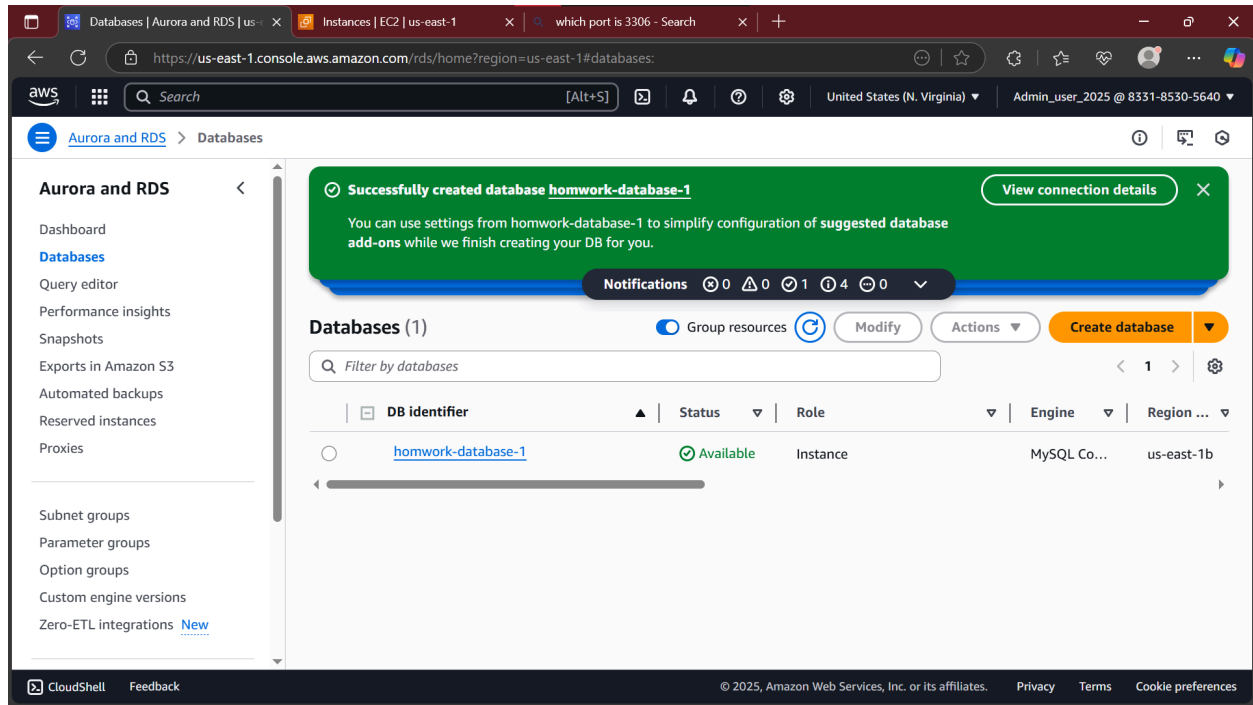


# AWS Cloud & DevOps

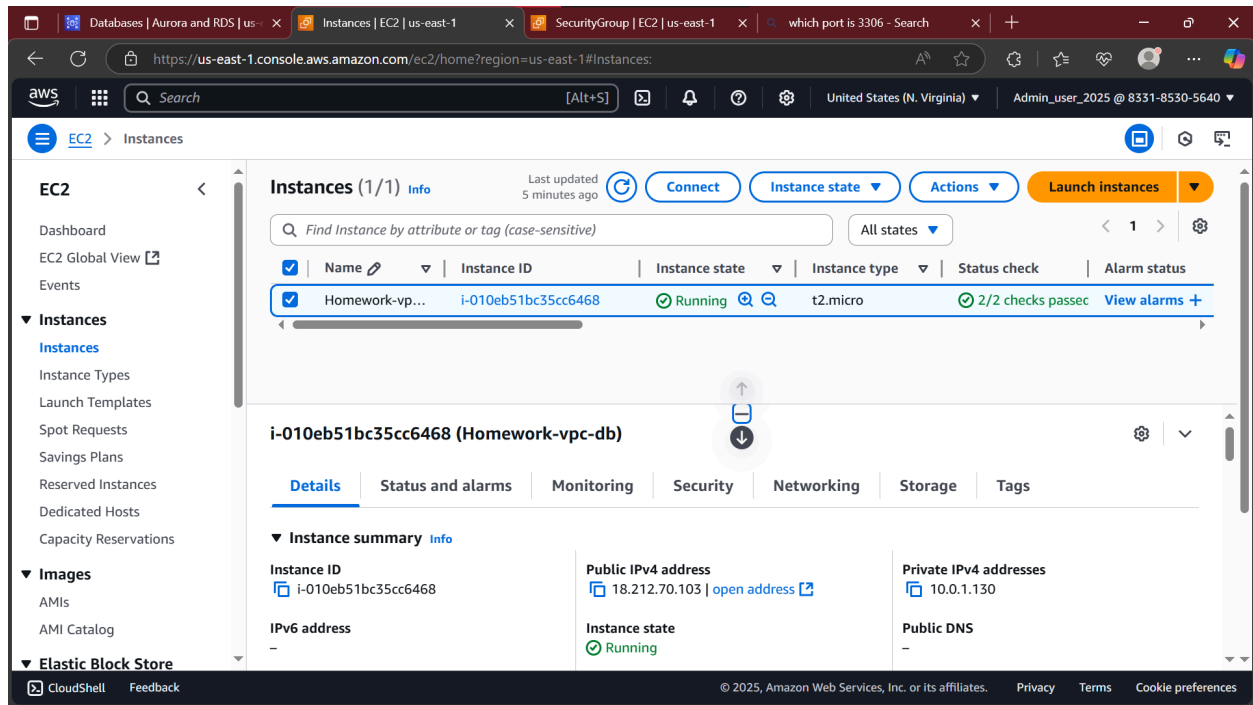
Ebubechukwu Azozie

HomeWork :

