Mini-MySQL

Banner ID: B00968316

[GitLab Assignment Link: https://git.cs.dal.ca/snehp/csci5408\_f23\_b00968316\_snehjayeshbhai\_patel](https://git.cs.dal.ca/snehp/csci5408_f23_b00968316_snehjayeshbhai_patel/-/blob/main/Lab3/lab3.sql)

Table of Contents

[Learning Objective-1 3](#_Toc149428658)

[Summary 3](#_Toc149428659)

[**Task A** 7](#_Toc149428660)

[**Authentication** 8](#_Toc149428661)

[**Task 2** 9](#_Toc149428662)

[**Create Database** 9](#_Toc149428663)

[**Use Database** 10](#_Toc149428664)

[**Create Table** 10](#_Toc149428665)

[**Insert** 11](#_Toc149428666)

[**Select** 12](#_Toc149428667)

[Delete 13](#_Toc149428668)

[**Update** 13](#_Toc149428669)

[Logs 14](#_Toc149428670)

[**Task 3** 15](#_Toc149428671)

[**Transaction** 15](#_Toc149428672)

[Test cases 17](#_Toc149428673)

List of Figures

[Figure 1 Authentication 9](#_Toc149428935)

[Figure 2UserData.txt 9](#_Toc149428936)

[Figure 3 UserData.txt Location 9](#_Toc149428937)

[Figure 4 SignUp 10](#_Toc149428938)

[Figure 5 Authentication 10](#_Toc149428939)

[Figure 6 Authentication Failed 10](#_Toc149428940)

[Figure 7 Captcha Faile 10](#_Toc149428941)

[Figure 8 Create Database 11](#_Toc149428942)

[Figure 9 Database Location 11](#_Toc149428943)

[Figure 10 create database Error 11](#_Toc149428944)

[Figure 11 Use database 12](#_Toc149428945)

[Figure 12 Create table 12](#_Toc149428946)

[Figure 13 create table error 1 12](#_Toc149428947)

[Figure 14 create table error 2 12](#_Toc149428948)

[Figure 15 create Table Location 13](#_Toc149428949)

[Figure 16 Insert query 13](#_Toc149428950)

[Figure 17 Insert Query Error 13](#_Toc149428951)

[Figure 18 Select 1 14](#_Toc149428952)

[Figure 19 Select 2 14](#_Toc149428953)

[Figure 20 Select 3 14](#_Toc149428954)

[Figure 21 Select 4 14](#_Toc149428955)

[Figure 22 Select 5 14](#_Toc149428956)

[Figure 23 Delete 1 15](#_Toc149428957)

[Figure 24 Update Query 15](#_Toc149428958)

[Figure 25 Transaction 1 17](#_Toc149428959)

[Figure 26 Transaction 2 17](#_Toc149428960)

[Figure 27 Exit 18](#_Toc149428961)

# **Task A**

* This is the first output we get after we run the program.

A screenshot of a computer

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Figure Authentication

* When we enter 2 it will ask for the username and password
* And, it will ask for the Captcha.
* If the Captcha is correct the username and the password will save in the userData.txt file in which the pass is hashed using MD5 algorithm

A screenshot of a computer program

Description automatically generatedFigure UserData.txt

A screenshot of a computer

Description automatically generated

Figure UserData.txt Location

## **Authentication**

* First, we have to sign up so that the user data can be stored in the userData.txt file.
* A black rectangular object with white text

  Description automatically generatedAfter signing up successfully we have to Login.

Figure SignUp

* While logging in if the username and password is not in the userData.txt it will not login.
* Authentication will also failed if the Captcha is Wrong.

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Figure Authentication

A black rectangular object with a black border

Description automatically generated

Figure Authentication Failed

A black rectangle with white dots

Description automatically generated

Figure Captcha Faile

# **Task 2**

## **Create Database**

* In order to create a table we can use “create database” Query to create a Data base
* This Query will create a folder in ./DBMS folder.



