AMITY SCHOOL OF ENGINERRING & TECHNOLOGY

(Academic Year 2022-23)

LAB- 7

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Class: B. Tech CSE Semester: 7

Enrolment Number: A70405219037

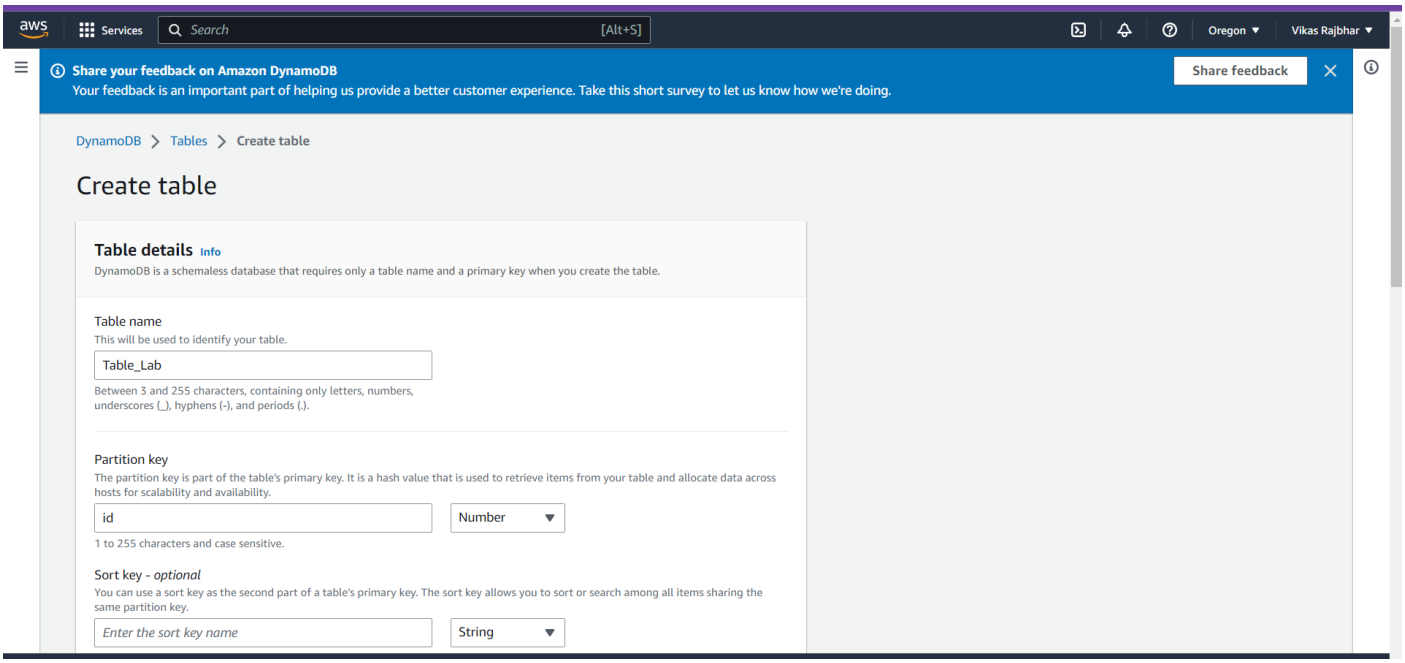
Faculty In-charge
{Department of CSE}
ASET, AUM

AIM OF THE EXPERIMENT:

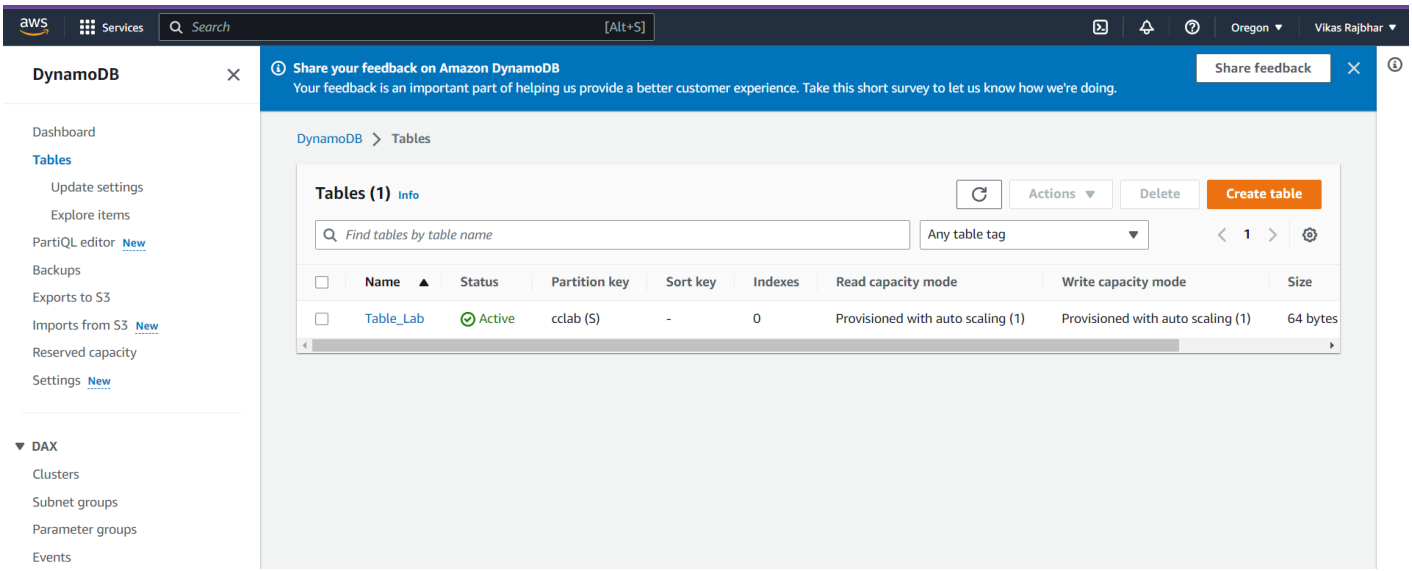
Problem Statements:

1. Create DynamoDB in AWS.
2. Create RDS using MySQL in AWS.
3. Connect RDS in AWS through SQL workbench and EC2 Instance.

