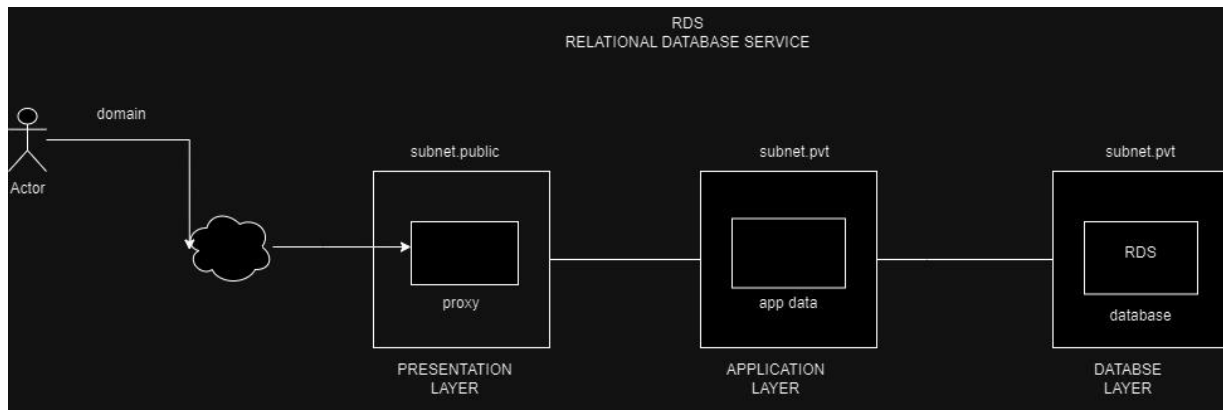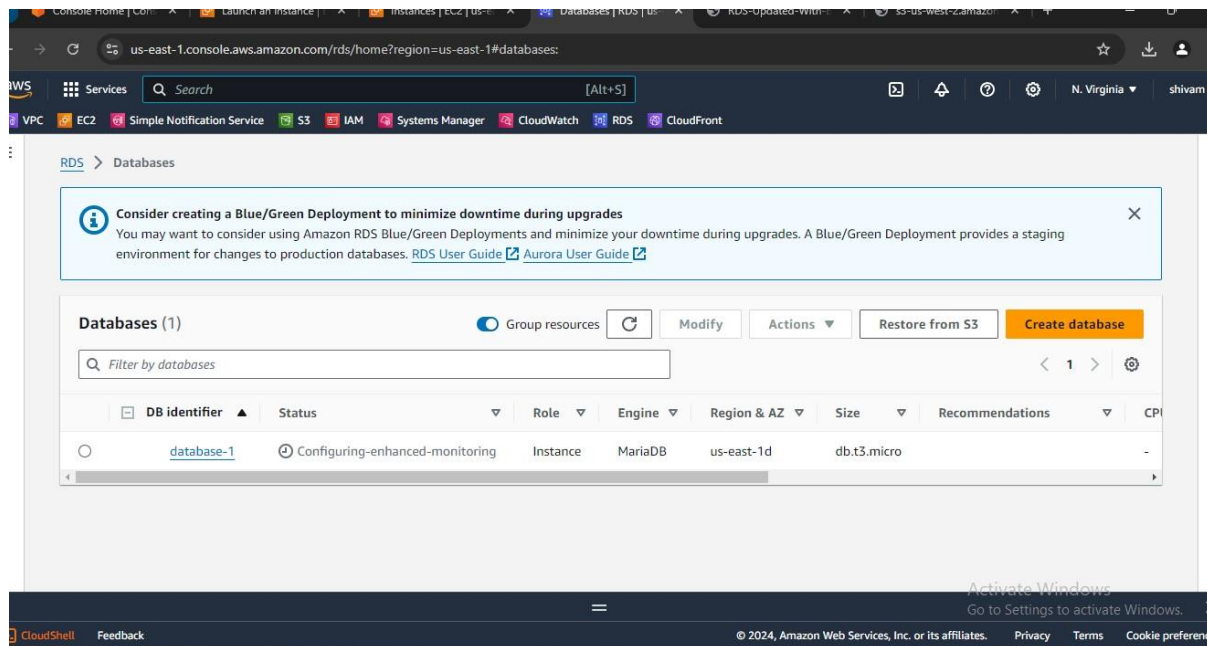# RDS