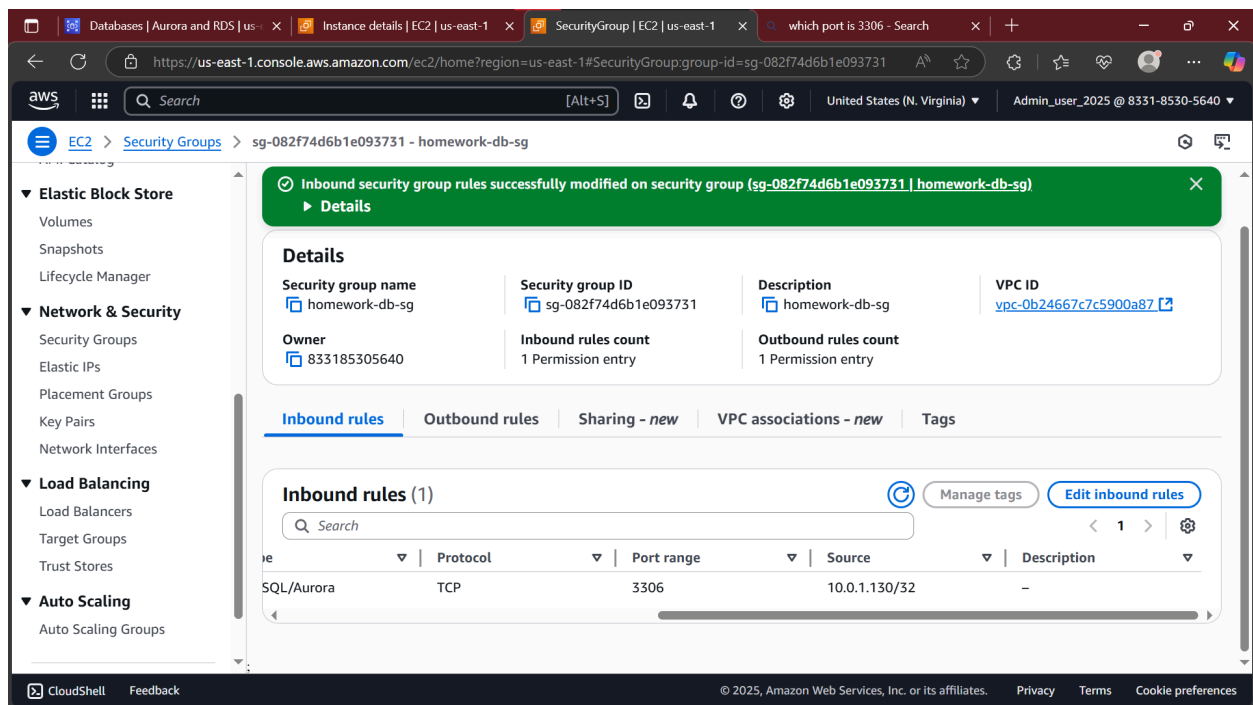
Create a MySQL RDS DB instance (using the free tier)



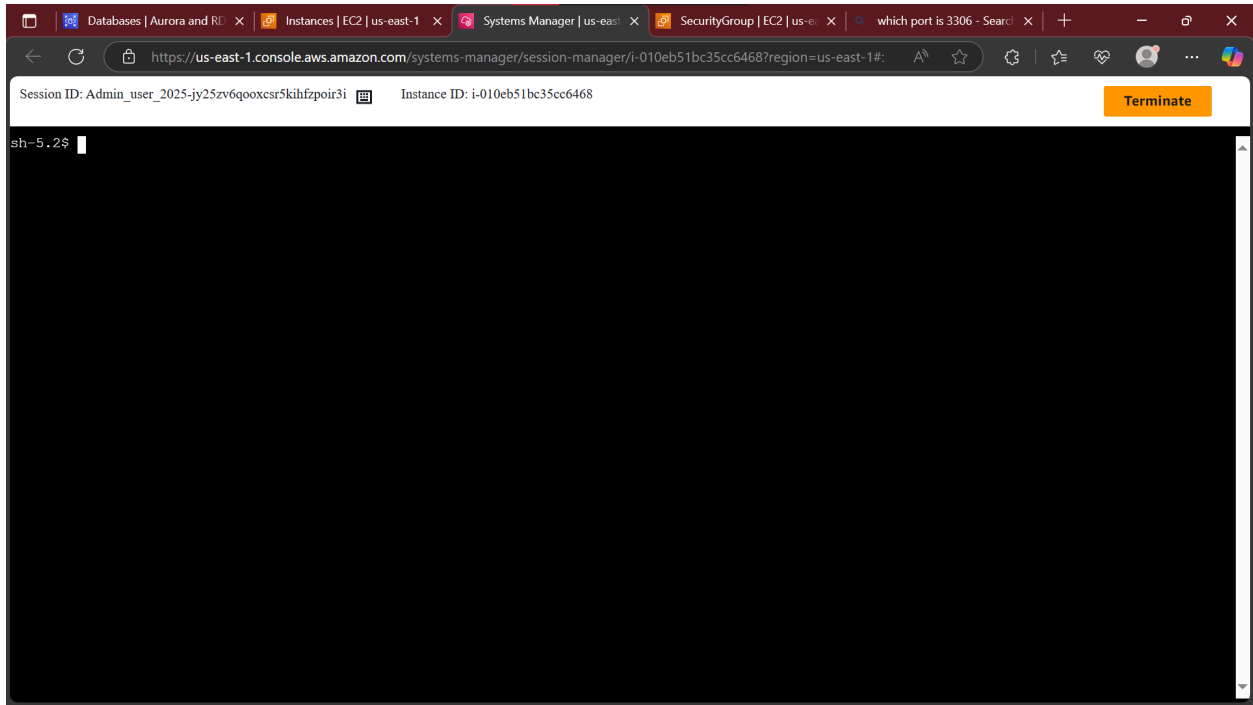
## Connect to your database using an EC2 or MySQL Workbench (Share screenshot)