1. Create DynamoDB in AWS.

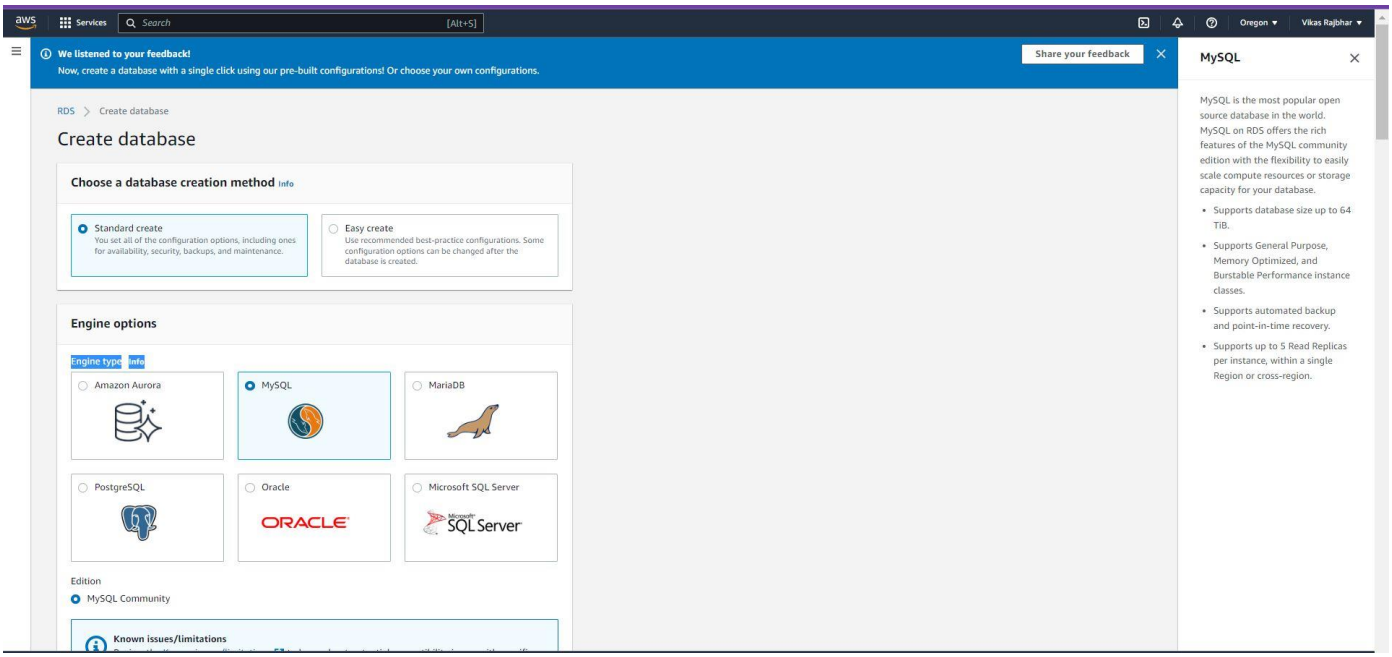


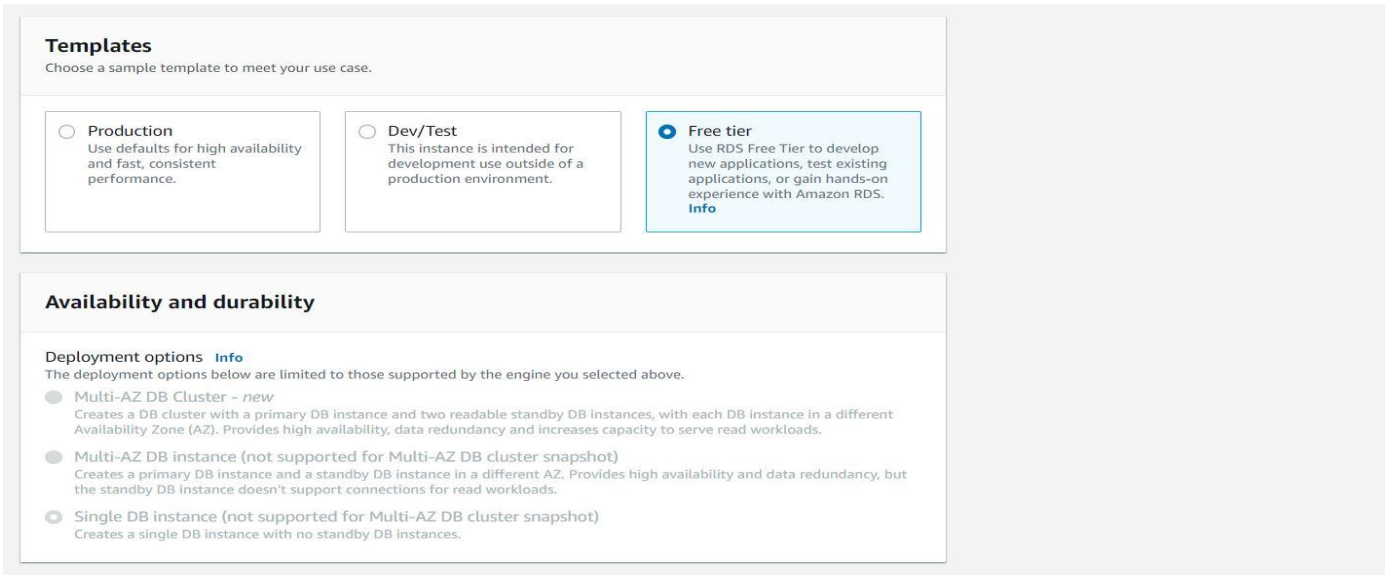
Put partition key as id and create the table.