Amazon RDS (Relational Database Service) is a managed service that simplifies setting up, operating, and scaling relational databases in the cloud
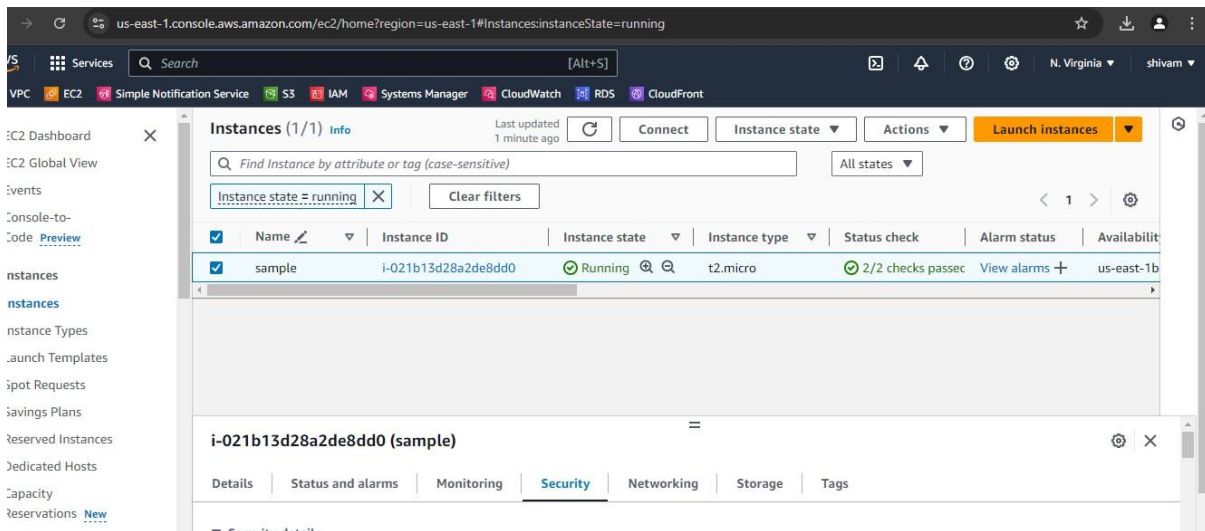