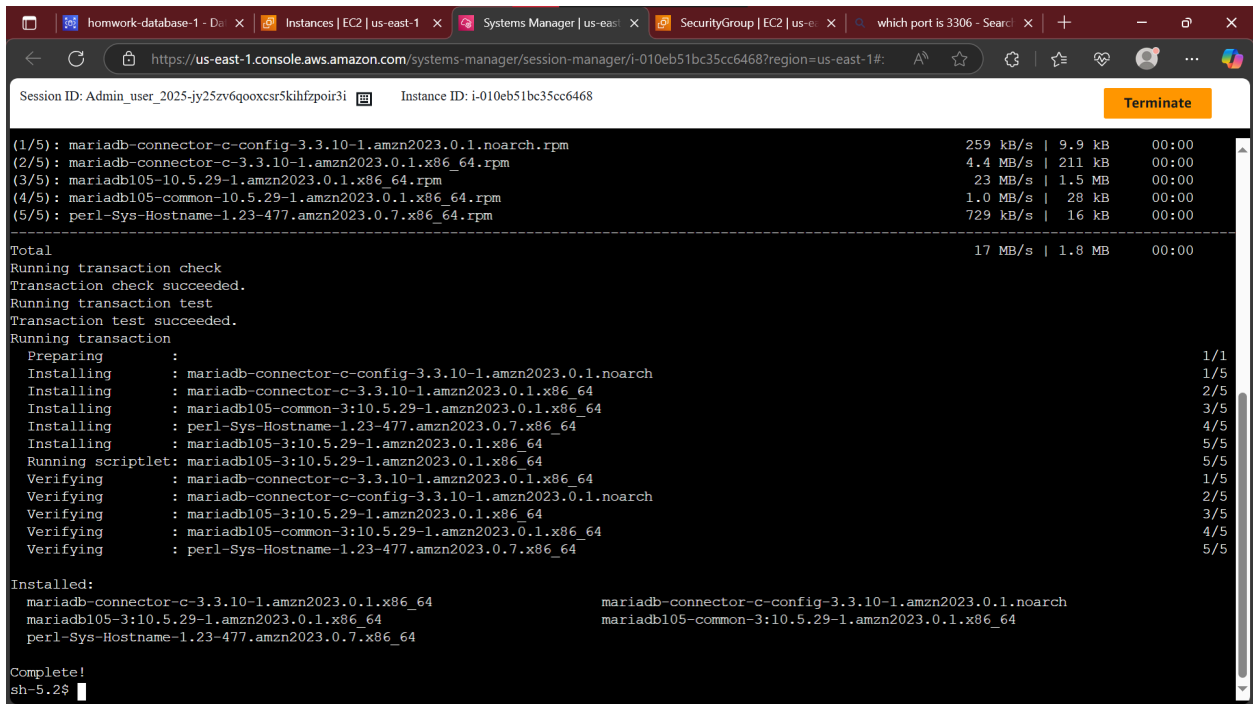
EC2 instance created



Allowing the private network of the instance to get into the database security group



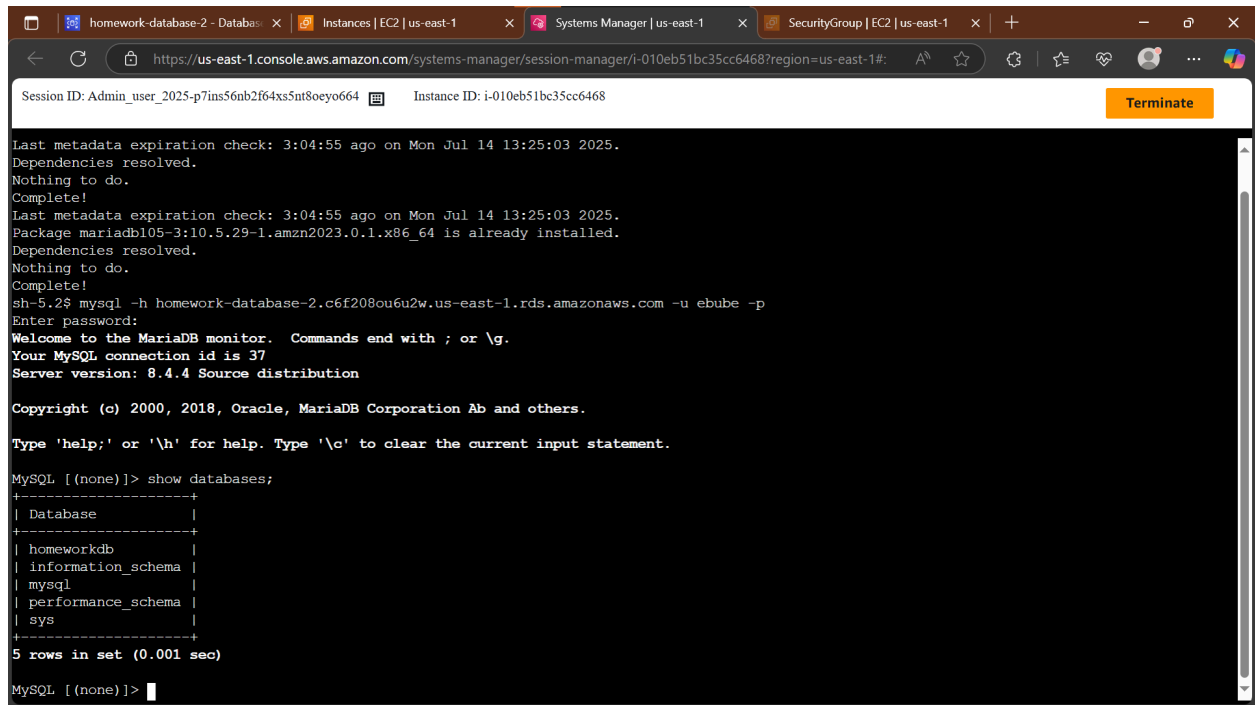
Connected to my session manager



Installed mysql to the server using the command line:

sudo yum update -y

sudo yum install mariadb105 -y

The image shows a screenshot of an AWS Systems Manager session manager window. The browser tabs at the top include 'homework-database-2 - Databases', 'Instances | EC2 | us-east-1', 'Systems Manager | us-east-1', and 'SecurityGroup | EC2 | us-east-1'. The address bar shows the URL 'https://us-east-1.console.aws.amazon.com/systems-manager/session-manager/i-010eb51bc35cc6468?region=us-east-1#'. The session ID is 'Admin\_user\_2025-p7ins56nb2f64xs5nt8oeoyo664' and the instance ID is 'i-010eb51bc35cc6468'. A 'Terminate' button is visible in the top right corner. The terminal output shows the following text:

```
Last metadata expiration check: 3:04:55 ago on Mon Jul 14 13:25:03 2025.
Dependencies resolved.
Nothing to do.
Complete!
Last metadata expiration check: 3:04:55 ago on Mon Jul 14 13:25:03 2025.
Package mariadb105-3:10.5.29-1.amzn2023.0.1.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
sh-5.2$ mysql -h homework-database-2.c6f208ou6u2w.us-east-1.rds.amazonaws.com -u ebube -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 37
Server version: 8.4.4 Source distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MySQL [(none)]> show databases;
+-----+
| Database |
+-----+
| homeworkdb |
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.001 sec)

MySQL [(none)]>
```

I successfully logged into the database using the command line below:

```
mysql -h homework-database-2.c6f208ou6u2w.us-east-1.rds.amazonaws.com -u ebube -p
```

homework-database-2.c6f208ou6u2w.us-east-1.rds.amazonaws.com

I used ebube since ebube was my database username instead of admin

Also showing the database inside with the command line:

show databases;

## Create a read replica of your RDS DB instance

The screenshot shows the AWS Management Console for the 'Aurora and RDS' section. A blue notification banner at the top states: 'Creating replica homework-database-readreplica in US East (N. Virginia). Your database might take a few minutes to launch.' Below this, the 'Databases (2)' table lists two instances:

DB identifier	Status	Role	Engine	Region
homework-database-2	Available	Primary	MySQL Co...	us-east-1a
homework-database-readreplica	Creating	Replica	MySQL Co...	-

The left sidebar contains navigation links for Dashboard, Databases, Query editor, Performance insights, Snapshots, Exports in Amazon S3, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Custom engine versions, and Zero-ETL integrations. The bottom of the console shows the URL: `https://us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#databases:` and the footer with copyright information for Amazon Web Services, Inc.

## Read replica created

The screenshot shows the AWS Management Console for the 'Aurora and RDS' section. A green notification banner at the top states: 'Successfully created replica homework-database-readreplica in US East (N. Virginia)'. Below this, the 'Databases (2)' table lists two instances:

DB identifier	Status	Role	Engine	Region
homework-database-2	Available	Primary	MySQL Co...	us-east-1a
homework-database-readreplica	Available	Replica	MySQL Co...	us-east-1b

The left sidebar contains navigation links for Dashboard, Databases, Query editor, Performance insights, Snapshots, Exports in Amazon S3, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Custom engine versions, and Zero-ETL integrations. The bottom of the console shows the URL: `https://us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#databases:` and the footer with copyright information for Amazon Web Services, Inc.

## Read replica database now available

Aurora and RDS | us-east-1

Instances | EC2 | us-east-1

Systems Manager | us-east-1

SecurityGroup | EC2 | us-east-1

https://us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#database-id=homework-database-readreplica;is-...

aws Search [Alt+S]

United States (N. Virginia)

Admin\_user\_2025 @ 8331-8530-5640

Aurora and RDS

Databases

homework-database-2

homework-database-readreplica

Aurora and RDS

Databases

Query editor

Performance insights

Snapshots

Exports in Amazon S3

Automated backups

Reserved instances

Proxies

Subnet groups

Parameter groups

Option groups

Custom engine versions

Zero-ETL integrations [New](#)

Successfully created replica homework-database-readreplica in US East (N. Virginia)

homework-database-readreplica

Modify

Actions

Related

Filter by databases

DB identifier

Status

Role

Engine

Region ...

Size

homework-database-2

Available

Primary

MySQL Co...

us-east-1a

db.m7g.la...

homework-database-readreplica

Available

Replica

MySQL Co...

us-east-1b

db.m7g.la...

Connectivity & security

Monitoring

Logs & events

Configuration

Zero-ETL integrations

Database Insights is now available

Database Insights combines database metrics and logs into a unified view in CloudWatch to speed up database troubleshooting. For enhanced monitoring capabilities and advanced analytics, modify your database to use the Advanced mode of Database Insights

Modify

Type here to search

29°C Mostly sunny

2:39 PM 2025-07-14

Create a table (using the SQL commands we used during the class. See script below) in your main DB instance and confirm that it's replicating in the Read-replica (Share screenshot)