Figure Create Database

A screenshot of a computer

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Figure Database Location

* If the database is already created in past it will give error

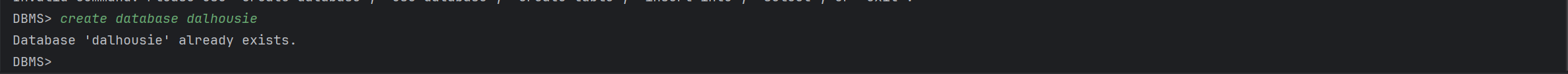


Figure create database Error

## **Use Database**

* We can use the database by writing “use” Query.

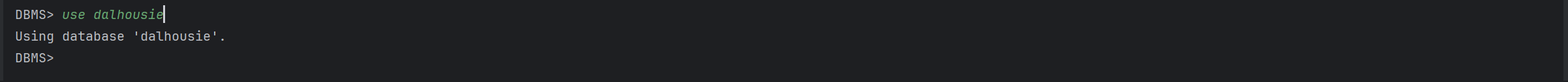


Figure Use database

## **Create Table**

* In Order to Create a table we can use “**create table tableName (Column1, Column2,…)”** Query
* It will create a .txt file in a database folder.
* It will give error if there is any syntax error.
* If the Table is already there it gives “Already Exist Error”.

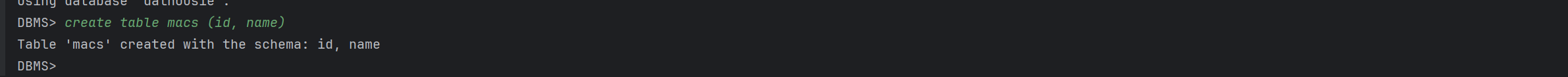


Figure Create table

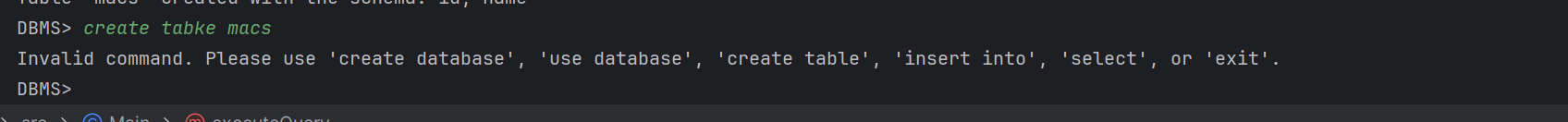


Figure create table error 1

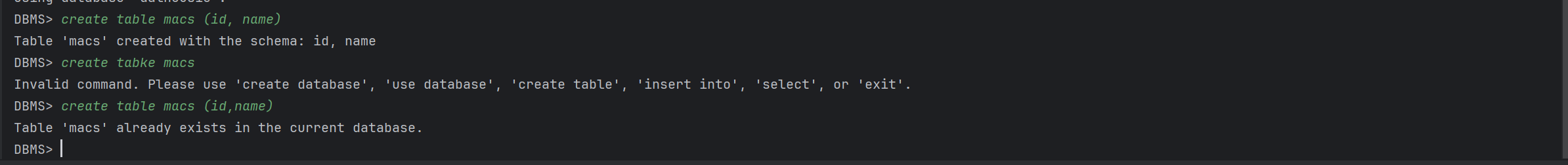


Figure create table error 2

A screenshot of a computer

Description automatically generatedFigure create Table Location

## **Insert**

* In order to insert the values in the table then we can use “insert into tableName Values(value1,value2,value3,…)
* It will give Error if there is any Synatax or the number of schema is not equal to values.