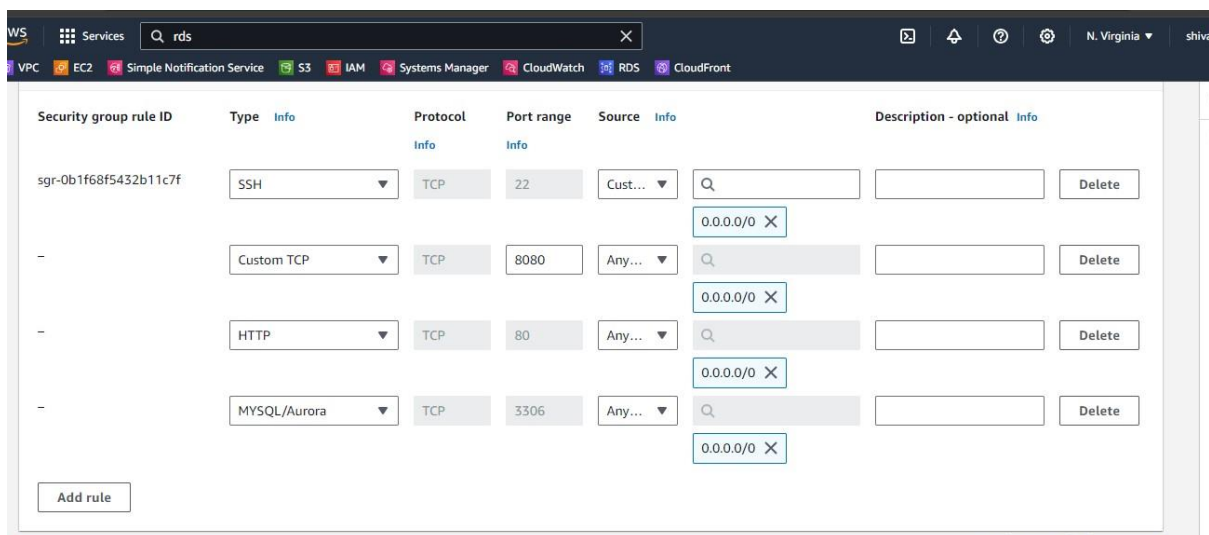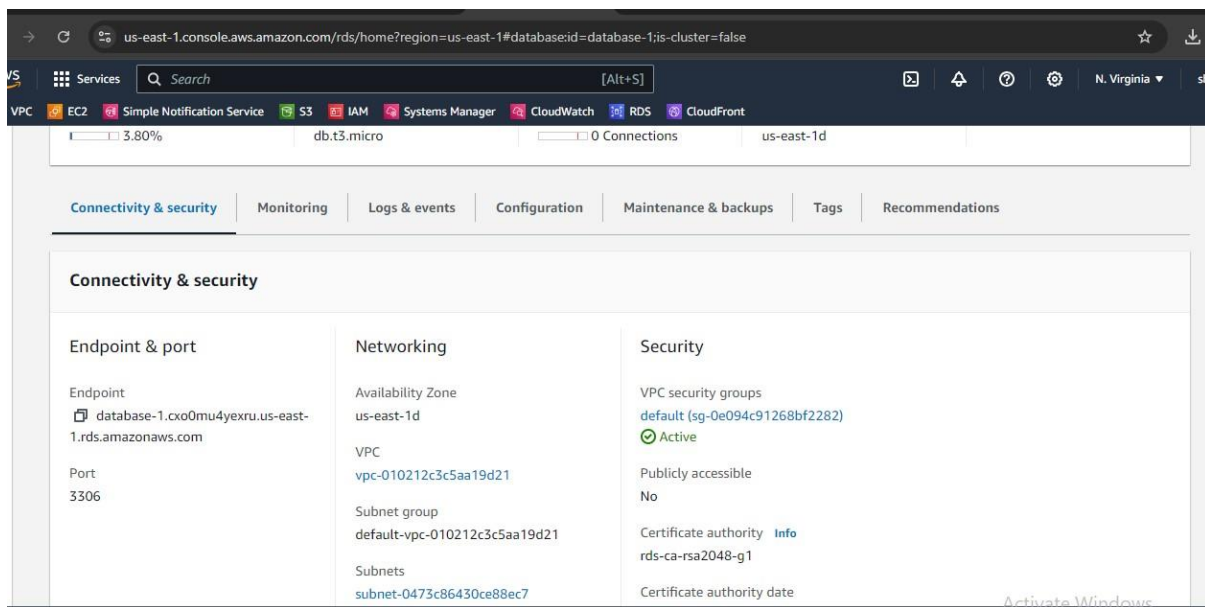❖ Creating A RDS Database Using Aws .

❖ Creating A Instance In EC2

❖ INSTANCE - An instance is a specific implementation of a software or hardware environment, often used to refer to a virtual server or database environment running on a cloud platform.

❖ Whitelist -Port > SSH - 22 , HTTP , 8080 ,3306 in security group.

❖ Taking the endpoint of RDS.

- ❖ Using the command (mysql -h **endpoint** -u admin -p) .
- ❖ After that enter the password .
- ❖ Install mariadb with the commands
- ❖ Sudo apt update
- ❖ Sudo apt install mariadb*
- ❖ Sudo systemctl start mariadb
- ❖ Sudo systemctl status mariadb
- ❖ Your system is connected to the maridb dabatase.

- ❖ Downloading the apache tomcat file from the url https://archive.apache.org/dist/tomcat/tomcat-8/v8.5.78/bin/apache-tomcat-8.5.78.tar.gz

⭕ Install it with wget command in cli. ⭕
Check it with ls command.

- ✞ Unzipping the tomcat file tar file.
- ✞ Tar -xvzf filename .