\*\*\*\*\*THE BELOW SCRIPT WAS USED DURING CLASS\*\*\*\*\*

```
EC2 > sudo dnf update -y

sudo dnf install mariadb105

mysql -h database-1.cgjrkqx47sar.us-east-1.rds.amazonaws.com -u admin -p

show databases;

use <enter_database_name>;

show tables;

CREATE TABLE student_table(

    id int NOT NULL AUTO_INCREMENT,

    name varchar(45) NOT NULL,

    cluster varchar(35) NOT NULL,

    gender varchar(45) NOT NULL,

    PRIMARY KEY (id)

);

insert into student_table(id,name,cluster,gender) VALUES
(1,'Francoise','Fox','Female'), (2,'Sara','Fox','Female'),
(3,'Danielle','Fox','Female'), (4,'Safa','Fox','Female'),
(5,'Bi','Fox','Male'), (6,'Soho','Fox','Male'), (7,'Patrick','Fox','Male'),
(8,'Abdulaziz','Fox','Male'), (9,'Andre','Cheetah','Male'),
(10,'Achille','Cheetah','Male'), (46,'Moise','Cheetah','Male'),
(11,'Kady','Cheetah','Female'), (12,'Kady','Cheetah','Female'),
(13,'Abdoulaye','Jaguar','Male'), (14,'Odilon','Jaguar','Male'),
(15,'Narcisse','Jaguar','Male'), (16,'Emma','Jaguar','Male'),
(17,'Nasser','Jaguar','Male'), (18,'Martial','Jaguar','Male'),
(19,'Epee','Jaguar','Male'), (20,'Alain','Leopard','Male'),
```

```
(21,'Guy','Leopard','Male'), (22,'Daniel','Leopard','Male'),  
(23,'Soke','Leopard','Male'), (24,'Oumou','Leopard','Female'),  
(25,'Franck','Lion','Male'), (26,'Marwan','Lion','Male'),  
(27,'Rayyan','Lion','Male'), (28,'Armand','Lion','Male'),  
(29,'Sylvanus','Lion','Male'), (30,'King','Panther','Male'),  
(31,'Nelie','Panther','Female'), (32,'Vanessa','Panther','Female'),  
(33,'Akim','Puma','Male'), (34,'Vanel','Puma','Male'),  
(35,'Eric','Puma','Male'), (36,'Gaitan','Puma','Male'),  
(37,'Bilal','Tiger','Male'), (38,'Fabrice','Tiger','Male'),  
(39,'Taibou','Tiger','Female'), (40,'Bouba','Wolf','Male'),  
(41,'Anicet','Wolf','Male'), (42,'Fredy','Wolf','Male'),  
(43,'Yonis','Wolf','Male'), (44,'Rosaria','Wolf','Female'),  
(45,'Estelle','Wolf','Female');
```

```
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

```
MySQL [(none)]> show databases;
```

```
+-----+  
| Database |  
+-----+  
| homeworkdb |  
| information_schema |  
| mysql |  
| performance_schema |  
| sys |  
+-----+
```

```
5 rows in set (0.001 sec)
```

```
MySQL [(none)]> use homeworkdb;
```

```
Database changed
```

```
MySQL [homeworkdb]>
```

Logged into the database with the command:

Use homeworkdb;



```
homework-database-2 - Databases | Instances | EC2 | us-east-1 | Systems Manager | us-east-1 | SecurityGroup | EC2 | us-east-1 | + | - | X
https://us-east-1.console.aws.amazon.com/systems-manager/session-manager/i-010eb51bc35cc6468?region=us-east-1#
Session ID: Admin_user_2025-p7ins56nb2f64xs5nt8oeyo664 Instance ID: i-010eb51bc35cc6468 Terminate

| performance_schema |
| sys |
+-----+
5 rows in set (0.001 sec)

MySQL [(none)]> use homeworkdb;
Database changed
MySQL [homeworkdb]> CREATE TABLE student_table(
-> id int NOT NULL AUTO_INCREMENT,
-> name varchar(45) NOT NULL,
-> cluster varchar(35) NOT NULL,
-> gender varchar(45) NOT NULL,
-> PRIMARY KEY (id)
-> );
Query OK, 0 rows affected (0.046 sec)

MySQL [homeworkdb]>
MySQL [homeworkdb]> show tables;
+-----+
| Tables_in_homeworkdb |
+-----+
| student_table |
+-----+
1 row in set (0.002 sec)

MySQL [homeworkdb]>
```

Table created and a view of the table

```
homework-database-2 - Databases | Instances | EC2 | us-east-1 | Systems Manager | us-east-1 | SecurityGroup | EC2 | us-east-1 | + | - | X
https://us-east-1.console.aws.amazon.com/systems-manager/session-manager/i-010eb51bc35cc6468?region=us-east-1#
Session ID: Admin_user_2025-p7ins56nb2f64xs5nt8oeyo664 Instance ID: i-010eb51bc35cc6468 Terminate

-> (18, 'Martial', 'Jaguar', 'Male'),
-> (19, 'Epee', 'Jaguar', 'Male'),
-> (20, 'Alain', 'Leopard', 'Male'),
-> (21, 'Guy', 'Leopard', 'Male'),
-> (22, 'Daniel', 'Leopard', 'Male'),
-> (23, 'Soke', 'Leopard', 'Male'),
-> (24, 'Oumou', 'Leopard', 'Female'),
-> (25, 'Franck', 'Lion', 'Male'),
-> (26, 'Marwan', 'Lion', 'Male'),
-> (27, 'Rayyan', 'Lion', 'Male'),
-> (28, 'Armand', 'Lion', 'Male'),
-> (29, 'Sylvanus', 'Lion', 'Male'),
-> (30, 'King', 'Panther', 'Male'),
-> (31, 'Nelie', 'Panther', 'Female'),
-> (32, 'Vanessa', 'Panther', 'Female'),
-> (33, 'Akim', 'Puma', 'Male'),
-> (34, 'Vanel', 'Puma', 'Male'),
-> (35, 'Eric', 'Puma', 'Male'),
-> (36, 'Gaitan', 'Puma', 'Male'),
-> (37, 'Bilal', 'Tiger', 'Male'),
-> (38, 'Fabrice', 'Tiger', 'Male'),
-> (39, 'Taibou', 'Tiger', 'Female'),
-> (40, 'Bouba', 'Wolf', 'Male'),
-> (41, 'Anicet', 'Wolf', 'Male'),
-> (42, 'Fredy', 'Wolf', 'Male'),
-> (43, 'Yonis', 'Wolf', 'Male'),
-> (44, 'Rosaria', 'Wolf', 'Female'),
-> (45, 'Estelle', 'Wolf', 'Female');
Query OK, 46 rows affected (0.013 sec)
Records: 46 Duplicates: 0 Warnings: 0

