CSYE 6225: Network Structure & Cloud Computing Course
Assignment # 7

Lab Assignment: Build a database server using cloud computing resources. With each screenshot, please explain your understanding of its content. There are 2 main tasks in this assignment. Please complete all of them.

Prerequisites:

- Use the AWS academy Lab account. **Do not use your personal AWS account.**

Tasks:

Task 1: Create a New RDS Instance

Step-by-Step Instructions

1. Open RDS Dashboard
    - In the AWS Management Console, search for RDS and open the dashboard.
2. Create a Database
    - Go to **Databases** in the left panel and click **Create Database**.
    - Choose **Standard create**.
    - Select **MySQL** as the engine.
3. Database Configuration
    - Choose the **Free Tier** option.
    - Set the **DB Instance Identifier** to your **name**.
    - Set **Master Username** as admin and choose a **strong password**.
    - Select **Self-managed**.
    - Use **Burstable classes** (e.g., db.t3.micro).
    - Set storage size to **20 GB**.
4. Configure Connectivity
    - Use the **default VPC**.
    - **Public access**: Yes.
    - Create or select an **existing security group**. Add an **inbound rule** for **port 3306** (MySQL).
5. Monitoring
    - Disable Backup (uncheck).
    - Disable Encryption (uncheck).
    - Disable minor version upgrade (uncheck)

5. Create the Database
    - Review all settings and click **Create Database**. Wait for the database creation to complete.

[Screenshot # 1: Show the completed RDS configuration page before clicking Create]

[Screenshot #2: Show the successful database creation and endpoint from the Connectivity & Security section.]

Task 2: Connect to the RDS Instance Using AWS CloudShell

1. **Launch AWS CloudShell**
    - Open the **AWS Management Console** and launch **CloudShell** from the top-right corner.
2. **Connect to the RDS Database**

    mysql -h <RDS_ENDPOINT> -P 3306 -u admin -p

    - Replace <RDS_ENDPOINT> with your RDS endpoint (found in the RDS dashboard).
    - Enter the password when prompted.
3. **Create a Table in RDS:**

```
CREATE DATABASE student_records;
USE student_records;

CREATE TABLE students (
  student_id INT PRIMARY KEY,
```



```
  name VARCHAR(100),
  major VARCHAR(50),
  enrollment_date DATE
);
```

[Screenshot #3: Show the successful table creation in the CloudShell terminal.]

4. **Insert Data into the Table:**

```
INSERT INTO students (student_id, name, major, enrollment_date)
VALUES (1, 'Alice Johnson', 'Computer Science', '2023-08-21'),
       (2, 'Bob Smith', 'Information Systems', '2024-01-15');
```

5. **Query the Data:**

```
SELECT * FROM students;
```

[Screenshot #4: Show the query results in the CloudShell terminal.]

6. **Clean Up the RDS Instance**
   - After taking screenshots, delete the **RDS instance**.

[Screenshot #5: Show the successful deletion of the RDS database.]

Grading Guidelines

- No late assignments are accepted.
- **4 points per screenshot** (5 total screenshots, max 20 points).
- **10 points for well-documented screenshots** (at least a couple statements about each screenshot).

End Assignment # 7