



## Department of Information Technology

A.Y. 2024-2025

Class: TY B.etch.-IT, Semester: VI Subject: Big Data Lab

### Experiment – 5: Programming exercises on Hadoop using Hive

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**Aim:** To perform programming exercise on Hive.

#### Objectives:

To understand Program applications using tools like Hive.

To implement Hive programming model.

**Outcomes:** After study of this experiment, the student will be able to Perform hands on Hive programming models.

**Prerequisite:** Core Java, Database concepts of SQL, Hadoop File system, and any of Linux operating system flavors.

**Requirements:** PC, Internet and VMWare software, Cloudera. **DDL**

#### Commands in Hive

1. Start Hive hive
2. Create Database  
CREATE DATABASE database\_name;
3. Show Database Command in Hive  
SHOW DATABASES;
4. Describe Database Command in Hive  
DESCRIBE DATABASE database\_name;
5. Alter Database Command in Hive  
ALTER DATABASE database\_name SET DBPROPERTIES ('property\_name'='value');
6. Use Database Command in Hive  
USE database\_name;
7. Drop Database in Hive  
DROP DATABASE database\_name;  
(If the database contains tables, use CASCADE to drop them as well)  
DROP DATABASE database\_name CASCADE;
8. Create Table Command in Hive  
CREATE TABLE table\_name ( id INT, name STRING, salary FLOAT  
)  
ROW FORMAT DELIMITED  
FIELDS TERMINATED BY ',';
9. Describe Table Command in Hive  
DESCRIBE table\_name;
10. Drop Table Command in Hive  
DROP TABLE table\_name;
11. Alter Table Command in Hive



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(Add a new column)

ALTER TABLE table\_name ADD COLUMNS (department STRING);

12. Show Table Command in Hive

SHOW TABLES;

13. Insert Command in Hive

(For inserting values into a table)

INSERT INTO TABLE table\_name VALUES (1, 'John', 50000.0);

14. Select Command in Hive

SELECT \* FROM table\_name;

15. Update Command in Hive

(Hive does not support UPDATE directly unless ACID properties are enabled. Instead, use INSERT OVERWRITE to update records.)

INSERT OVERWRITE TABLE table\_name SELECT \* FROM table\_name WHERE id != 1;

INSERT INTO table\_name VALUES (1, 'John', 55000.0); Output:

```
[training@mum15213cpu0213 ~]$ find hive
find: hive: No such file or directory
[training@mum15213cpu0213 ~]$ hive
Hive history file=/tmp/training/hive_job_log_training_202502250015_1555525060.txt
hive> create database Aryan
> show databases
> [training@mum15213cpu0213 ~]$
[training@mum15213cpu0213 ~]$ hive
Hive history file=/tmp/training/hive_job_log_training_202502250016_340839187.txt
hive> use default
>
>
>
> [training@mum15213cpu0213 ~]$
[training@mum15213cpu0213 ~]$ hive
Hive history file=/tmp/training/hive_job_log_training_202502250017_2094305415.txt
hive> SHOW DATABASES;
OK
bda
books
data1
db
default
employee
example
kriti
mobiloX
mom
stud
test
Time taken: 1.336 seconds
hive> CREATE DATABASE ARYAN;
OK
Time taken: 0.136 seconds
hive> SHOW DATABASES;
FAILED: Parse Error: line 1:5 Failed to recognize predicate 'DATABASES', Failed rule: 'kwRole' in show role grants
hive> USE ARYAN;
OK
Time taken: 0.022 seconds
hive> CREATE TABLE NAMES;
FAILED: Error in semantic analysis: Either list of columns or a custom serializer should be specified
hive> DESCRIBE DATABASE ARYAN;
FAILED: Parse Error: line 1:17 mismatched input 'ARYAN' expecting EOF near 'DATABASES'
```