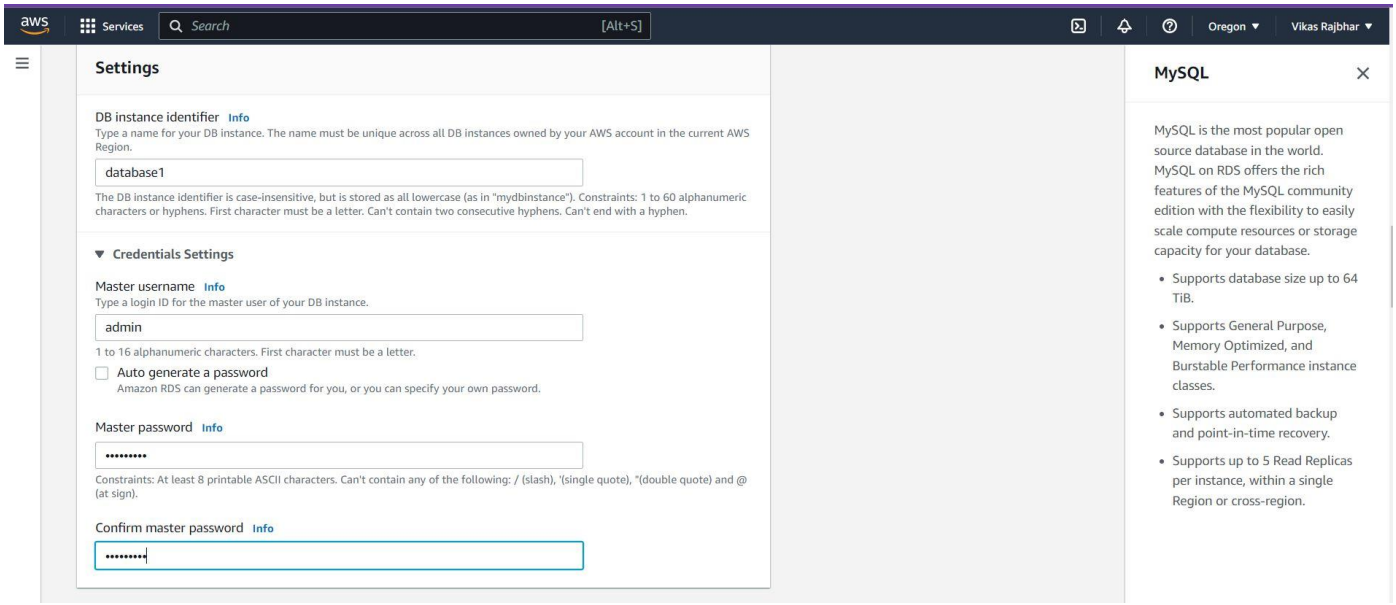


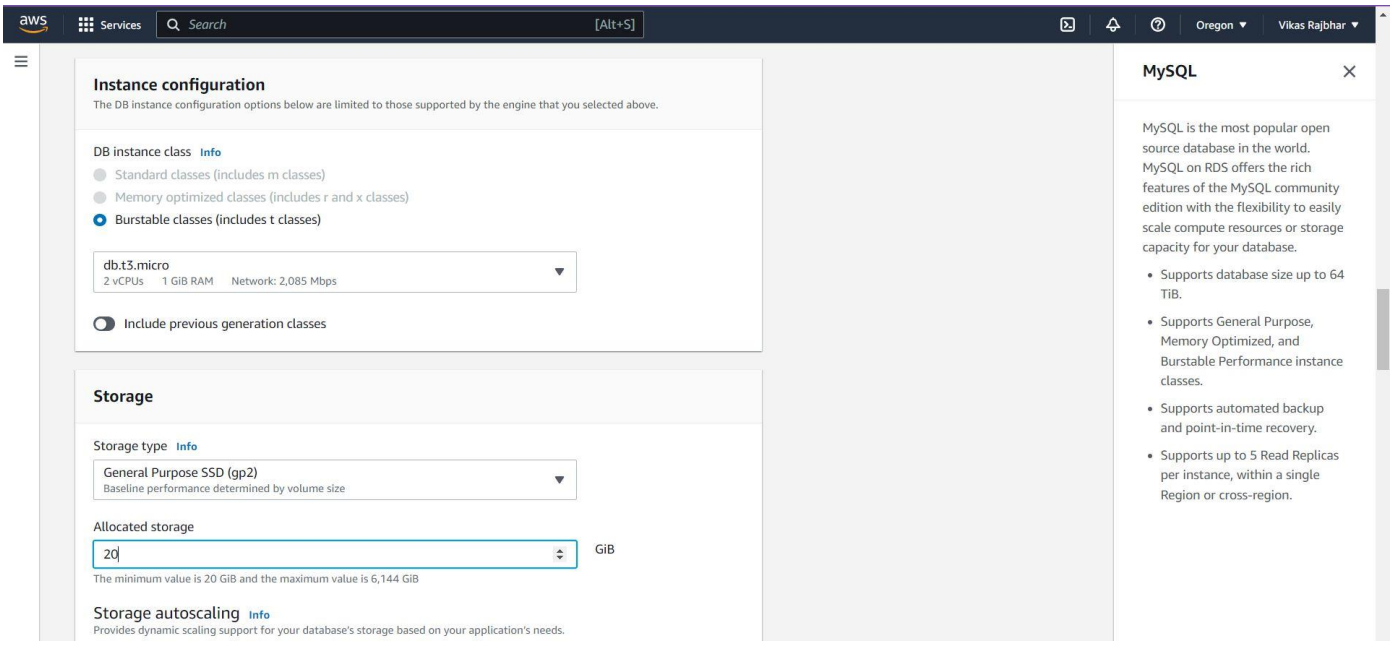
2. Create RDS using MySQL in AWS.

