Create tables in Hive and write queries to access the data in the table

AIM:

To create tables in Hive and write queries to access the data in the table.

PROCEDURE:

Installation of Hive:

1. Installing Apache Derby

Install Apache Derby 10.14.2.0

https://db.apache.org/derby/derby_downloads.html#For+Java+8+and+Higher

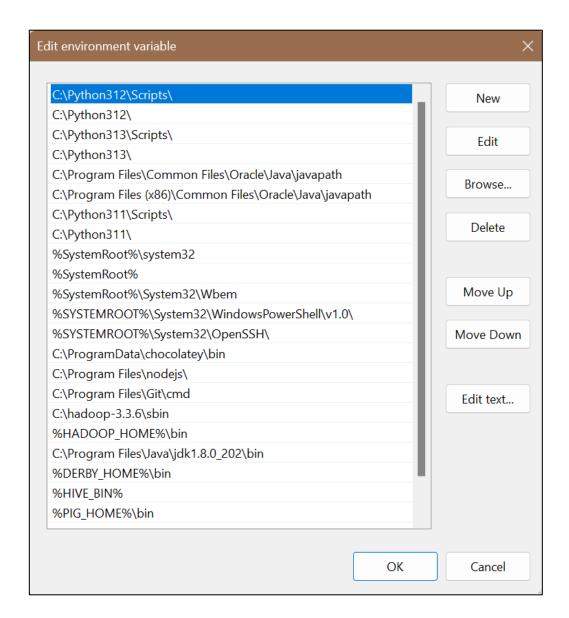
2. Downloading Apache Hive binaries

https://downloads.apache.org/hive/hive-3.1.2/

3. Setting environment variables

Variable	Value
HADOOP_HOME	C:\hadoop-3.3.6
HIVE_BIN	%HIVE_HOME%\bin
HIVE_HOME	C:\apache-hive-3.1.3-bin
HIVE_LIB	%HIVE_HOME%\lib

DERBY_HOME	C:\db-derby-10.14.2.0-bin
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3.1. Copy Derby libraries

we should go to the Derby libraries directory (db-derby-10.14.2.0\lib) and copy all *.jar files. Then, we should paste them within the Hive libraries directory.

3.2. Configuring hive-site.xml and Hive's Bin folder

Refer following link to download the file. Also download the guava file. Put hive-site.xml file to hive's conf location and replace hive's current guava file with this one in lib location. Also download the bin folder from link and replace the existing hive's bin folder.

https://1drv.ms/f/s!ArSg3Xpur4Grmw0SDqW0g44T7HYU?e=wDsoBn

4. Starting Hadoop Services

start-all.cmd

5. Derby Network Server: Run the following command in separate window to open Derby

StartNetworkServer -h 0.0.0.0

6. Starting Apache Hive

Go to Apache Hive's bin location with cd command and run the following command:

hive --service schematool -dbType derby -initSchema

7. Open Hive shell by typing:

hive

Create a Database:

Start by creating a database. Open the Hive CLI and follow the steps below:

1. Use the **CREATE DATABASE** statement to create a new database:

CREATE DATABASE sample;

2. Verify the database is present:

SHOW DATABASES:

3. Switch to the new database:

USE sample;

Create a Table in Hive

CREATE TABLE students (name STRING, roll INT, dept STRING);

Add Data

Run the **LOAD DATA LOCAL INPATH** command:

LOAD DATA INPATH

'/C:/Users/mercy/OneDrive/Documents/DataAnalytics/Hive/students.csv' WRITE INTO TABLE students;

List Hive Tables and Data

To show all tables in a selected database, use the following statement:

SHOW TABLES;

To show table column names and data types, run:

DESC students;

To display table data, use a **SELECT** statement. For example, to select everything in a table, run:

SELECT * FROM students;