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```
BSE`
hive> DESCRIBE DATABASE ARYAN;
OK
  aryan          hdfs://localhost/user/hive/warehouse/aryan.db
Time taken: 0.029 seconds
hive> ALTER DATABASE ARYAN SET DBPROPERTIES ('owner'='ADMIN');
OK
Time taken: 0.048 seconds
hive> USE DATABASE ARYAN;
FAILED: Parse Error: line 1:4 mismatched input 'DATABASE' expecting Identifier n
ear 'USE' in switch database statement

hive> USE ARYAN;
OK
Time taken: 0.0000 seconds
hive> DELETE DATABASE ARYAN
> [training@mum15213cpu0213 ~]$
[training@mum15213cpu0213 ~]$ HIVE
bash: HIVE: command not found
[training@mum15213cpu0213 ~]$ HIVE
bash: HIVE: command not found
[training@mum15213cpu0213 ~]$
[training@mum15213cpu0213 ~]$
[training@mum15213cpu0213 ~]$
[training@mum15213cpu0213 ~]$ hive
Hive history file=/tmp/training/hive_job_log_training_202502250022_1669121899.tx
t
hive> DELETE DATABASE ARYAN;
Usage: delete [FILE|JAR|ARCHIVE] <value> [<value>]*
hive>
Display all 387 possibilities? (y or n) [training@mum15213cpu0213 ~]$
[training@mum15213cpu0213 ~]$
[training@mum15213cpu0213 ~]$
[training@mum15213cpu0213 ~]$ hive
Hive history file=/tmp/training/hive_job_log_training_202502250023_756313880.txt
hive> drop database aryan;
FAILED: Parse Error: line 1:5 Failed to recognize predicate 'databse'. Failed ru
le: 'kwRole' in drop role

hive> DROP DATABASE ARYAN CASCADE;
FAILED: Parse Error: line 1:20 mismatched input 'CASCADE' expecting EOF near 'AR
YAN'

hive> DROP DATABASE ARYAN;
OK
Time taken: 1.093 seconds
hive> CREATE DATABASE EXAMPLE;
Failed with exception Database EXAMPLE already exists
FAILED: Execution Error, return code 1 from org.apache.hadoop.hive.ql.exec.DDLTa
sk
hive> CREATE DATABASE DEMO;
```



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```
OK
Time taken: 0.031 seconds
hive> USE DEMO;
OK
Time taken: 0.0060 seconds
hive> CREATE TABLE employees (
  id INT,
  name STRING,
  salary FLOAT
)
ROW FORMAT DELIMITED
FIELDS TERMINATED BY ','
STORED AS TEXTFILE;CREATE TABLE employees (
  id INT,
  name STRING,
  salary FLOAT
)
ROW FORMAT DELIMITED
FIELDS TERMINATED BY ','

[training@mum15213cpu0213 ~]$ HIVE
bash: HIVE: command not found
[training@mum15213cpu0213 ~]$ hive
Hive history file=/tmp/training/hive_job_log_training_202502250025_4176778.txt
hive> USE DEMO;
OK
Time taken: 1.002 seconds
hive> CREATE TABLE employee ( id INT, name STRING, salary FLOAT);
OK
Time taken: 0.26 seconds
hive> SHOW employee;
FAILED: Parse Error: line 1:5 Failed to recognize predicate 'employee'. Failed r
ule: 'kwRole' in show role grants

hive> SHOW TABLE employee;
FAILED: Parse Error: line 1:12 mismatched input 'employee' expecting EXTENDED ne
ar 'TABLE' in show statement

hive> DESCRIBE employee;
OK
id          int
name        string
salary      float
Time taken: 0.07 seconds
hive> ALTER TABLE employees ADD COLUMNS (department STRING);
Table employees does not exist
FAILED: Execution Error, return code 1 from org.apache.hadoop.hive.ql.exec.DDLTa
sk
hive> ALTER TABLE employee ADD COLUMNS (department STRING);
OK
```