Changes in the directories

- ✞ Open the file and change the directory to webapps .
- ✞ In webapps (cd webapps)
  1. Download the student.war file given in the documention.
  2. Use this link - https://s3-us-west-2.amazonaws.com/studentapi-cit/student.war

  3. Install in it with wget command.
  4. Wget https://s3-us-west-2.amazonaws.com/studentapi-cit/student.war

✞   In apache file change directory to lib /

✞

1. Add mysql-connector.jar file to lib/   (cd lib/)
2. Using the link given in the documentation - https://s3-us-west-2.amazonaws.com/studentapi-cit/mysqlconnector.jar
3. Downlaoad it with wget command .
4. Wget https://s3-us-west-2.amazonaws.com/studentapi-cit/mysql-connector.jar

```
atalina-storeconfig.jar  jasper-el.jar  tomcat-api.jar      tomcat-i18n-fr.jar  tomca
atalina-tribes.jar       jasper.jar     tomcat-coyote.jar   tomcat-i18n-ja.jar  tomca
oot@ip-172-31-94-182:~/apache-tomcat-8.5.78/lib# wget https://s3-us-west-2.amazonaws
-2024-08-25 10:51:19--  https://s3-us-west-2.amazonaws.com/studentapi-cit/mysql-conn
esolving s3-us-west-2.amazonaws.com (s3-us-west-2.amazonaws.com)... 52.218.236.168,
onnecting to s3-us-west-2.amazonaws.com (s3-us-west-2.amazonaws.com)|52.218.236.168|
TTP request sent, awaiting response... 200 OK
ength: 1007502 (984K) [application/java-archive]
aving to: 'mysql-connector.jar'

ysql-connector.jar                  100%[=====================================

024-08-25 10:51:20 (1.53 MB/s) - 'mysql-connector.jar' saved [1007502/1007502]

oot@ip-172-31-94-182:~/apache-tomcat-8.5.78/lib# ls
nnotations-api.jar        catalina.jar    jaspic-api.jar     tomcat-coyote.jar   tom
atalina-ant.jar           ecj-4.6.3.jar   jsp-api.jar        tomcat-dbcp.jar     tom
atalina-ha.jar            el-api.jar      mysql-connector.jar tomcat-i18n-de.jar  tom
atalina-storeconfig.jar   jasper-el.jar   servlet-api.jar    tomcat-i18n-es.jar  tom
atalina-tribes.jar        jasper.jar      tomcat-api.jar     tomcat-i18n-fr.jar  tom
oot@ip-172-31-94-182:~/apache-tomcat-8.5.78/lib# cd ..
```

✞ Adding the file in conf/ (cd conf/)

✞ Edit context.xml file (vim context.xml)

<Resource name="jdbc/TestDB" auth="Container" type="javax.sql.DataSource" maxTotal="500" maxIdle="30"

maxWaitMillis="1000" username="admin" password="shivam123" driverClassName="com.mysql.jdbc.Driver"

url="jdbc:mysql://database-1.cz064ko8o31x.ap-south-1.rds.amazonaws.com:3306/studentapp"/>

```
 VPC    EC2    Simple Notification Service    S3    IAM    Systems Manager    CloudWatch    RDS    CloudFront
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distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
-->
<!-- The contents of this file will be loaded for each web application -->
<Context>
    <Resource name="jdbc/TestDB" auth="Container" type="javax.sql.DataSource" maxTotal="500"
     maxIdle="30" maxWaitMillis="1000" username="admin" password="shivam123"
     driverClassName="com.mysql.jdbc.Driver"
     url="jdbc:mysql://database-1.cxo0mu4yexru.us-east-1.rds.amazonaws.com:3306/studentapp"/>
    <!-- Default set of monitored resources. If one of these changes, the     -->
    <!-- web application will be reloaded.                                     -->
    <WatchedResource>WEB-INF/web.xml</WatchedResource>
    <WatchedResource>${catalina.base}/conf/web.xml</WatchedResource>

- INSERT --
```

✞ Go to bin directory cd bin/

✞ Give the permission to Catalina.sh (execution permission to user).

✠ Start the Catalina.sh (./Catalina.sh start)

✠ Check the service using the ip address adding 8080/ at the last of ip .