OUTPUT:

```
C:\hive
SIF41: Class path contains multiple SIF40 bindings.
SIF41: Found binding in [jar:file:/C:/hadoop-3.3.6/share/hadoop/common/lib/sIf43-reload4j-1.7.36.jarl/org/sIf4j/impl/StaticLoggerBinder.class]
SIF41: Found binding in [jar:file:/C:/papache-hive-3.1.3-bin/lib/log4j-sIf4j-impl-2.17.1.jarl/org/sIf4j/impl/StaticLoggerBinder.class]
SIF41: See http://www.sIf45.org/codes.htmlmml/tiple_bindings for on explanation
SIF41: See http://www.sIF45.org/codes.htmlmml/tiple_bindings.for on explanation
SIF41: Actual binding is of type [org. sIF4]: impl. Reload4jloggerFactory]
SIF41: Actual binding is of type [org. sIF4]: impl. Reload4jloggerFactory]
SIF41: Actual binding is of type [org. sIF4]: impl. Reload4jloggerFactory]
SIF41: Actual binding is of type [org. sIF4]: impl. Reload4jloggerFactory]
SIF41: Actual binding is of type [org. sIF4]: impl. Reload4jloggerFactory]
SIF41: Actual binding is of type [org. sIF4]: impl. Reload4jloggerFactory]
SIF41: Actual binding is of type [org. sIF4]: impl. Reload4jloggerFactory]
SIF41: Actual binding is of type [org. sIF4]: impl. Reload4jloggerFactory]
SIF41: Actual binding is of type [org. sIF4]: impl. Reload4jloggerFactory]
SIF41: Actual binding is of type [org. siF4]: impl. Reload4jloggerFactory]
SIF41: Actual binding is of type [org. siF4]: Actual binding [org.
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AND DATABASES;

2024-08-26 20:02:59,895 INFO QLDriver: Compiling command(queryId=mercy_2024082509259_6F3736af-alb0-4590-9597-93f24ele4032): SHOW DATABASES

2024-08-26 20:02:59,695 INFO QLDriver: Concurrency mode is disabled, not creating a lock manager

2024-08-26 20:02:59,695 INFO QLDriver: Semantic Analysis Compileted (retrial = false)

2024-08-26 20:02:59,695 INFO QLDriver: Semantic Analysis Compileted (retrial = false)

2024-08-26 20:02:59,095 INFO QLDriver: Semantic Analysis Compileted (retrial = false)

2024-08-26 20:02:59,095 INFO QLDriver: Returning Hive schema: Schema (fieldSchemas:[FieldSchema(name:database_name, type:string, comment:from deserializer)], properties:null

2024-08-26 20:02:59,894 INFO QLDriver: Compileted compiling command(queryId=mercy_2024082620259_6f3736af-alb0-4590-9b97-93f24ele4032); Time taken: 0.77 seconds

2024-08-26 20:02:59,894 INFO QLDriver: Compileted compiling command(queryId=mercy_2024082620259_6f3736af-alb0-4590-9b97-93f24ele4032); SHOW DATABASES

2024-08-26 20:02:59,894 INFO QLDriver: Concurrency mode is disabled, not creating a lock manager

2024-08-26 20:02:59,894 INFO QLDriver: Starting task [Stage=CDUD] in serial mode

2024-08-26 20:02:59,895 INFO MINFO QLDriver: Starting task [Stage=CDUD] in serial mode

2024-08-26 20:02:59,896 INFO QLDriver: Starting task [Stage=CDUD] in serial mode

2024-08-26 20:02:59,896 INFO MINFO QLDriver: Completed executing command(queryId=mercy_20240826200259_6f3736af-alb0-4590-9b97-93f24ele4032); Time taken: 0.061 seconds

OK

2024-08-26 20:02:59,996 INFO QLDriver: Concurrency mode is disabled, not creating a lock manager

2024-08-26 20:02:59,999 INFO QLDriver: Concurrency mode is disabled, not creating a lock manager

2024-08-26 20:02:59,999 INFO QLDriver: Concurrency mode is disabled, not creating a lock manager

2024-08-26 20:02:59,999 INFO QLDriver: Concurrency mode is disabled, not creating a lock manager

2024-08-26 20:02:59,999 INFO QLDriver: Concurrency mode is disabled, not creating a lock manager

2024-08-26 20:02:59,999 INFO QLD
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hive USE sample

2824-88-26 20:85:59,795 INFO conf.HiveConf: Using the default value passed in for log id: 6cbblc57-f5d7-4a6e-9925-c62b4c956239
2824-88-26 20:85:59,795 INFO session.SessionState: Updating thread name to 6cbblc57-f5d7-4a6e-9925-c62b4c956239 main
