

K. J. Somaiya College of Engineering, Mumbai-77
(Autonomous College Affiliated to University of Mumbai)

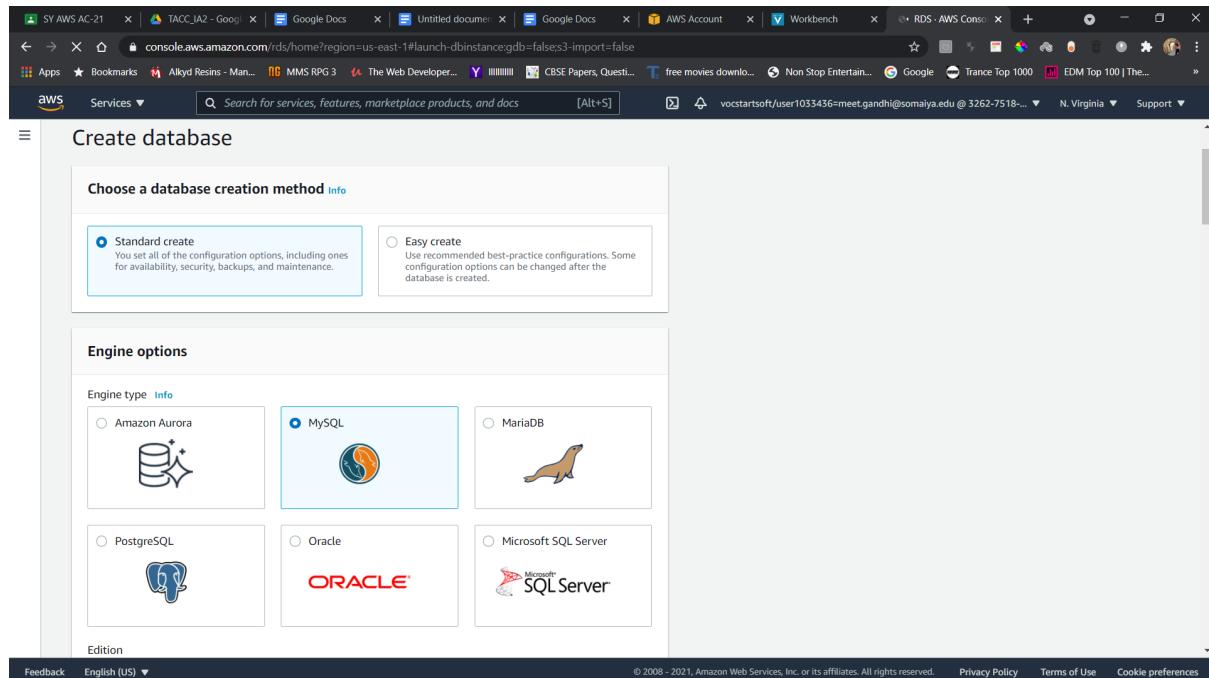
Class Activity No.: 04

Roll Number: 1911076

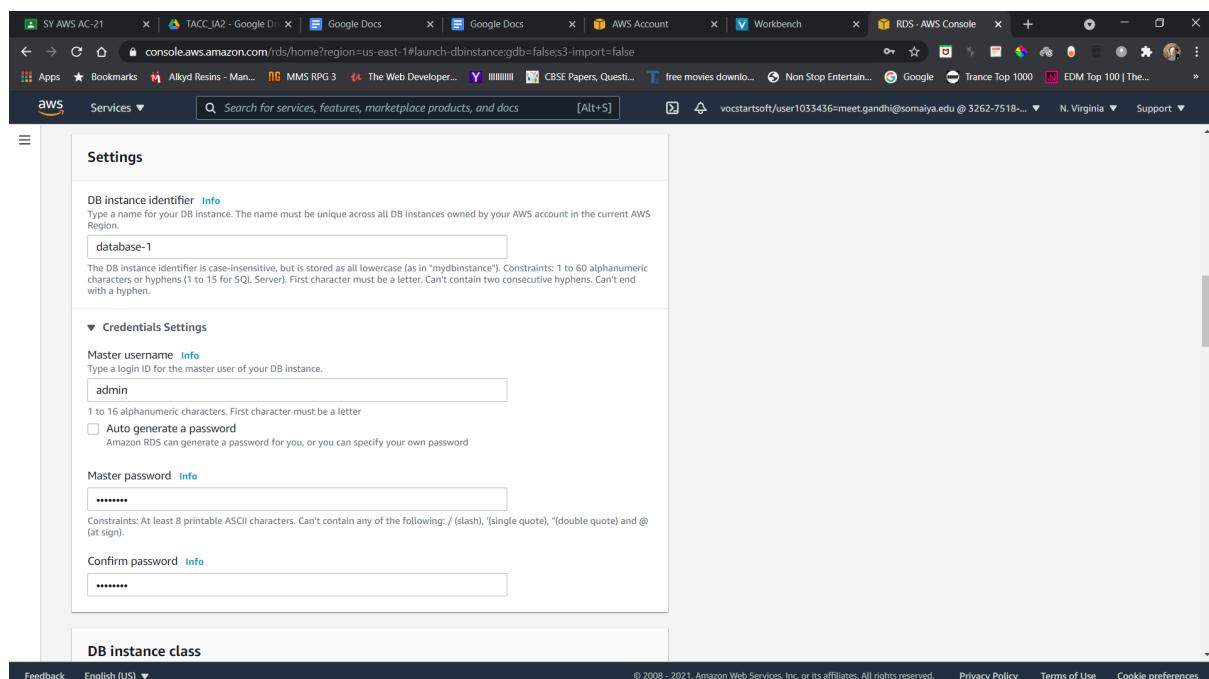
Name: Meet Gandhi

Aim: Class Activity 04: Database, tables & queries on Mysql RDS using Linux instance

Step 1: Creating a RDS



The screenshot shows the 'Create database' step in the AWS RDS console. It starts with a 'Choose a database creation method' section where 'Standard create' is selected. Below this is the 'Engine options' section, which lists several database engines: Amazon Aurora, MySQL (selected), MariaDB, PostgreSQL, Oracle, and Microsoft SQL Server. The MySQL option is highlighted with a blue border. At the bottom of this section, there's an 'Edition' dropdown set to 'English (US)'. The footer of the page includes standard AWS links like Feedback, English (US), Privacy Policy, Terms of Use, and Cookie preferences.



The screenshot shows the 'Settings' step in the AWS RDS console. It includes fields for the 'DB instance identifier' (set to 'database-1'), 'Master username' (set to 'admin'), 'Master password' (a masked password), and 'Confirm password' (a masked password). Below these, there's a 'DB instance class' section. The footer of the page includes standard AWS links like Feedback, English (US), Privacy Policy, Terms of Use, and Cookie preferences.

K. J. Somaiya College of Engineering, Mumbai-77

(Autonomous College Affiliated to University of Mumbai)

The screenshot shows the AWS RDS console for creating a new database instance. The 'Storage' section is selected, showing options for General Purpose (SSD) storage at 20 GiB, with a note about provisioning less than 100 GiB potentially impacting performance. The 'Storage autoscaling' section is expanded, showing the 'Enable storage autoscaling' checkbox is checked, allowing storage to increase up to 1000 GiB. The 'Availability & durability' section is also visible.

Feedback English (US) ▾ © 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use Cookie preferences

The screenshot shows the 'Subnet group' configuration for the database instance. It specifies a 'default' subnet group and selects 'No' for public access, indicating that only instances within the VPC will have access. The 'VPC security group' section shows 'Choose existing' selected, with 'default' chosen from the dropdown. The 'Database authentication' section is partially visible below.

Feedback English (US) ▾ © 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use Cookie preferences

The screenshot shows the 'Databases' page in the RDS console. A single database named 'database-1' is listed, showing it is an MySQL Community instance in the 'Creating' state. The page includes a search bar and buttons for 'Group resources', 'Modify', 'Actions', 'Restore from S3', and 'Create database'.