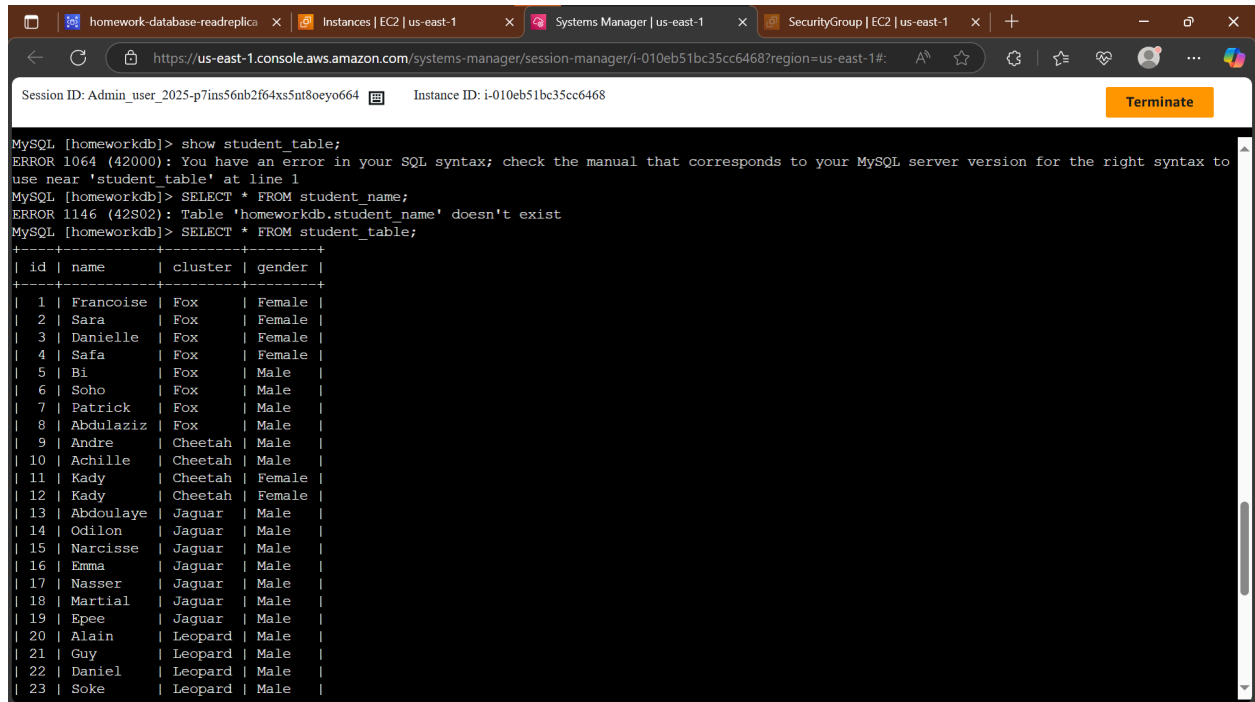
MySQL [homeworkdb]>
```

Added data into the table using this command line:

```
INSERT INTO student_table (id, name, cluster, gender) VALUES
```

```
(1, 'Francoise', 'Fox', 'Female'),
(2, 'Sara', 'Fox', 'Female'),
(3, 'Danielle', 'Fox', 'Female'),
(4, 'Safa', 'Fox', 'Female'),
(5, 'Bi', 'Fox', 'Male'),
(6, 'Soho', 'Fox', 'Male'),
(7, 'Patrick', 'Fox', 'Male'),
(8, 'Abdulaziz', 'Fox', 'Male'),
(9, 'Andre', 'Cheetah', 'Male'),
(10, 'Achille', 'Cheetah', 'Male'),
(46, 'Moise', 'Cheetah', 'Male'),
(11, 'Kady', 'Cheetah', 'Female'),
(12, 'Kady', 'Cheetah', 'Female'),
(13, 'Abdoulaye', 'Jaguar', 'Male'),
(14, 'Odilon', 'Jaguar', 'Male'),
(15, 'Narcisse', 'Jaguar', 'Male'),
(16, 'Emma', 'Jaguar', 'Male'),
(17, 'Nasser', 'Jaguar', 'Male'),
(18, 'Martial', 'Jaguar', 'Male'),
(19, 'Epee', 'Jaguar', 'Male'),
(20, 'Alain', 'Leopard', 'Male'),
(21, 'Guy', 'Leopard', 'Male'),
(22, 'Daniel', 'Leopard', 'Male'),
(23, 'Soke', 'Leopard', 'Male'),
(24, 'Oumou', 'Leopard', 'Female'),
(25, 'Franck', 'Lion', 'Male'),
(26, 'Marwan', 'Lion', 'Male'),
(27, 'Rayyan', 'Lion', 'Male'),
(28, 'Armand', 'Lion', 'Male'),
(29, 'Sylvanus', 'Lion', 'Male'),
(30, 'King', 'Panther', 'Male'),
(31, 'Nelie', 'Panther', 'Female'),
(32, 'Vanessa', 'Panther', 'Female'),
(33, 'Akim', 'Puma', 'Male'),
(34, 'Vanel', 'Puma', 'Male'),
(35, 'Eric', 'Puma', 'Male'),
(36, 'Gaitan', 'Puma', 'Male'),
(37, 'Bilal', 'Tiger', 'Male'),
(38, 'Fabrice', 'Tiger', 'Male'),
(39, 'Taibou', 'Tiger', 'Female'),
(40, 'Bouba', 'Wolf', 'Male'),
(41, 'Anicet', 'Wolf', 'Male'),
(42, 'Fredy', 'Wolf', 'Male'),
```