2824-88-26 20:85:59,818 INFO ql.Driver: Compling command(queryId=mercy_20248826209559_3b4f6151-de3b-4a39-8d29-0fe40576237e): USE sample
2824-88-26 20:85:59,818 INFO ql.Driver: Concurrency mode is disabled, not creating a lock manager
2824-88-26 20:85:59,819 INFO metastore.HiveMetaStore: 0: get_database: ehiveMsample
2824-88-26 20:85:59,842 INFO ql.Driver: Semantic Analysis Completed (retrial = false)
2824-88-26 20:85:59,842 INFO ql.Driver: Semantic Analysis Completed (retrial = false)
2824-88-26 20:85:59,842 INFO ql.Driver: Returning Hive schema: Schema(fieldSchemas:null), properties:null)
2824-88-26 20:85:59,842 INFO ql.Driver: Completed compling command(queryId=mercy_20240826209559_3b4f6151-de3b-4a30-8d29-0fe40576237e); Time taken: 0:045 seconds
2824-88-26 20:85:59,845 INFO ql.Driver: concurrency mode is disabled, not creating a lock manager
2824-88-26 20:85:59,853 INFO ql.Driver: Execution fl of query
2824-88-26 20:85:59,853 INFO ql.Driver: Executing command(queryId=mercy_20240826209559_3b4f6151-de3b-4a30-8d29-0fe40576237e); USE sample
2824-88-26 20:85:59,853 INFO ql.Driver: Starting task [Stage-o:DOL] in serial mode
2824-88-26 20:85:59,853 INFO metastore.HiveMetaStore: 0: get_database: @hiveMsample
2824-88-26 20:85:59,853 INFO metastore.HiveMetaStore or get_database: @hiveMsample
2824-88-26 20:85:59,853 INFO metastore.HiveMetaStore or get_database: @hiveMsample
2824-88-26 20:85:59,853 INFO metastore.HiveMetaStore or get_d
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SQU-88-76 2019-08,762 INFO confi.HiveGorf. Using the default value passed in for log id: ecbbic57-f5d7-4a6e-9925-c62b4c956239
2024-08-26 2019-08,762 INFO session.SessionState: Updating throad name to 6cbbic57-f5d7-4a6e-9925-c62b4c956239 main
2024-08-26 2019-08,762 INFO session.SessionState: Updating throad name to 6cbbic57-f5d7-4a6e-9925-c62b4c956239 main
2024-08-26 2019-08,762 INFO session.SessionState: Updating throad name to 6cbbic57-f5d7-4a6e-9925-c62b4c956239 main
2024-08-26 2019-08,763 INFO q1.Driver: Concurrency mode is disabled, not creating a lock manager
2024-08-26 2019-08,763 INFO q1.Driver: Concurrency mode is disabled, not creating a lock manager
2024-08-26 2019-08,763 INFO q1.Driver: Concurrency mode is disabled, not creating a lock manager
2024-08-26 2019-08,763 INFO q1.Driver: Concurrency mode is disabled, not creating a lock manager
2024-08-26 2019-08,763 INFO q1.Driver: Concurrency mode is disabled, not creating a lock manager
2024-08-26 2019-08,763 INFO q1.Driver: Concurrency mode is disabled, not creating a lock manager
2024-08-26 2019-08,800 INFO q1.Driver: Concurrency mode is disabled, not creating a lock manager
2024-08-26 2019-08,807 INFO q1.Driver: Concurrency mode is disabled, not creating a lock manager
2024-08-26 2019-08,807 INFO metastore. HiveMetaStore (ETATORE_FILTER_HOOK will be ignored, since hive.security.authorization.nemager is set to instance of HiveMuthorizering
2024-08-26 2019-08,80 INFO metastore. HiveMetaStore (ETATORE_FILTER_HOOK will be ignored as a lock of congress of congr
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2024-08-26 20:10:09,162 INFO utils.FileUtils: Creating directory if it doesn't exist: hdfs://localhost:9000/user/hive/warehouse/sample.db/students
2024-08-26 20:10:09,718 INFO ql.Driver: Completed executing command(queryId=mercy_20240826201008_7d484479-9c70-407e-9b5b-ef577623a7de); Time taken: 0.831 seconds
OK.
2024-08-26 20:10:09,719 INFO ql.Driver: OK.
2024-08-26 20:10:09,720 INFO ql.Driver: Concurrency mode is disabled, not creating a lock manager
Time taken: 0.993 seconds
2024-08-26 20:10:09,722 INFO CliDriver: Time taken: 0.993 seconds
2024-08-26 20:10:09,723 INFO conf.HiveConf: Using the default value passed in for log id: 6cbb1c57-f5d7-4a6e-9925-c62b4c956239