RDS > Databases

Databases Group resources C Modify Actions Restore from S3 Create database

Filter databases < 1 > ⚙

DB identifier	Role	Engine	Region & AZ	Size	Status
database-1	Instance	MySQL Community	-	db.t2.micro	Creating

K. J. Somaiya College of Engineering, Mumbai-77

(Autonomous College Affiliated to University of Mumbai)

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)
An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Cancel and Exit

Search for an AMI by entering a search term e.g. "Windows"

Quick Start

My AMIs

AWS Marketplace

Community AMIs

Free tier only ⓘ

Image	Name	Description	Select	64-bit (x86)	64-bit (Arm)
	Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-0915bcb5fa77e4892 (64-bit x86) / ami-0c3ddaa3deab25a563 (64-bit Arm)	Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Gilbc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is approaching end of life on December 31, 2020 and has been removed from this wizard.	Select	<input checked="" type="radio"/> 64-bit (x86)	<input type="radio"/> 64-bit (Arm)
	macOS Big Sur 11.2.1 - ami-0af92ed5f8a74cdca	The macOS Big Sur AMI is an EBS-backed, AWS-supported image. This AMI includes the AWS Command Line Interface, Command Line Tools for Xcode, Amazon SSM Agent, and Homebrew. The AWS Homebrew Tap includes the latest versions of multiple AWS packages included in the AMI.	Select	64-bit (Mac)	
	macOS Catalina 10.15.7 - ami-07f480f3fa002bc15	The macOS Catalina AMI is an EBS-backed, AWS-supported image. This AMI includes the AWS Command Line Interface, Command Line Tools for Xcode, Amazon SSM Agent, and Homebrew. The AWS Homebrew Tap includes the latest versions of multiple AWS packages included in the AMI.	Select	64-bit (Mac)	

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. Learn more about instance types and how they can meet your computing needs.

Filter by: All instance families ⏺ Current generation ⏺ Show/Hide Columns

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, ~ 1 GiB memory, EBS only)

	Family	Type	vCPUs ⓘ	Memory (GiB)	Instance Storage (GB) ⓘ	EBS-Optimized Available ⓘ	Network Performance ⓘ	IPv6 Support ⓘ
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro ⓘ Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t3	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes

Cancel Previous **Review and Launch** Next: Configure Instance Details

1. Choose AMI 2. Choose Instance Type **3. Configure Instance** 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances ⓘ Launch into Auto Scaling Group ⓘ

Purchasing option ⓘ Request Spot instances

Network ⓘ ⓘ

Subnet ⓘ ⓘ

Auto-assign Public IP ⓘ

Placement group ⓘ Add instance to placement group

Capacity Reservation ⓘ

Domain join directory ⓘ ⓘ

IAM role ⓘ ⓘ

CPU options ⓘ Specify CPU options

Shutdown behavior ⓘ

Stop - Hibernate behavior ⓘ Enable hibernation as an additional stop behavior

Enable termination protection ⓘ Protect against accidental termination

Cancel Previous **Review and Launch** Next: Add Storage

K. J. Somaiya College of Engineering, Mumbai-77

(Autonomous College Affiliated to University of Mumbai)

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-04ad8208c01a49a0c	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Tags](#)

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: Create a new security group

Select an existing security group

Security group name:

Description:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom <input style="width: 100px; height: 15px; border: none; border-radius: 5px; background-color: #f0f0f0; padding: 2px 10px;" type="button" value="..."/> 0.0.0.0/0	e.g. SSH for Admin Desktop <input style="width: 15px; height: 15px; border: none; border-radius: 50%; background-color: #e0e0e0; font-size: 10px; color: black; margin-left: 5px;" type="button" value="X"/>
MYSQL/Auror	TCP	3306	Custom <input style="width: 100px; height: 15px; border: none; border-radius: 5px; background-color: #f0f0f0; padding: 2px 10px;" type="button" value="..."/> 0.0.0.0/0	e.g. SSH for Admin Desktop <input style="width: 15px; height: 15px; border: none; border-radius: 50%; background-color: #e0e0e0; font-size: 10px; color: black; margin-left: 5px;" type="button" value="X"/>