```
(43, 'Yonis', 'Wolf', 'Male'),  
(44, 'Rosaria', 'Wolf', 'Female'),  
(45, 'Estelle', 'Wolf', 'Female');
```



The screenshot shows a terminal window within an AWS Systems Manager session. The terminal displays the following commands and output:

```
MySQL [homeworkdb]> show student_table;  
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to  
use near 'student table' at line 1  
MySQL [homeworkdb]> SELECT * FROM student_name;  
ERROR 1146 (42S02): Table 'homeworkdb.student_name' doesn't exist  
MySQL [homeworkdb]> SELECT * FROM student_table;
```

id	name	cluster	gender
1	Francoise	Fox	Female
2	Sara	Fox	Female
3	Danielle	Fox	Female
4	Safa	Fox	Female
5	Bi	Fox	Male
6	Soho	Fox	Male
7	Patrick	Fox	Male
8	Abdulaziz	Fox	Male
9	Andre	Cheetah	Male
10	Achille	Cheetah	Male
11	Kady	Cheetah	Female
12	Kady	Cheetah	Female
13	Abdoulaye	Jaguar	Male
14	Odilon	Jaguar	Male
15	Narcisse	Jaguar	Male
16	Emma	Jaguar	Male
17	Nasser	Jaguar	Male
18	Martial	Jaguar	Male
19	Epee	Jaguar	Male
20	Alain	Leopard	Male
21	Guy	Leopard	Male
22	Daniel	Leopard	Male
23	Soke	Leopard	Male

Viewing items in the table with the command line:

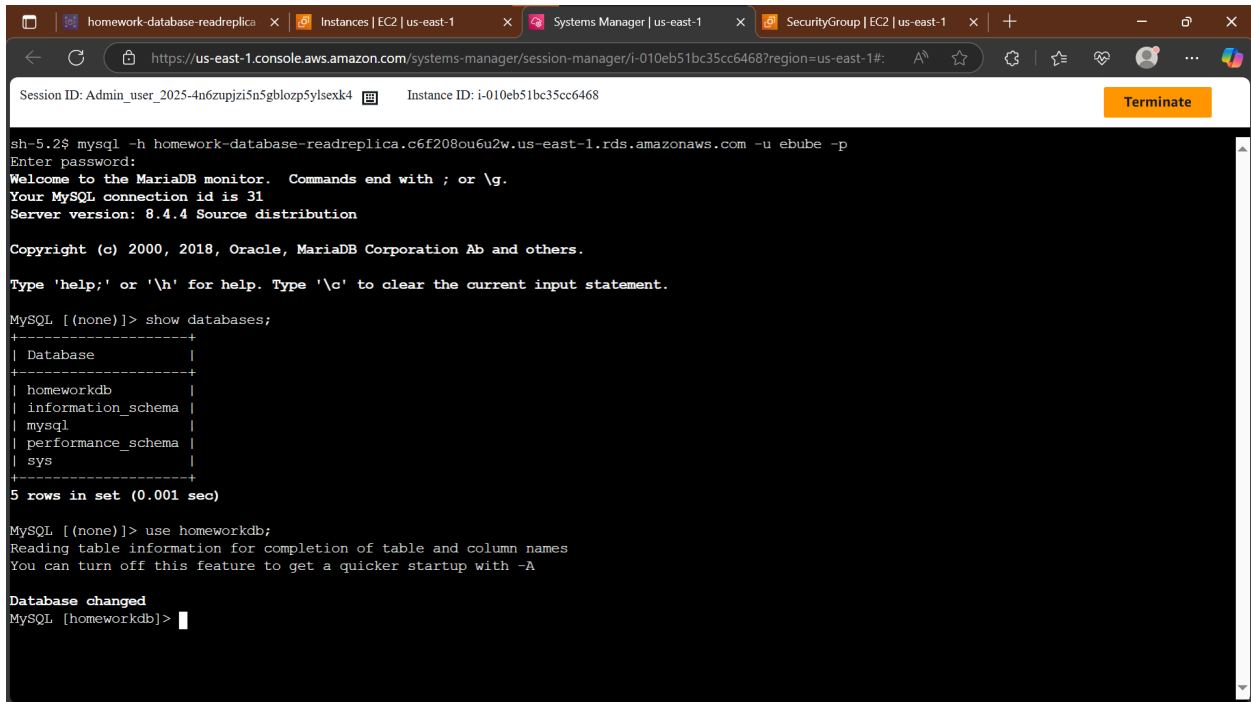
```
mysql -h  
homework-database-readreplica.c6f208ou6u2w.us-east-1.rds.amazonaws.com -u  
ebube -p
```

Checking for the replicated database

[homework-database-readreplica.c6f208ou6u2w.us-east-1.rds.amazonaws.com](https://homework-database-readreplica.c6f208ou6u2w.us-east-1.rds.amazonaws.com)

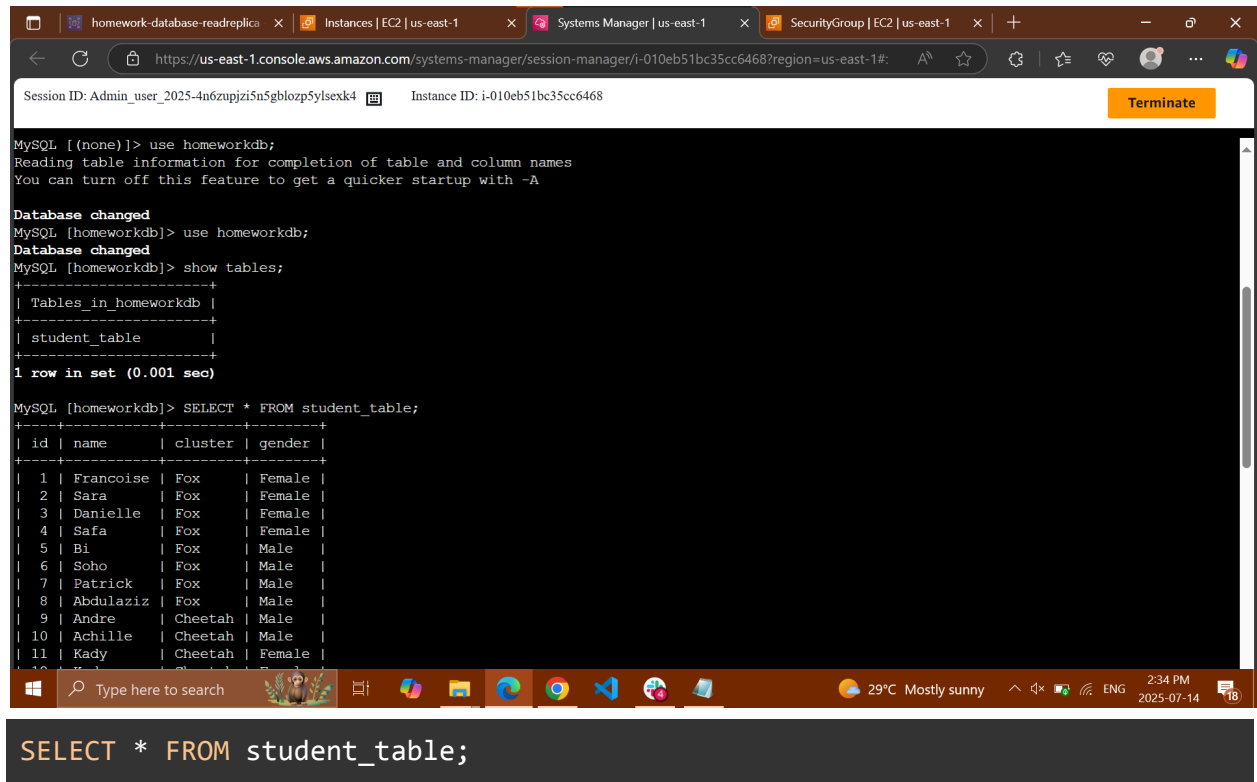
```
mysql -h homework-database-readreplica.c6f208ou6u2w.us-east-1.rds.amazonaws.com -u  
ebube -p
```