Create Database in RDS








aws
Services
Search
[Alt+S]
Oregon
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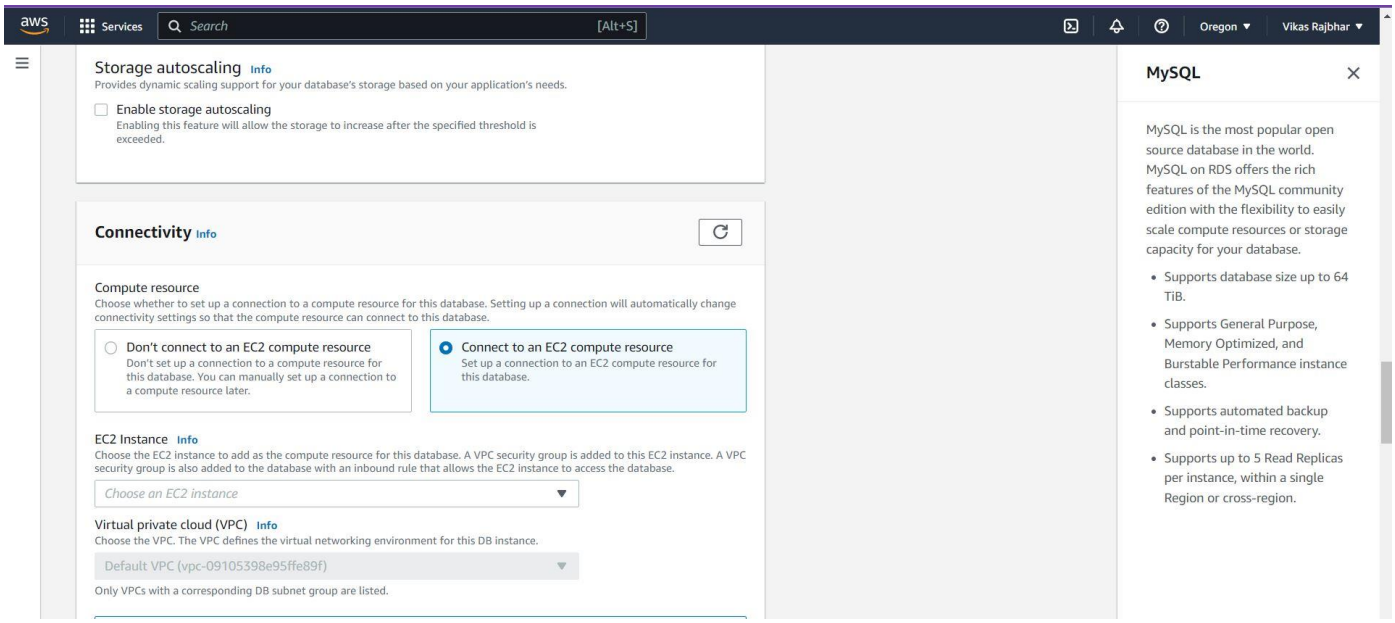
Instance configuration
The DB instance configuration options below are limited to those supported by the engine that you selected above.
DB instance class Info
Standard classes (includes m classes)
Memory optimized classes (includes r and x classes)
Burstable classes (includes t classes)
db.t3.micro
2 vCPUs 1 GiB RAM Network: 2,085 Mbps
Include previous generation classes
Storage
Storage type Info
General Purpose SSD (gp2)
Baseline performance determined by volume size
Allocated storage
20
GiB
The minimum value is 20 GiB and the maximum value is 6,144 GiB
Storage autoscaling Info
Provides dynamic scaling support for your database's storage based on your application's needs.
MySQL
MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.
Supports database size up to 64 TiB.
Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
Supports automated backup and point-in-time recovery.
Supports up to 5 Read Replicas per instance, within a single Region or cross-region.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Storage autoscaling Info
Provides dynamic scaling support for your database's storage based on your application's needs.
Enable storage autoscaling
Enabling this feature will allow the storage to increase after the specified threshold is exceeded.
Connectivity Info
Compute resource
Choose whether to set up a connection to a compute resource for this database. Setting up a connection will automatically change connectivity settings so that the compute resource can connect to this database.
Don't connect to an EC2 compute resource
Don't set up a connection to a compute resource for this database. You can manually set up a connection to a compute resource later.
Connect to an EC2 compute resource
Set up a connection to an EC2 compute resource for this database.
EC2 Instance Info