[Add Rule](#)



Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#) [Previous](#) [Review and Launch](#)

K. J. Somaiya College of Engineering, Mumbai-77
(Autonomous College Affiliated to University of Mumbai)

Step 7: Review Instance Launch

This step is part of the AWS CloudFormation wizard. It provides a preview of the resources you are about to launch. You can make changes at any time by clicking the 'Edit' link next to each resource.

AMI: **Amazon Linux AMI 2018.03.1 (HVM, SSD Volume Type)** (eligible) packages through extras. This AMI is the successor of the Amazon Linux AMI that is a...

Root Device Type: ebs Virtualization type: hvm

Instance Type

Instance Type	ECUs	vCPUs
t2.micro	-	1

Security Groups

Security group name	Description
launch-wizard-7	launch-wizard-7 created

Type	Protocol
SSH	TCP
MYSQL/Aurora	TCP

Instance Details

Storage

Tags

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

I acknowledge that I have access to the selected private key file (ec2instance.pem), and that without this file, I won't be able to log into my instance.

Edit instance type

Network Performance
Low to Moderate

Edit security groups

Description

Edit instance details

Edit storage

Edit tags

PuTTY Configuration

Category:

- Session
 - Logging
- Terminal
 - Keyboard
 - Bell
 - Features
- Window
 - Appearance
 - Behaviour
 - Translation
 - Selection
 - Colours
- Connection
 - Data
 - Proxy
 - Telnet
 - Rlogin
 - SSH
 - Serial

Basic options for your PuTTY session

Specify the destination you want to connect to

Host Name (or IP address): Port:

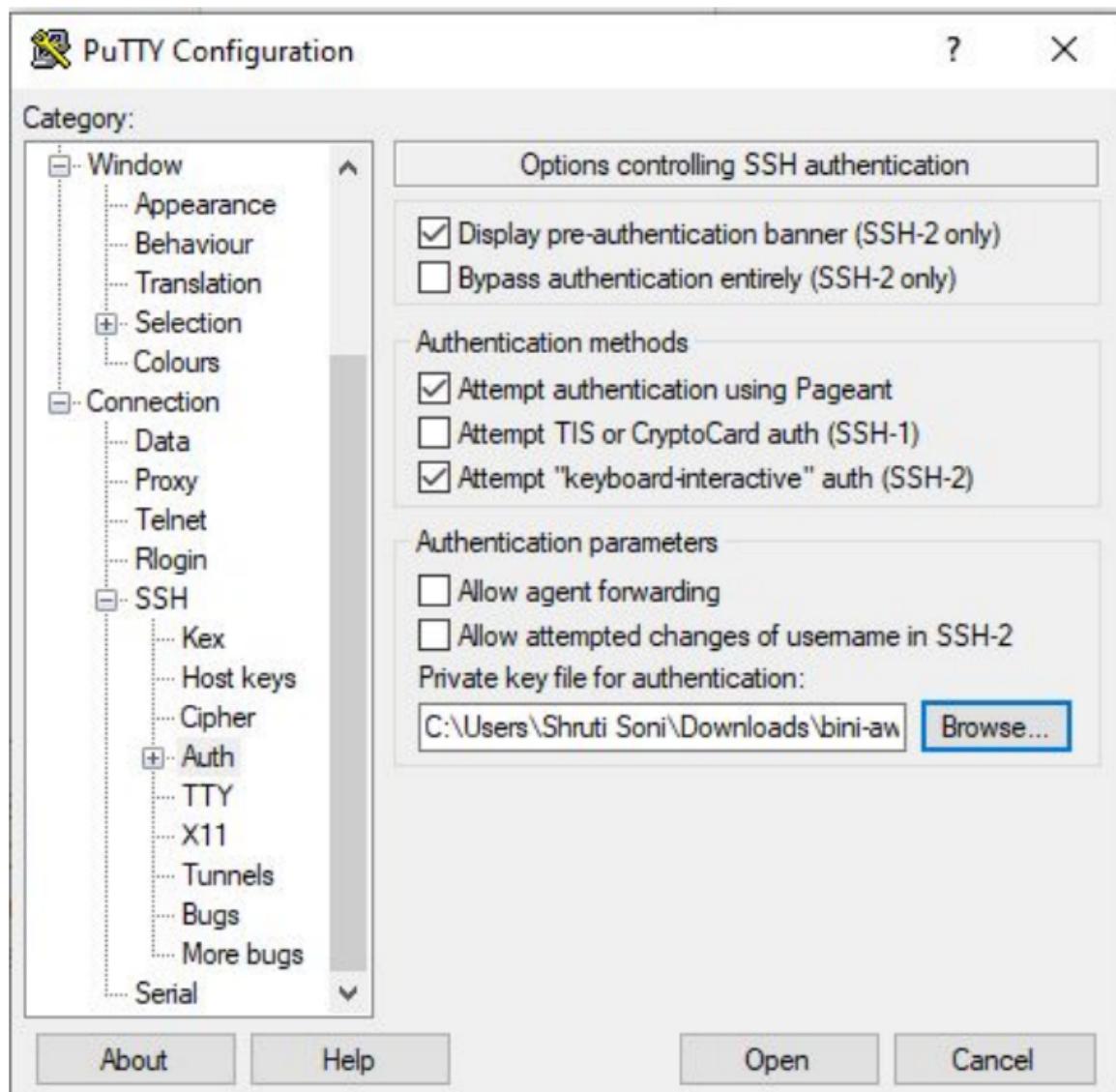
Connection type: Raw Telnet Rlogin SSH Serial