```
mysql -h homework-database-readreplica.c6f208ou6u2w.us-east-1.rds.amazonaws.com -u ebube -p
```

A screenshot of an AWS Systems Manager session window. The browser tabs at the top include 'homework-database-readreplica', 'Instances | EC2 | us-east-1', 'Systems Manager | us-east-1', and 'SecurityGroup | EC2 | us-east-1'. The address bar shows the URL 'https://us-east-1.console.aws.amazon.com/systems-manager/session-manager/i-010eb51bc35cc6468?region=us-east-1:'. Below the browser window, the session details show 'Session ID: Admin\_user\_2025-4n6zupji5n5gblozp5ylsexk4' and 'Instance ID: i-010eb51bc35cc6468'. A 'Terminate' button is visible in the top right corner. The main terminal area displays a MySQL command prompt session. The user runs 'mysql -h homework-database-readreplica.c6f208ou6u2w.us-east-1.rds.amazonaws.com -u ebube -p'. The terminal shows the MySQL welcome message, the connection ID (31), and the server version (8.4.4). The user then runs 'show databases;', which returns a list of databases: 'homeworkdb', 'information\_schema', 'mysql', 'performance\_schema', and 'sys'. Finally, the user runs 'use homeworkdb;', and the terminal shows 'Database changed'.

Logged into the replica using the command:

```
mysql -h homework-database-readreplica.c6f208ou6u2w.us-east-1.rds.amazonaws.com -u ebube -p
```



The screenshot shows a web browser window with multiple tabs. The active tab is 'Systems Manager | us-east-1'. The address bar shows the URL: <https://us-east-1.console.aws.amazon.com/systems-manager/session-manager/i-010eb51bc35cc6468?region=us-east-1#>. The session ID is 'Admin\_user\_2025-4n6zupjzi5n5gblozp5ylsexk4' and the instance ID is 'i-010eb51bc35cc6468'. A 'Terminate' button is visible in the top right corner.

```
MySQL [(none)]> use homeworkdb;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
MySQL [homeworkdb]> use homeworkdb;
Database changed
MySQL [homeworkdb]> show tables;
+-----+
| Tables_in_homeworkdb |
+-----+
| student_table         |
+-----+
1 row in set (0.001 sec)

MySQL [homeworkdb]> SELECT * FROM student_table;
+----+-----+-----+-----+
| id | name   | cluster | gender |
+----+-----+-----+-----+
| 1  | Francoise | Fox     | Female |
| 2  | Sara     | Fox     | Female |
| 3  | Danielle | Fox     | Female |
| 4  | Safa     | Fox     | Female |
| 5  | Bi       | Fox     | Male   |
| 6  | Soho     | Fox     | Male   |
| 7  | Patrick  | Fox     | Male   |
| 8  | Abdulaziz | Fox     | Male   |
| 9  | Andre    | Cheetah | Male   |
| 10 | Achille  | Cheetah | Male   |
| 11 | Kady     | Cheetah | Female |
| 12 | ...      | ...     | ...    |
+----+-----+-----+-----+
```

The Windows taskbar at the bottom shows the search bar, taskbar icons, system tray with weather (29°C Mostly sunny), language (ENG), and date/time (2:34 PM 2025-07-14).

```
SELECT * FROM student_table;
```

Same content with the original