Figure Insert query

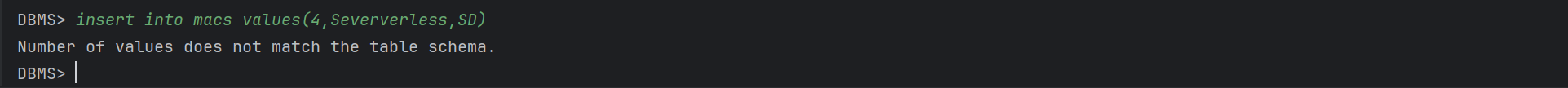


Figure Insert Query Error

## **Select**

* We can Display the the data stored in the table using Select Query As shown in figure
* We can use all the possible uses of Select Query like displaying a paticular column
* Where clause can also be used in select query.

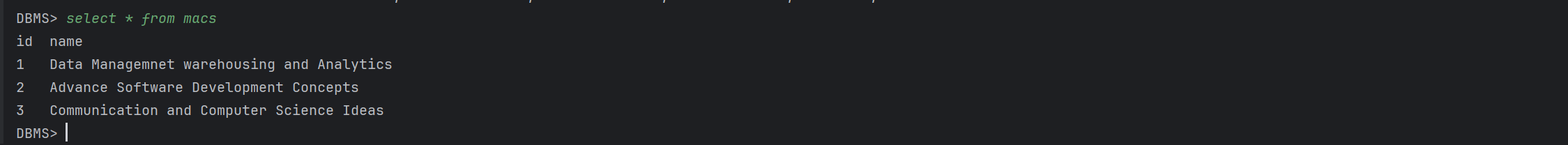


Figure Select 1



Figure Select 2

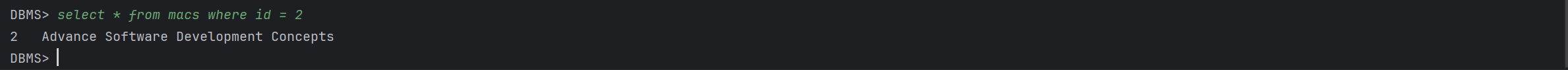


Figure Select 3

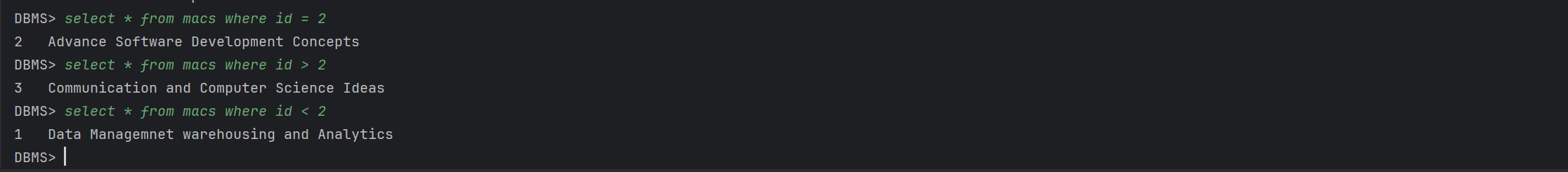


Figure Select 4

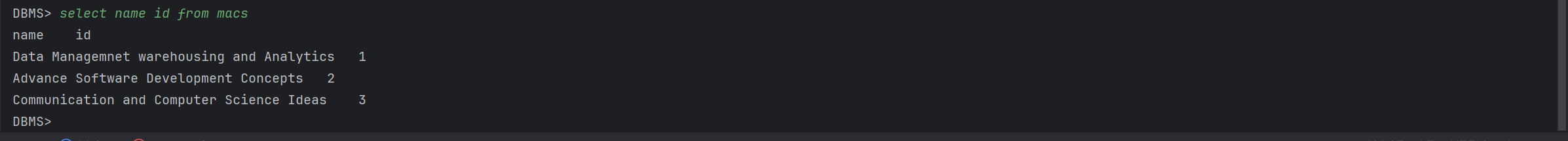


Figure Select 5

## Delete

* We can delete a particular row in a table using Delete Query.