Choose the EC2 instance to add as the compute resource for this database. A VPC security group is added to this EC2 instance. A VPC security group is also added to the database with an inbound rule that allows the EC2 instance to access the database.
Choose an EC2 instance
Virtual private cloud (VPC) Info
Choose the VPC. The VPC defines the virtual networking environment for this DB instance.
Default VPC (vpc-09105398e95ffe89f)
Only VPCs with a corresponding DB subnet group are listed.
MySQL
MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.
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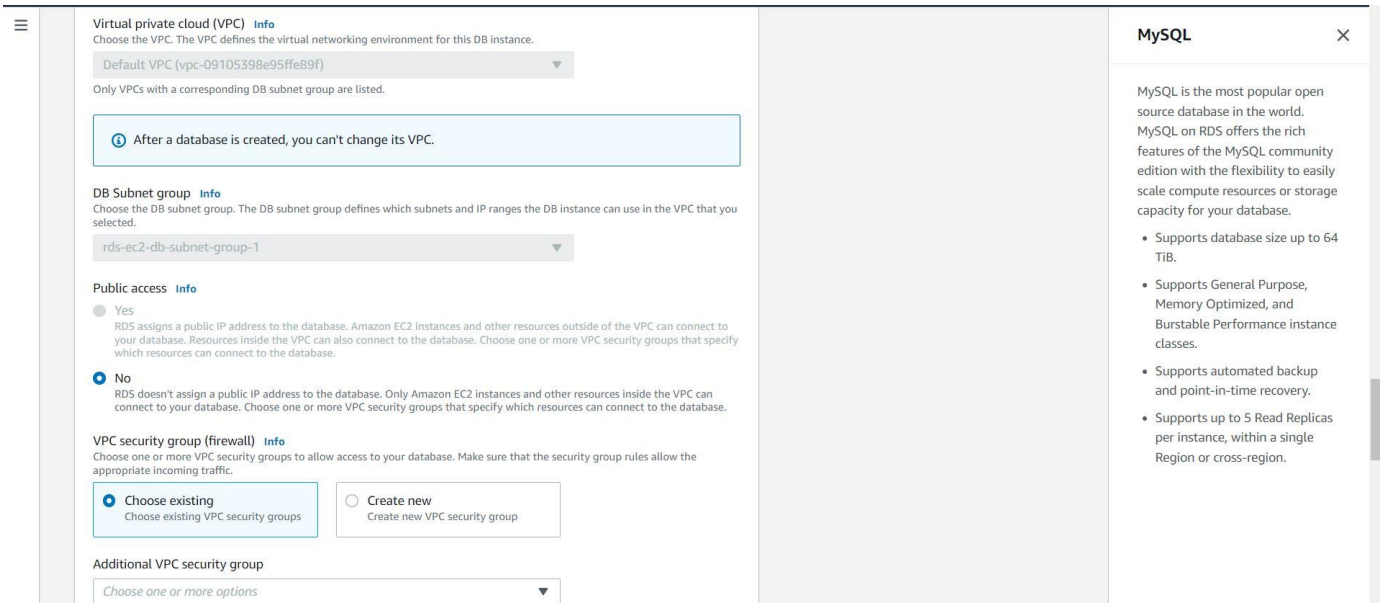
Virtual private cloud (VPC) Info
Choose the VPC. The VPC defines the virtual networking environment for this DB instance.
Default VPC (vpc-09105398e95ffe89f)
Only VPCs with a corresponding DB subnet group are listed.
After a database is created, you can't change its VPC.
DB Subnet group Info
Choose the DB subnet group. The DB subnet group defines which subnets and IP ranges the DB instance can use in the VPC that you selected.
rds-ec2-db-subnet-group-1
Public access Info
Yes
RDS assigns a public IP address to the database. Amazon EC2 instances and other resources outside of the VPC can connect to your database. Resources inside the VPC can also connect to the database. Choose one or more VPC security groups that specify which resources can connect to the database.
No
RDS doesn't assign a public IP address to the database. Only Amazon EC2 instances and other resources inside the VPC can connect to your database. Choose one or more VPC security groups that specify which resources can connect to the database.
VPC security group (firewall) Info
Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.
Choose existing
Choose existing VPC security groups
Create new
Create new VPC security group
Additional VPC security group
Choose one or more options
MySQL
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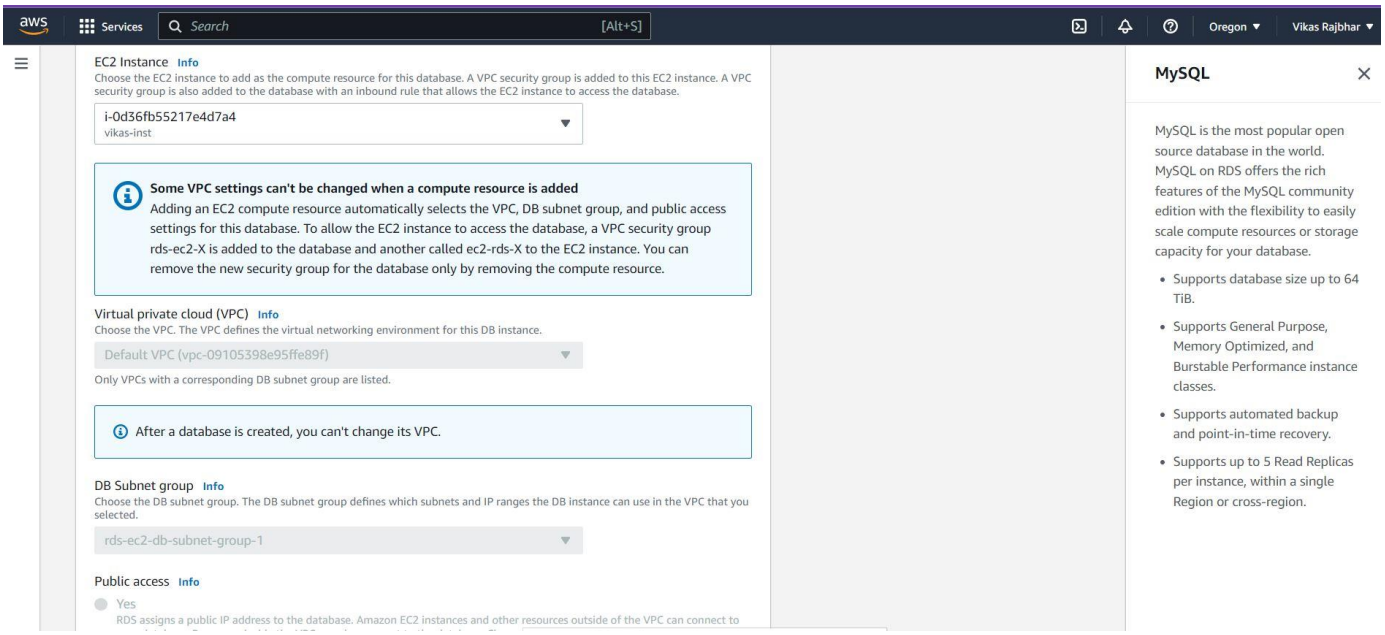
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EC2 Instance Info
