taken: 2.013 seconds
```

Step 5: Load Sample Data:

You can insert sample data into the table:

hive>INSERT INTO finance_tableVALUES (1, 'Alice'), (2, 'Bob'), (3, 'Charlie');

```
hive> INSERT INTO finance_table VALUES
    > (1,'Alice')
    > ,
    > (2,'Bob'),
    > (3,'Charlie');
Query ID = hadoop_20240911171244_304f3e60-6937-434c-acb2-d71be2797182
Total jobs = 3
Launching Job 1 out of 3
Number of reduce tasks determined at compile time: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapreduce.job.reduces=<number>
Job running in-process (local Hadoop)
2024-09-11 17:12:54,138 Stage-1 map = 0%,  reduce = 0%
2024-09-11 17:12:57,541 Stage-1 map = 100%,  reduce = 100%
Ended Job = job_local1825573535_0001
Stage-4 is selected by condition resolver.
Stage-3 is filtered out by condition resolver.
Stage-5 is filtered out by condition resolver.
Moving data to directory hdfs://localhost:9000/user/hive/warehouse/financials.db/finance_table/.hive-staging_hive_2024-
9-11_17-12-44_558_5675160086864575725-1/-ext-10000
Loading data to table financials.finance_table
MapReduce Jobs Launched:
Stage-Stage-1:  HDFS Read: 0 HDFS Write: 208 SUCCESS
Total MapReduce CPU Time Spent: 0 msec
OK
Time taken: 13.965 seconds
```

Step 6: Query Your Data

Use SQL-like queries to retrieve data from your table:

hive>CREATE VIEW myview AS SELECT name, id FROM finance_table;

```
hive> CREATE VIEW myview AS SELECT name, id FROM finance_table;
OK
Time taken: 0.244 seconds
```

Step 7: View the data:

*To see the data in the view, you would need to query the view hive>SELECT*FROM myview;*

```
hive> SELECT*FROM myview;
OK
Alice   1
Bob     2
Charlie 3
Time taken: 0.22 seconds, Fetched: 3 row(s)
```

Step 8: Describe a Table:

You can describe the structure of a table using the DESCRIBE command:

hive>DESCRIBE finance_table;

```
hive> DESCRIBE finance_table;
OK
id                      int
name                    string
age                     int
Time taken: 0.729 seconds, Fetched: 3 row(s)
```

Step 9: Alter a Table:

You can alter the table structure by adding a new column: hive>ALTER TABLE finance_table ADD COLUMNS (age INT);

```
hive> ALTER TABLE finance_table ADD COLUMNS (age INT);
OK
Time taken: 0.188 seconds
```

Step 10: Quit Hive: *To exit the Hive CLI, simply type: hive>quit;*

```
hive> quit;
hadoop@priyav-VirtualBox:~$
```

Result:

Thus, the usage of various commands in Hive has been successfully completed.