Load, save or delete a stored session

Saved Sessions

- Default Settings
- ec2-user@52.87.181.29
- ec2user@3.89.187.31
- ec2user@52.87.181.29

Close window on exit: Always Never Only on clean exit



```
root@ip-172-31-21-32:/home/ec2-user - □ X
Using username "ec2-user".
Authenticating with public key "imported-openssh-key"
____|____|_) )
_|| ( /     Amazon Linux 2 AMI
___|\_\_|__|_
https://aws.amazon.com/amazon-linux-2/
No packages needed for security; 2 packages available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-21-32 ~]$ sudo su
[root@ip-172-31-21-32 ec2-user]#
```

Step 3: Installing Mysql in linux instance

```
[ec2-user@ip-172-31-21-32 ~]$ sudo su
[root@ip-172-31-21-32 ec2-user]# yum install mysql
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core                                         | 3.7 kB     00:00
Resolving Dependencies
--> Running transaction check
--> Package mariadb.x86_64 1:5.5.68-1.amzn2 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package      Arch      Version       Repository      Size
=====
Installing:
mariadb      x86_64    1:5.5.68-1.amzn2   amzn2-core    8.8 M

Transaction Summary
=====

Install 1 Package

Total download size: 8.8 M
Installed size: 49 M
Is this ok [y/d/N]:
```

Step 4: Connecting the database and Linux instance

```
mysql -h database-1.c9qikhsj1oxf.us-east-1.rds.amazonaws.com -P 3306 -u admin -p
```