2024-08-26 20:10:09,723 INFO session.SessionState: Resetting thread name to main
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No. 100 NYA LOCK 180AN '/C./Leen/mercy/OmpCn-w/Documents/Decadurallytics/New/students.co.' OsEDBETT 1NTO TREE students;
2024-88-20 30.9308,86 AS INFO continued the default with also passed in 60 lbg dis debalist? 5507-868-8021-0501299
2024-88-20 30.9308,86 DINO continued the continued the continued to continue the continuent the continuent the continuent the continuent the contin
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hive> SHOW TABLES;
2024-08-26 20:40:00,827 INFO conf.HiveConf: Using the default value passed in for log id: 6cbblc57-f5d7-4a6e-9925-c62b4c956239
2024-08-26 20:40:00,828 INFO session.SessionState: Updating thread name to 6cbblc57-f5d7-4a6e-9925-c62b4c956239 main
2024-08-26 20:40:00,836 INFO gl.Driver: Concurrency mode is disabled, not creating a lock manager
2024-08-26 20:40:00,865 INFO metastore.HiveMetastore: 0; get_database: @hiveMeample
2024-08-26 20:40:00,873 INFO ql.Driver: Semantic Analysis Completed (retrial = false)
2024-08-26 20:40:00,873 INFO ql.Driver: Returning Hive schema: schema(fieldSchemas:[FieldSchema(name:tab_name, type:string, comment:from deserializer)], properties:null)
2024-08-26 20:40:00,875 INFO reexec.ListSinkOperator: Initializing operator LIST_SINK[0]
2024-08-26 20:40:00,875 INFO reexec.ReExectiver: Execution #1 of query
2024-08-26 20:40:00,875 INFO metastor: Execution grommand(queryId=merry_20240826204000_a3d158d3-c6f2-47b4-8afd-7301c6420533); SHOW TABLES
2024-08-26 20:40:00,875 INFO metastor: Execution grommand(queryId=merry_20240826204000_a3d158d3-c6f2-47b4-8afd-7301c6420533); SHOW TABLES
2024-08-26 20:40:00,875 INFO ql.Driver: Execution grommand(queryId=merry_20240826204000_a3d158d3-c6f2-47b4-8afd-7301c6420533); Time taken: 0.046 seconds
2024-08-26 20:40:00,875 INFO ql.Driver: Execution grommand(queryId=merry_20240826204000_a3d158d3-c6f2-47b4-8afd-7301c6420533); Time taken: 0.041 seconds
2024-08-26 20:40:00,875 INFO ql.Driver: Oxider to the properties of the properties of the properties of the properties of the properties o
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Description of the property of
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hive> SELECT * FROM students;

2024-08-26 20:41:12,643 INFO conf.HiveConf: Using the default value passed in for log id: 6cbb1c57-f5d7-4a6e-9925-c62b4c956239

2024-08-26 20:41:12,643 INFO session.SessionState: Updating thread name to 6cbb1c57-f5d7-4a6e-9925-c62b4c956239 main

2024-08-26 20:41:12,643 INFO ql.Driver: Compiling command(queryId=mercy_20240826204112_4f6f657c-0e35-400c-9a40-f9a19709922d): SELECT * Fl

2024-08-26 20:41:12,663 INFO ql.Driver: Concurrency mode is disabled, not creating a lock manager

2024-08-26 20:41:12,663 INFO parse.CalcitePlanner: Starting Semantic Analysis

2024-08-26 20:41:12,691 INFO parse.CalcitePlanner: Completed phase 1 of Semantic Analysis

2024-08-26 20:41:12,691 INFO parse.CalcitePlanner: Get metadata for source tables

2024-08-26 20:41:12,693 INFO thiveMetaStore.HiveMetaStore: 0: get_table : tbl=hive.sample.students

2024-08-26 20:41:12,693 INFO thiveMetaStore.audit: ugi=mercy ip=unknown-ip-addr cmd=get_table : tbl=hive.sample.students

2024-08-26 20:41:12,751 INFO parse.CalcitePlanner: Get metadata for destination tables

2024-08-26 20:41:12,751 INFO parse.CalcitePlanner: Get metadata for destination tables

2024-08-26 20:41:12,751 INFO parse.CalcitePlanner: Get metadata for destination tables

2024-08-26 20:41:12,751 INFO parse.CalcitePlanner: Get metadata for destination tables

2024-08-26 20:41:12,751 INFO parse.CalcitePlanner: Get metadata for destination tables
```