Choose the EC2 instance to add as the compute resource for this database. A VPC security group is added to this EC2 instance. A VPC security group is also added to the database with an inbound rule that allows the EC2 instance to access the database.
i-0d36fb55217e4d7a4
vikas-inst
Some VPC settings can't be changed when a compute resource is added
Adding an EC2 compute resource automatically selects the VPC, DB subnet group, and public access settings for this database. To allow the EC2 instance to access the database, a VPC security group rds-ec2-X is added to the database and another called ec2-rds-X to the EC2 instance. You can remove the new security group for the database only by removing the compute resource.
Virtual private cloud (VPC) Info
Choose the VPC. The VPC defines the virtual networking environment for this DB instance.
Default VPC (vpc-09105398e95ffe89f)
Only VPCs with a corresponding DB subnet group are listed.
After a database is created, you can't change its VPC.
DB Subnet group Info
Choose the DB subnet group. The DB subnet group defines which subnets and IP ranges the DB instance can use in the VPC that you selected.
rds-ec2-db-subnet-group-1
Public access Info
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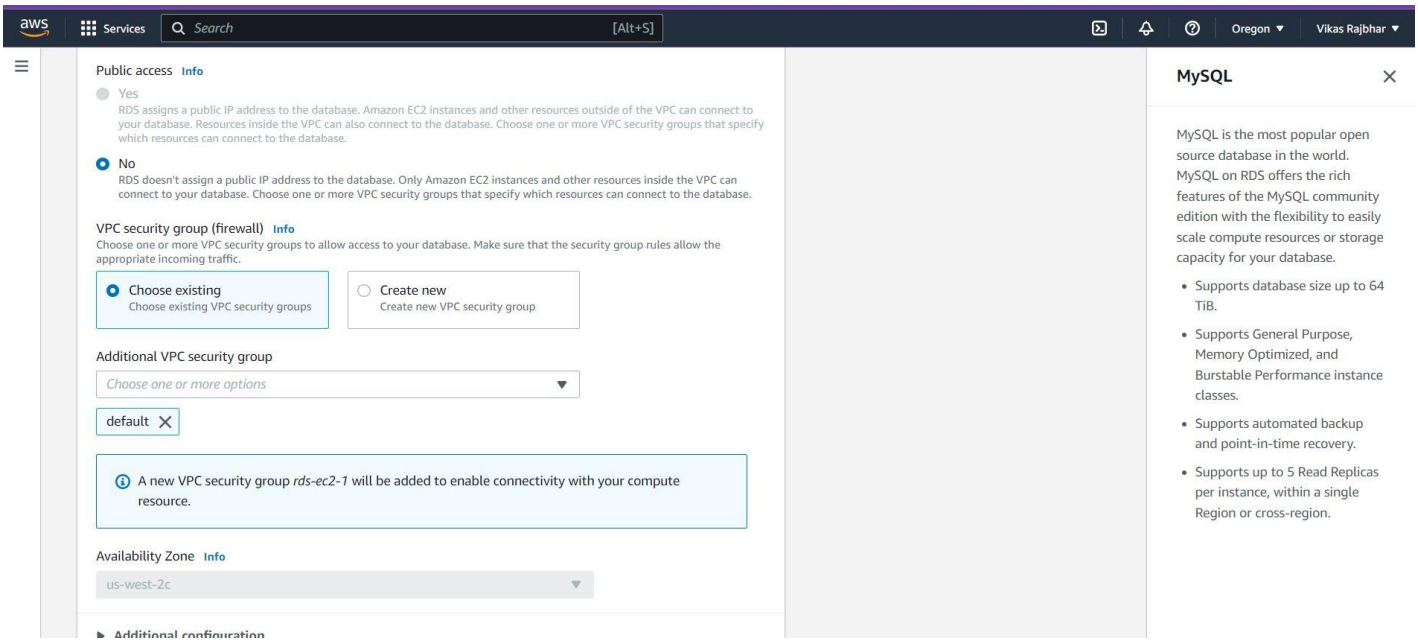
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No
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VPC security group (firewall) Info
Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.
Choose existing
Choose existing VPC security groups
Create new
Create new VPC security group
Additional VPC security group
Choose one or more options
default
A new VPC security group rds-ec2-1 will be added to enable connectivity with your compute resource.
Availability Zone Info
us-west-2c
Additional configuration
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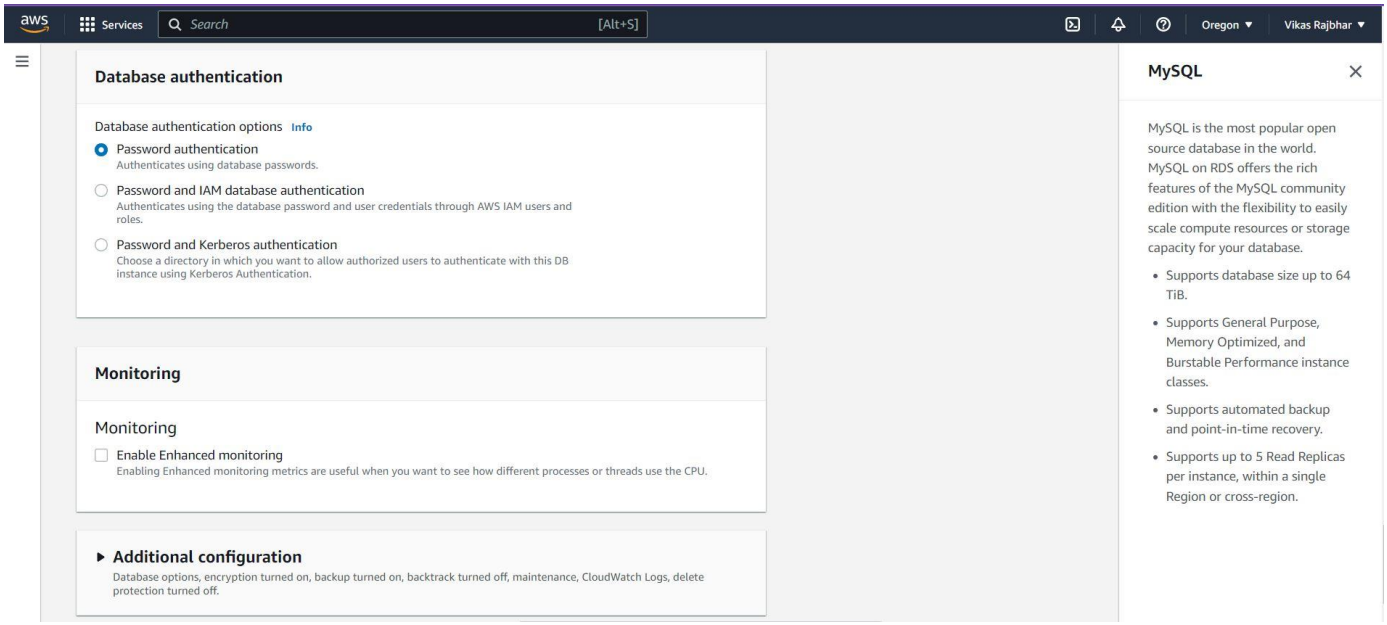
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Database authentication
Database authentication options Info
Password authentication
