Experiment No.5
Create HIVE Database and Descriptive analytics-basic statistics.
Date of Performance: 14/09/2023
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Aim: Create HIVE Database and Descriptive analytics-basic statistics.

Theory:

Hive is a database technology that can define databases and tables to analyze structured data. The theme for structured data analysis is to store the data in a tabular manner, and pass queries to analyze it. This chapter explains how to create Hive database. Hive contains a default database named default.

Create Database Statement

Create Database is a statement used to create a database in Hive. A database in Hive is a namespace or a collection of tables. The syntax for this statement is as follows:

CREATE DATABASE|SCHEMA [IF NOT EXISTS] <database name>

Here, IF NOT EXISTS is an optional clause, which notifies the user that a database with the same name already exists. We can use SCHEMA in place of DATABASE in this command. The following query is executed to create a database named userdb:

hive> CREATE DATABASE [IF NOT EXISTS] userdb;

hive> CREATE SCHEMA userdb;

The following query is used to verify a databases list:

hive> SHOW DATABASES;

default userdb

Program:

The JDBC program to create a database is given below.

```
import    java.sql.SQLException;
import        java.sql.Connection;
import          java.sql.ResultSet;
```

```
import java.sql.Statement;
import java.sql.DriverManager;

public class HiveCreateDb {

   private static String driverName = "org.apache.hadoop.hive.jdbc.HiveDriver";


  public static void main(String[] args) throws SQLException {

    // Register driver and create driver instance


    Class.forName(driverName);

    // get connection


    Connection con =
DriverManager.getConnection("jdbc:hive://localhost:10000/default", "", "");

    Statement stmt = con.createStatement();


    stmt.executeQuery("CREATE DATABASE userdb");

    System.out.println("Database userdb created successfully.");



    con.close();

  }

}
```

Output:

Database userdb created successfully.

```
hive> SHOW DATABASES;
2023-10-02 16:14:49,020 INFO conf.HiveConf: Using the default value passed in for log id: 70073e24-e640-406e-9376-6316074738d3
2023-10-02 16:14:49,021 INFO session.SessionState: Updating thread name to 70073e24-e640-406e-9376-6316074738d3 main
2023-10-02 16:14:49,027 INFO ql.Driver: Compiling command(queryId=samar_20231002161449_940862b8-0e90-4d75-83ac-751114dcfe11): SHOW
 DATABASES
2023-10-02 16:14:49,043 INFO ql.Driver: Concurrency mode is disabled, not creating a lock manager
2023-10-02 16:14:49,046 INFO ql.Driver: Semantic Analysis Completed (retrial = false)
2023-10-02 16:14:49,046 INFO ql.Driver: Returning Hive schema: Schema(fieldSchemas:[FieldSchema(name:database_name, type:string, c
omment:from deserializer)], properties:null)
2023-10-02 16:14:49,048 INFO exec.ListSinkOperator: Initializing operator LIST_SINK[0]
2023-10-02 16:14:49,049 INFO ql.Driver: Completed compiling command(queryId=samar_20231002161449_940862b8-0e90-4d75-83ac-751114dcf
e11); Time taken: 0.023 seconds
2023-10-02 16:14:49,050 INFO reexec.ReExecDriver: Execution #1 of query
2023-10-02 16:14:49,050 INFO ql.Driver: Concurrency mode is disabled, not creating a lock manager
2023-10-02 16:14:49,051 INFO ql.Driver: Executing command(queryId=samar_20231002161449_940862b8-0e90-4d75-83ac-751114dcfe11): SHOW
 DATABASES
2023-10-02 16:14:49,052 INFO ql.Driver: Starting task [Stage-0:DDL] in serial mode
2023-10-02 16:14:49,054 INFO metastore.HiveMetaStore: 0: get_databases: @hive#
2023-10-02 16:14:49,054 INFO HiveMetaStore.audit: ugi=samar     ip=unknown-ip-addr      cmd=get_databases: @hive#
2023-10-02 16:14:49,065 INFO exec.DDLTask: results : 2
2023-10-02 16:14:49,069 INFO ql.Driver: Completed executing command(queryId=samar_20231002161449_940862b8-0e90-4d75-83ac-751114dcf
e11); Time taken: 0.018 seconds
OK
2023-10-02 16:14:49,070 INFO ql.Driver: OK
2023-10-02 16:14:49,074 INFO ql.Driver: Concurrency mode is disabled, not creating a lock manager
2023-10-02 16:14:49,079 INFO mapred.FileInputFormat: Total input files to process : 1
2023-10-02 16:14:49,083 INFO exec.ListSinkOperator: RECORDS_OUT_INTERMEDIATE:0, RECORDS_OUT_OPERATOR_LIST_SINK_0:2,
default
userdb
Time taken: 0.048 seconds, Fetched: 2 row(s)
2023-10-02 16:14:49,092 INFO CliDriver: Time taken: 0.048 seconds, Fetched: 2 row(s)
2023-10-02 16:14:49,093 INFO conf.HiveConf: Using the default value passed in for log id: 70073e24-e640-406e-9376-6316074738d3
2023-10-02 16:14:49,093 INFO session.SessionState: Resetting thread name to  main
hive>
```

CONCLUSION:

Hive provides a SQL-like interface for querying large datasets stored in distributed storage systems. It's commonly used in the Hadoop ecosystem for data warehousing and analytics. In this example, we created a Hive database, defined a table structure, loaded data into it, and performed basic descriptive analytics and statistics. Hive is powerful for handling big data, and the SQL-like syntax makes it accessible to users familiar with relational databases. The specific queries and analytics performed depend on the nature of data and the insights looking to gain.