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OK
2024-08-26 20:41:14,144 INFO ql.Driver: OK
2024-08-26 20:41:14,145 INFO ql.Driver: Concurrency mode is disabled, not creating a lock manager
2024-08-26 20:41:14,169 INFO mapred.FileInputFormat: Total input files to process: 1
2024-08-26 20:41:14,288 INFO lazy.LazyStruct: Missing fields! Expected 3 fields but only got 1! Ignoring similar problems.
2024-08-26 20:41:14,291 INFO exec.TableScanOperator: RECORDS_OUT_INTERMEDIATE:0, RECORDS_OUT_OPERATOR_TS_0:10,
2024-08-26 20:41:14,291 INFO exec.SelectOperator: RECORDS_OUT_INTERMEDIATE:0, RECORDS_OUT_OPERATOR_SEL_1:10,
2024-08-26 20:41:14,291 INFO exec.ListSinkOperator: RECORDS_OUT_INTERMEDIATE:0, RECORDS_OUT_OPERATOR_LIST_SINK_3:10,
name.poll.dept NULL NULL
Abhishek,110,CSE NULL NULL
Dev, 231,CSB NULL NULL
Dev, 231,CSB NULL NULL
Sonakshi,241,CSB NULL NULL
Sonakshi,241,CSB NULL NULL
Naina,336,IT NULL NULL
Naina,336,IT NULL NULL
Ranveer,511,ECE NULL NULL
Ranveer,511,ECE NULL NULL
Shani,521,ECE NULL NULL
Time taken: 1.5 seconds, Fetched: 10 row(s)
2024-08-26 20:41:14,321 INFO CliDriver: Time taken: 1.5 seconds, Fetched: 10 row(s)
2024-08-26 20:41:14,321 INFO conf.HiveConf: Using the default value passed in for log id: 6cbb1c57-f5d7-4a6e-9925-c62b4c956239
2024-08-26 20:41:14,321 INFO conf.HiveConf: Using the default value passed in for log id: 6cbb1c57-f5d7-4a6e-9925-c62b4c956239
2024-08-26 20:41:14,321 INFO conf.HiveConf: Using the default value passed in for log id: 6cbb1c57-f5d7-4a6e-9925-c62b4c956239
```

RESULT:

Thus to create tables in Hive and write queries to access the data in the table is completed successfully.