Authenticates using database passwords.
Password and IAM database authentication
Authenticates using the database password and user credentials through AWS IAM users and roles.
Password and Kerberos authentication
Choose a directory in which you want to allow authorized users to authenticate with this DB instance using Kerberos Authentication.
Monitoring
Monitoring
Enable Enhanced monitoring
Enabling Enhanced monitoring metrics are useful when you want to see how different processes or threads use the CPU.
Additional configuration
Database options, encryption turned on, backup turned on, backtrack turned off, maintenance, CloudWatch Logs, delete protection turned off.
MySQL
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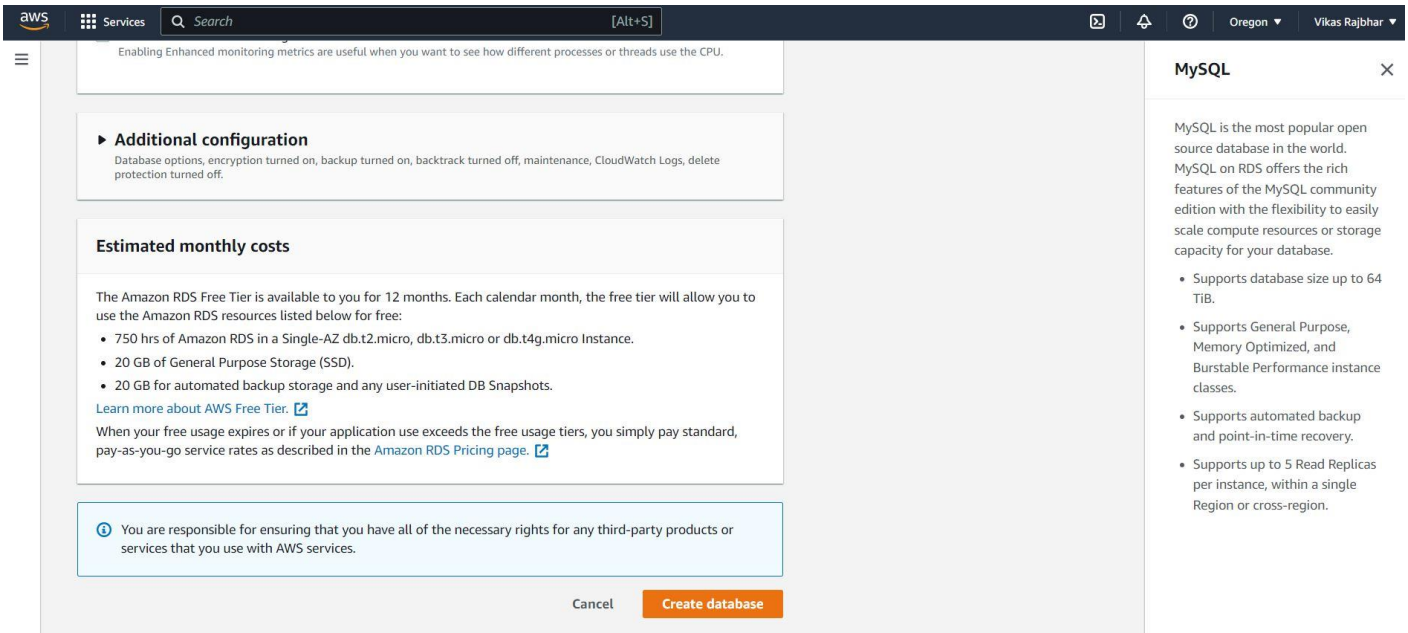
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Enabling Enhanced monitoring metrics are useful when you want to see how different processes or threads use the CPU.
Additional configuration
Database options, encryption turned on, backup turned on, backtrack turned off, maintenance, CloudWatch Logs, delete protection turned off.
Estimated monthly costs
The Amazon RDS Free Tier is available to you for 12 months. Each calendar month, the free tier will allow you to use the Amazon RDS resources listed below for free:
750 hrs of Amazon RDS in a Single-AZ db.t2.micro, db.t3.micro or db.t4g.micro Instance.
20 GB of General Purpose Storage (SSD).
20 GB for automated backup storage and any user-initiated DB Snapshots.
Learn more about AWS Free Tier.
When your free usage expires or if your application use exceeds the free usage tiers, you simply pay standard, pay-as-you-go service rates as described in the Amazon RDS Pricing page.
You are responsible for ensuring that you have all of the necessary rights for any third-party products or services that you use with AWS services.
Cancel
Create database
MySQL
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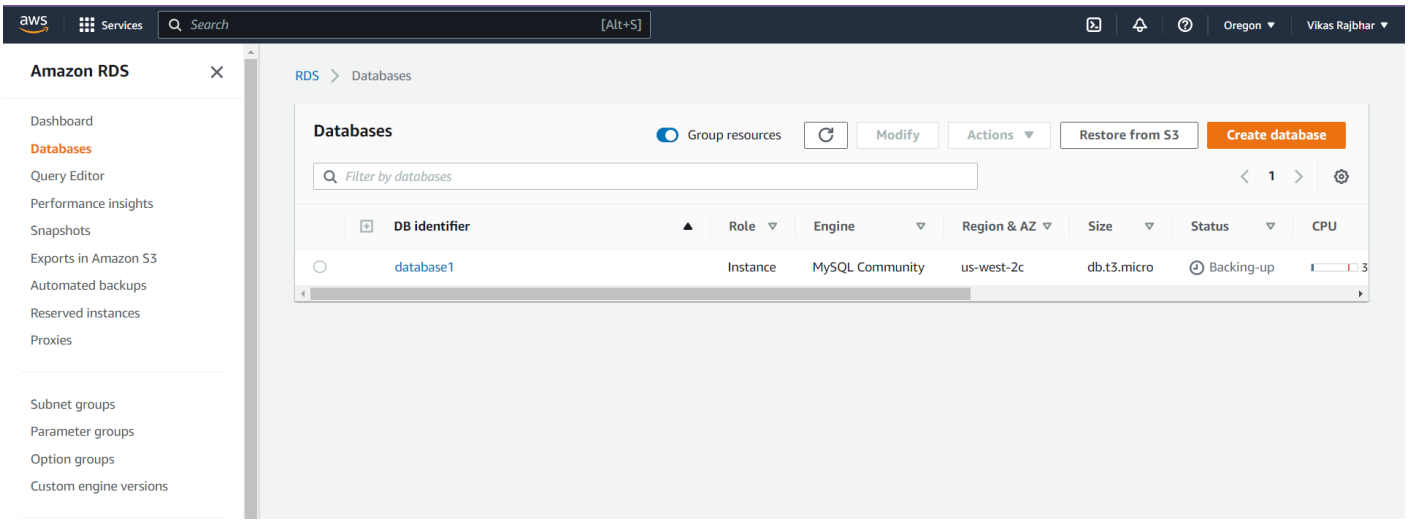
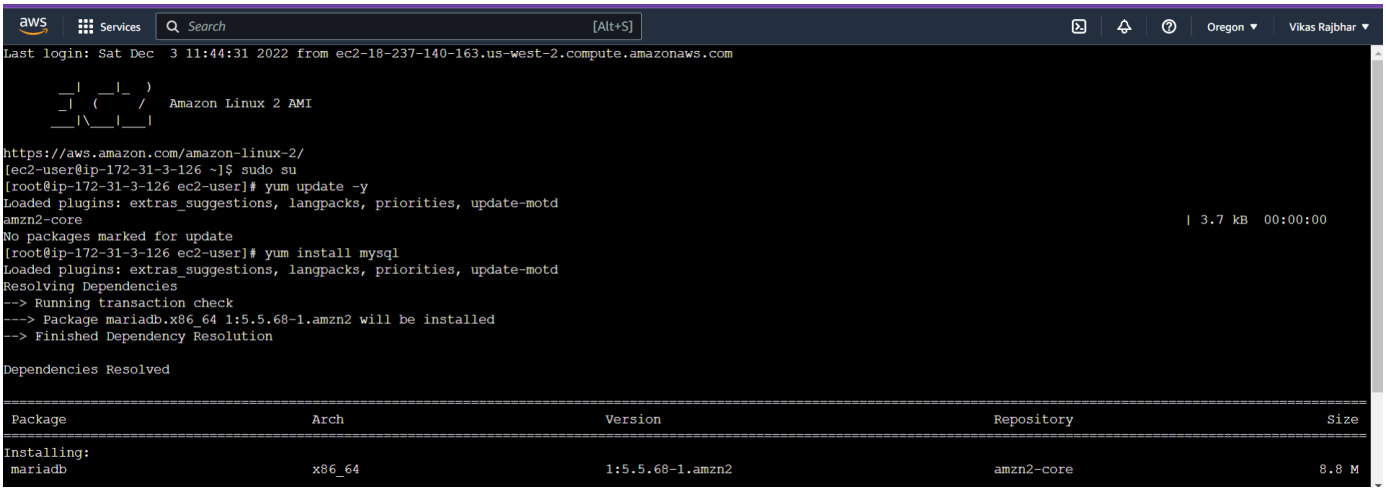