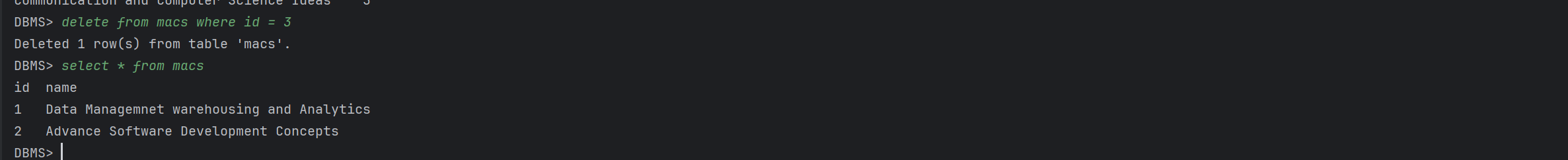


Figure Delete 1

## **Update**

* We can Update a particular row using a Update query.

A blurry image of a city

Description automatically generated

Figure Update Query

## Logs

All the logs are maintained in a log.txt File with the Query And time Stamp

A screen shot of a computer

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# **Task 3**

## **Transaction**

* Transaction can start using start transaction.
* It will create a Buffer folder in which all the changes are made until the commit happens.
* If the rollback happens then the buffer data will get deleted

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Figure Transaction 1

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Figure Transaction 2

**Exit**

* When we write exit it will close the console

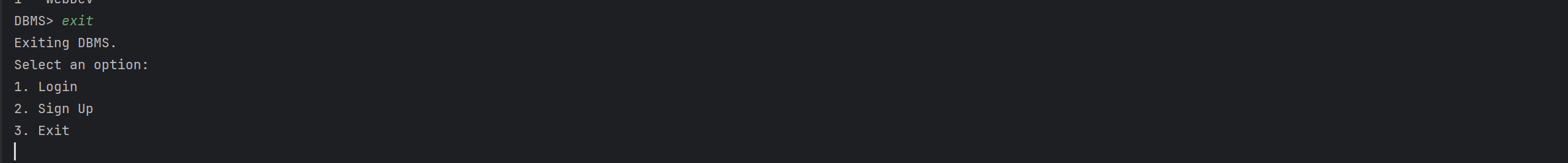
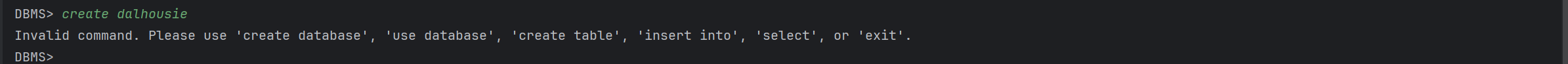


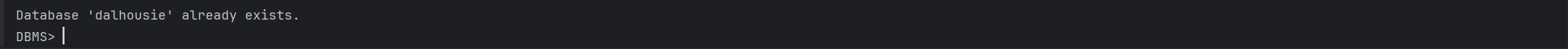
Figure Exit

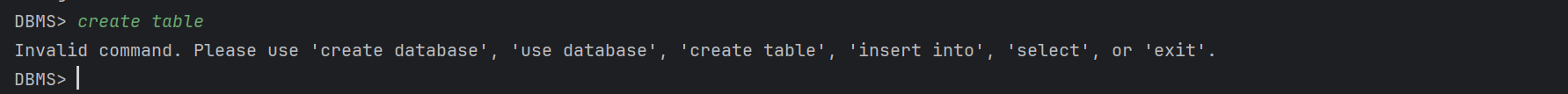
# Test cases

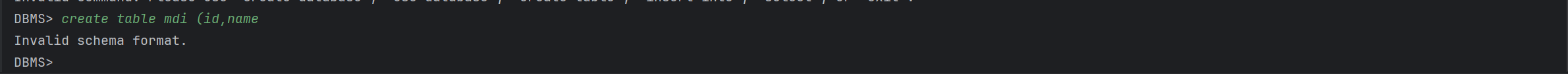
* These are the Test cases for every Query which are failing.