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```
Time taken: 0.034 seconds
hive> INSERT INTO employee VALUES (1, 'John', 50000.0, 'CEO');
FAILED: Parse Error: line 1:7 mismatched input 'INTO' expecting OVERWRITE near '
INSERT' in insert clause

hive> [training@mum15213cpu0213 ~]$ hive
Hive history file=/tmp/training/hive_job_log_training_202502250029_80531071.txt
hive> SHOW TABLES;
OK
aaaa
abc
akash
akash1
example
example1
kriti
posts
sample
stud_records
stud_records1
test
Time taken: 1.112 seconds
hive> USE DEMO;
OK
Time taken: 0.0090 seconds
hive> SHOW TABLES;
OK
employee
Time taken: 0.025 seconds
hive> INSERT INTO employee VALUES (1, 'John', 50000.0, 'CEO');
FAILED: Parse Error: line 1:7 mismatched input 'INTO' expecting OVERWRITE near '
INSERT' in insert clause

hive> INSERT OVERWRITE employee VALUES (1, 'John', 50000.0, 'CEO');
FAILED: Parse Error: line 1:17 cannot recognize input near 'employee' 'VALUES' '
(' in destination specification

hive> INSERT INTO employee VALUES (1, 'John', 50000.0);
FAILED: Parse Error: line 1:7 mismatched input 'INTO' expecting OVERWRITE near '
INSERT' in insert clause

hive> INSERT INTO TABLE employee VALUES (1, 'John', 50000.0, 'CEO');
FAILED: Parse Error: line 1:7 mismatched input 'INTO' expecting OVERWRITE near '
INSERT' in insert clause

hive> DESCRIBE employee;
OK
id          int
name       string
salary     float
department string
```





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```
Hive history file=/tmp/training/hive_job_log_training_202502250057_1289004048.tx
t
hive> USE DEMO;
OK
Time taken: 1.016 seconds
hive> TRUNCATE TABLE employee;
FAILED: Parse Error: line 1:0 cannot recognize input near 'TRUNCATE' 'TABLE' 'em
ployee'

hive> TRUNCATE employee;
FAILED: Parse Error: line 1:0 cannot recognize input near 'TRUNCATE' 'employee'
'<EOF>'

hive> DROP TABLE employee;
OK
Time taken: 0.421 seconds
hive> CREATE TABLE employees (id INT,name STRING, salary FLOAT)ROW FORMAT DELIMI
TED FIELDS TERMINATED BY ',';
OK
Time taken: 0.07 seconds
hive> SHOW TABLES;
OK
employees
Time taken: 0.077 seconds
hive> DESCRIBE employees
> [training@mum15213cpu0213 ~]$
[training@mum15213cpu0213 ~]$ hive
Hive history file=/tmp/training/hive_job_log_training_202502250102_318652955.txt
hive> USE DEMO;
OK
Time taken: 0.956 seconds
hive> DESCRIBE employees;
OK
id          int
name        string
salary      float
Time taken: 0.202 seconds
hive> LOAD DATA LOCAL INPATH '/home/training/Desktop/data.csv' INTO TABLE employ
ees;
Copying data from file:/home/training/Desktop/data.csv
Copying file: file:/home/training/Desktop/data.csv
Loading data to table demo.employees
OK
Time taken: 0.211 seconds
hive> SELECT * FROM employees;
OK
NULL      name      NULL
1         Chinmay  50000.0
NULL      NULL      NULL
Time taken: 0.007 seconds
```

### B. Conclusion:

In this experiment, various Hive commands were executed to understand database management in Hive. The operations included creating and using databases, creating and modifying tables, inserting and retrieving data, and performing table alterations and deletions. Additionally, challenges related to Hive's syntax and constraints, such as issues with INSERT INTO, UPDATE, and DROP DATABASE CASCADE, were encountered and analyzed.

### c. References:

1. Link :- <https://www.dezyre.com/hadoop-tutorial/hive-commands>
2. <https://examples.javacodegeeks.com/enterprise-java/apache-hadoop/apache-hadoop-hive-tutorial/>
3. <https://www.javatpoint.com/hive>
4. [https://www.tutorialspoint.com/hive/hive\\_introduction.htm](https://www.tutorialspoint.com/hive/hive_introduction.htm)



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5. Alex Holmes "Hadoop in Practice", Manning Press, Dreamtech Press.
6. <https://www.dezyre.com/hadoop-tutorial/hive-commands>