✠ To check running webpage → USE 8080 after Public IP Address http://3.86.155.25:8080/
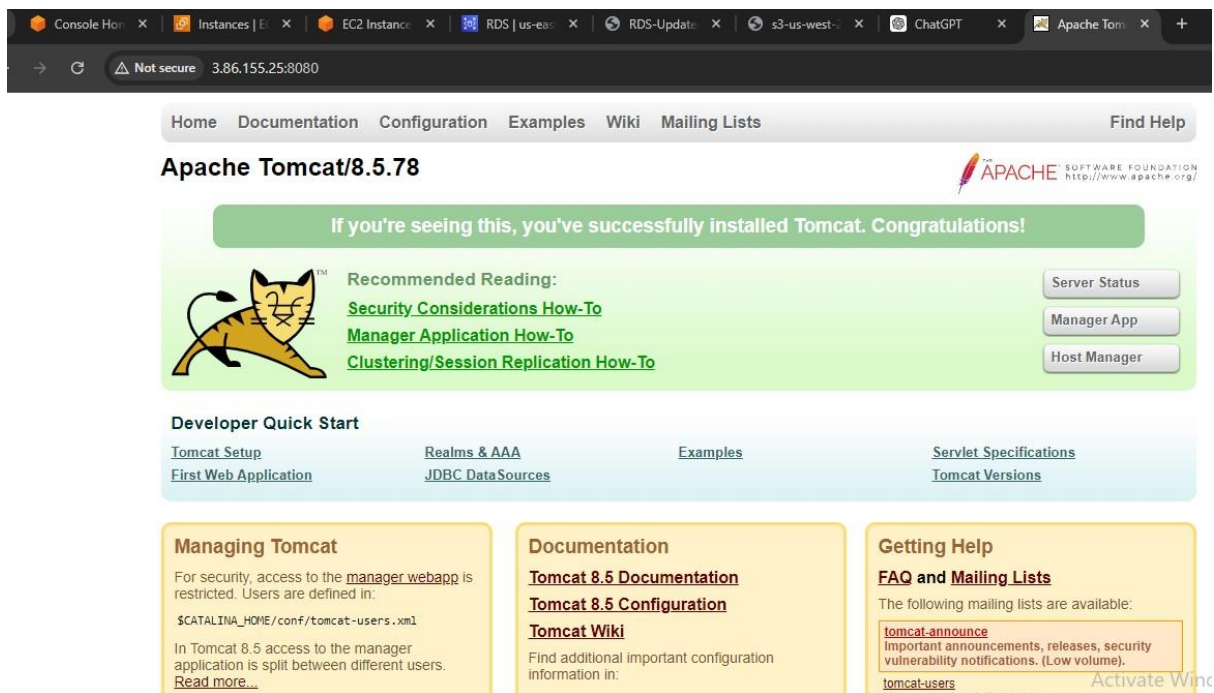
✠ The students registration form has been shown successfully .

Student Registration Form

Student Name	
Student Address	
Student Age	
Student Qualification	
Student Percentage	
Year Passed	

register

✠ Data is added successfully (Its working).

Students List

Student ID	StudentName	Student Addrs	Student Age	Student Qualification	Student Percentage	Student Year Passed	Edit	Delete
1	shivam	godambewadi	21	ty .bsc.cs	60	2025	edit	delete
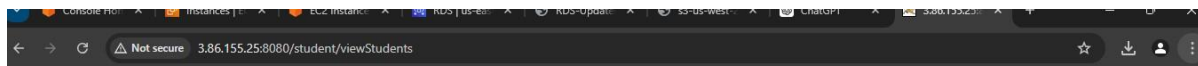
Students List

Student ID	StudentName	Student Addrs	Student Age	Student Qualification	Student Percentage	Student Year Passed	Edit	Delete
1	shivam	godambewadi	21	ty .bsc.cs	60	2025	edit	delete
2	gaurav	kothrud	21	ty .bsc.cs	45	2025	edit	delete
3	ayush	kothrud	21	ty .bsc.cs	20	2025	edit	delete

✞ Check the database again .

✞ Using command – (mysql -h endpoint -u admin -p).

✞ Check

    1. Use studentapp;

    2. Select * from students;

```
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 107
Server version: 10.11.8-MariaDB-log managed by https://aws.amazon.com/rds/

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

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

MariaDB [(none)]> use studentapp;
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
MariaDB [studentapp]> select * from students;
+------------+--------------+---------------+-------------+--------------+----------------+---------------------+
| student_id | student_name | student_addr  | student_age | student_qual | student_percent | student_year_passed |
+------------+--------------+---------------+-------------+--------------+----------------+---------------------+
|          1 | shivam       | godambewadi   |          21 | ty .bsc.cs   |             60 | 2025                |
|          2 | gaurav       | kothrud       |          21 | ty .bsc.cs   |             45 | 2025                |
|          3 | ayush        | kothrud       |          21 | ty .bsc.cs   |             20 | 2025                |
+------------+--------------+---------------+-------------+--------------+----------------+---------------------+
3 rows in set (0.002 sec)

MariaDB [studentapp]>
```

i-021b13d28a2de8dd0 (sample)