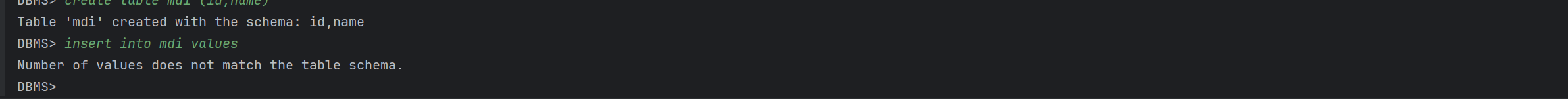


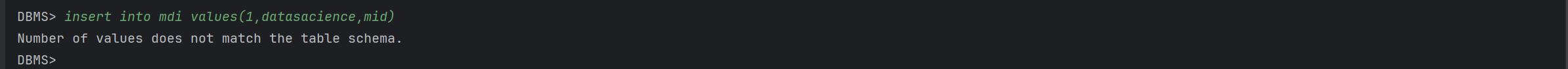


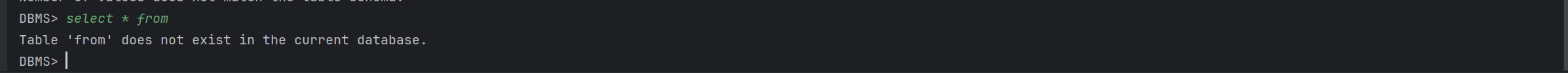


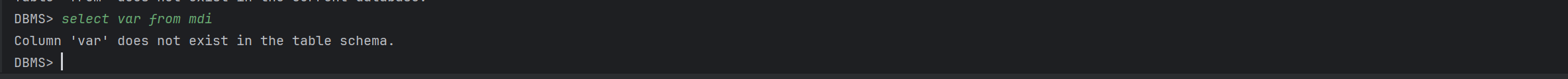


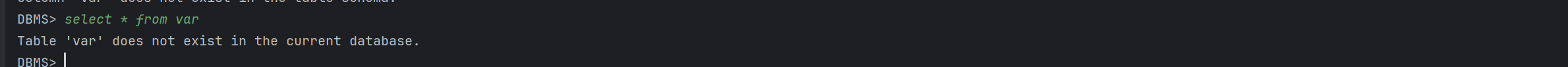


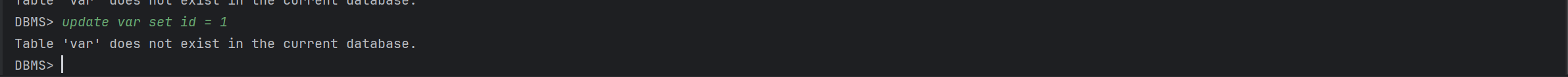


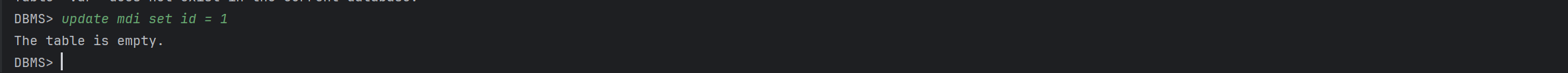


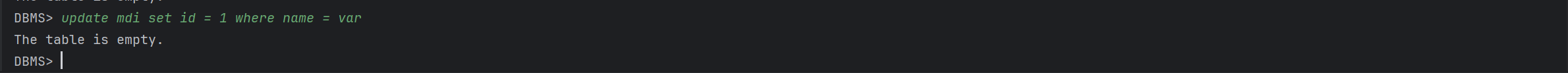














# References

[1]“World Economic Forum,” *World Economic Forum*. [Online]<https://www.weforum.org/publications/federated-data-systems-balancing-innovation-and-trust-in-the-use-of-sensitive-data> (accessed Oct. 29, 2023).

[2]

“Transaction recovery in federated distributed database systems,” ieeexplore.ieee.org. <https://ieeexplore.ieee.org/document/7068178> (accessed Oct. 28, 2023).

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