K. J. Somaiya College of Engineering, Mumbai-77
(Autonomous College Affiliated to University of Mumbai)

```
Package      Arch    Version       Repository      Size
Installing: mariadb   x86_64  1:5.5.68-1.amzn2      amzn2-core      8.8 M
Transaction Summary
=====
Install 1 Package
Total download size: 8.8 M
installed size: 49 M
Is this ok [y/d/N]: y
Downloading packages:
mariadb-5.5.68-1.amzn2.x86_64.rpm | 8.8 MB  00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction upgrade
  Installing : 1:mariadb-5.5.68-1.amzn2.x86_64          1/1
  Verifying  : 1:mariadb-5.5.68-1.amzn2.x86_64          1/1
Installed:
  mariadb.x86_64 1:5.5.68-1.amzn2
Complete!
[root@ip-172-31-21-32 ec2-user]# mysql -h database-1.c9qikhsjloxf.us-east-1.rds.amazonaws.com -P 3306 -u admin -p
Enter password:
ERROR 2003 (HY000): Can't connect to MySQL server on 'database-1.c9qikhsjloxf.us-east-1.rds.amazonaws.com' (110)
[root@ip-172-31-21-32 ec2-user]# mysql -h database-1.c9qikhsjloxf.us-east-1.rds.amazonaws.com -P 3306 -u admin -p
Enter password:
2018Bini!
ERROR 2003 (HY000): Can't connect to MySQL server on 'database-1.c9qikhsjloxf.us-east-1.rds.amazonaws.com' (110)
[root@ip-172-31-21-32 ec2-user]# 2018Bini!
beash: 2018Bini!: command not found
[root@ip-172-31-21-32 ec2-user]#
[root@ip-172-31-21-32 ec2-user]# mysql -h database-1.c9qikhsjloxf.us-east-1.rds.amazonaws.com -P 3306 -u admin -p
Enter password:
ERROR 1045 (28000): Access denied for user 'admin'@'172.31.21.32' (using password: YES)
[root@ip-172-31-21-32 ec2-user]# mysql -h database-1.c9qikhsjloxf.us-east-1.rds.amazonaws.com -P 3306 -u admin -p
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MySQL connection id is 17
Server version: 8.0.20 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)]> 
```

Step 5 :Run SQL queries

We query the database by creating a table PERSONS and inserting values in it.Then the table is displayed.

CREATE TABLE PERSONS

```
(  
Name varchar(255) NOT NULL,  
);
```

```
INSERT INTO Persons VALUES('RAHULI');  
INSERT INTO Persons VALUES('RASIIKA');
```

Select * from PERSONS;

K. J. Somaiya College of Engineering, Mumbai-77
(Autonomous College Affiliated to University of Mumbai)

```
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 'D
MySQL [(none)]> SHOW DATABASES
->;
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 'D
MySQL [(none)]> SHOW DATABASE;
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 'D
MySQL [(none)]> SHOW DATABASES;
+-----+
| Database      |
+-----+
| TEST          |
| information_schema |
| mysql          |
| performance_schema |
+-----+
4 rows in set (0.00 sec)

MySQL [(none)]> CREATE TABLE PERSONS(NAME VARCHAR(255) NOT NULL);
ERROR 1046 (3D000): No database selected
MySQL [(none)]> █

MySQL [(none)]> SHOW DATABASES;
+-----+
| Database      |
+-----+
| TEST          |
| information_schema |
| mysql          |
| performance_schema |
+-----+
4 rows in set (0.00 sec)

MySQL [(none)]> use TEST;
Database changed
MySQL [TEST]> CREATE TABLE PERSONS(NAME VARCHAR(255) NOT NULL);
Query OK, 0 rows affected (0.03 sec)

MySQL [TEST]> INSERT INTO PERSONS VALUES('RAHUL');
Query OK, 1 row affected (0.01 sec)

MySQL [TEST]> INSERT INTO PERSONS VALUES('RASIIKA');
Query OK, 1 row affected (0.01 sec)

MySQL [TEST]> SELECT * FROM PERSONS;
+-----+
| NAME   |
+-----+
| RAHUL |
| RASIIKA |
+-----+
2 rows in set (0.00 sec)

MySQL [TEST]> █
```

Step 6: Stopping the instance

Outcomes:

CO2: Create instances of AWS services.

Conclusion:

Created a Linux instance using AWS. Also, created an RDS instance with the help of the same. Understood how putty works and used it to convert the key extension and launched the Linux instance. Then successfully installed mysql on the linux instance. After downloading, implemented sql queries on the database