PublicIPs: 3.86.155.25   PrivateIPs: 172.31.94.182

✠ Taking backup of data and schema.
✠ Using the command in cli mysqldump -h [RDS-Endpoint] -u admin -p [DB_Name] > [Give_Dir_Name]

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

MariaDB [(none)]> use studentapp;
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
MariaDB [studentapp]> select * from students;
+------------+--------------+--------------+-------------+--------------+-----------------+---------------------+
| student_id | student_name | student_addr | student_age | student_qual | student_percent | student_year_passed |
+------------+--------------+--------------+-------------+--------------+-----------------+---------------------+
|          1 | shivam       | godambewadi  | 21          | ty .bsc.cs   | 60              | 2025                |
|          2 | gaurav       | kothrud      | 21          | ty .bsc.cs   | 45              | 2025                |
|          3 | ayush        | kothrud      | 21          | ty .bsc.cs   | 20              | 2025                |
+------------+--------------+--------------+-------------+--------------+-----------------+---------------------+
3 rows in set (0.002 sec)

MariaDB [studentapp]> exit
Bye
root@ip-172-31-94-182:~# sudo mysqldump -h database-1.cxo0mu4yexru.us-east-1.rds.amazonaws.com -u admin -p studentapp > backupppp
Enter password:
root@ip-172-31-94-182:~# ls
apache-tomcat-8.5.78  apache-tomcat-8.5.78.tar.gz  backupppp  snap
root@ip-172-31-94-182:~#
```

✠ sudo mysqldump -h database-1.cz064ko8o31x.ap-south-1.rds.amazonaws.com -u admin -p studentapp > backupppp

✠ cat backupppp

✠ data and schema is shown in the file or directory.

✠ Only taking the backup of schema
✠ Using the command

sudo mysqldump -h database-1.cz064ko8o31x.ap-south-1.rds.amazonaws.com -u admin -p –no-data studentapp > my_backup_for_Data.sql

```
*!40101 SET SQL_MODE=@OLD_SQL_MODE */;
*!40014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;
*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
*!40111 SET SQL_NOTES=@OLD_SQL_NOTES */;

- Dump completed on 2024-08-25 11:16:04
root@ip-172-31-94-182:~# sudo mysqldump -h database-1.cxo0mu4yexru.us-east-1.rds.amazonaws.com -u admin -p --no-data studentapp > schema_backup
Enter password:
root@ip-172-31-94-182:~# ls
apache-tomcat-8.5.78  apache-tomcat-8.5.78.tar.gz  backupppp  data_backup  schema_backup  snap
root@ip-172-31-94-182:~# cat schema_backup
*!999999\- enable the sandbox mode */
- MariaDB dump 10.19  Distrib 10.11.8-MariaDB, for debian-linux-gnu (x86_64)

- Host: database-1.cxo0mu4yexru.us-east-1.rds.amazonaws.com    Database: studentapp
- -----------------------------------------------------
- Server version       10.11.8-MariaDB-log
```

✠ Only taking the backup of data

✠ Using the command

sudo mysqldump -h database-1.cz064ko8o31x.ap-south-1.rds.amazonaws.com -u admin -p –no-create-info studentapp > data_backup

```
J, ayush , koonrad , 21 , by :bsc:cs , 20 , 2025 ;,
*!40000 ALTER TABLE `students` ENABLE KEYS */;
UNLOCK TABLES;
*!40103 SET TIME_ZONE=@OLD_TIME_ZONE */;

*!40101 SET SQL_MODE=@OLD_SQL_MODE */;
*!40014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;
*!40014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */;
*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
*!40111 SET SQL_NOTES=@OLD_SQL_NOTES */;

- Dump completed on 2024-08-25 11:13:57
root@ip-172-31-94-182:~# sudo mysqldump -h database-1.cxo0mu4yexru.us-east-1.rds.amazonaws.com -u admin -p --no-create-info studentapp > data_bac
kup
Enter password:
root@ip-172-31-94-182:~# ls
apache-tomcat-8.5.78   apache-tomcat-8.5.78.tar.gz   backupppp   data_backup   snap
root@ip-172-31-94-182:~# cat data_backup
```

BYE………………..