3. Connect RDS in AWS through SQL workbench and EC2 Instance.



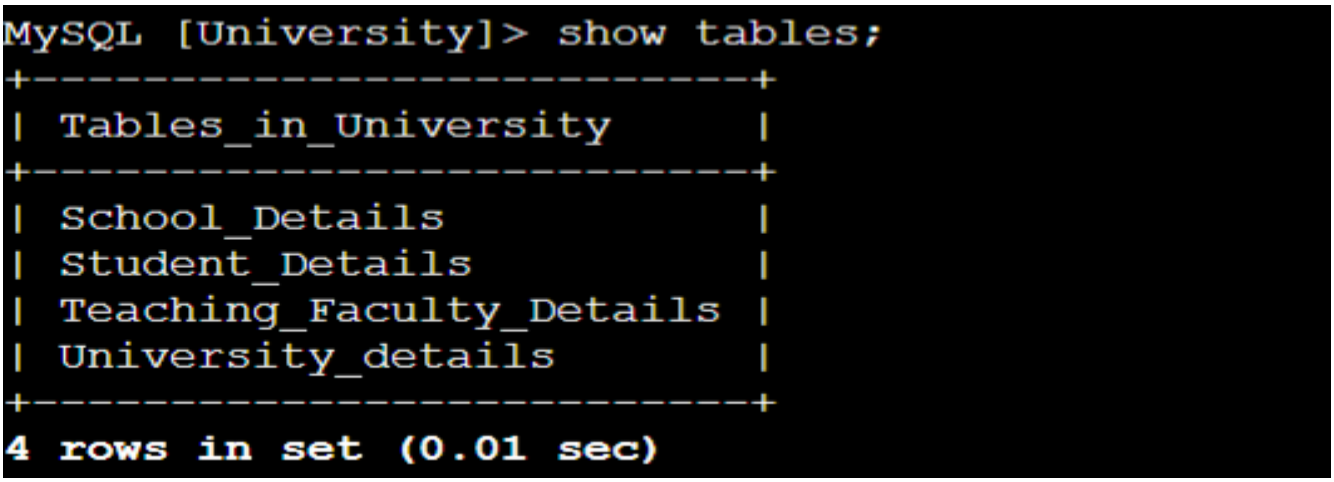
```
 Package                                 Arch                                    Version
Installing:
 mariadb                                 x86_64                                  1:5.5.68-1.amzn2

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
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : 1:mariadb-5.5.68-1.amzn2.x86_64
  Verifying  : 1:mariadb-5.5.68-1.amzn2.x86_64

Installed:
  mariadb.x86_64 1:5.5.68-1.amzn2

Complete!
[root@ip-172-31-3-126 ec2-user]# mysql -h database1.cdb8fzhbjvuc.us-west-2.rds.amazonaws.com -u admin -p
```

```
[root@ip-172-31-3-126 ec2-user]# mysql -h database1.cdb8fzhbjvuc.us-west-2.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 17
Server version: 8.0.28 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)]>
```

```
MySQL [(none)]> create database University
    -> ;
Query OK, 1 row affected (0.02 sec)

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 'database' at line
1
MySQL [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| University         |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.00 sec)
```

```
MySQL [(none)]> use University;
Database changed
MySQL [University]> create table University_details(school_id varchar(20)Primary Key, school_name varchar(20),teaching_staff int , nonteaching_staff int , student int);
Query OK, 0 rows affected (0.02 sec)

MySQL [University]> create table School_Details(School_id varchar(20),Dept_id varchar(20) primary knTeaching_staff int,Student int,foreign key (School_id) references Univer
sity_details(School_id));
Query OK, 0 rows affected (0.05 sec)
```

```
MySQL [University]> Create table Student_Details(School_id varchar(20),Dept_id varchar(20),Enrollment_no varchar(20) primary key,Dept_Name varchar(20),Student_Name varchar(
20),DoB varchar(20),Email_id varchar(20),phone_no int ,foreign key (School_id) references University_details(School_id),foreign Key (Dept_id) references School_Details(Dept
_id));
Query OK, 0 rows affected (0.04 sec)

MySQL [University]> create table Teaching_Faculty_Details(School_id varchar(20),Dept_id varchar(20),Faculty_code varchar(20) primary key, Dept_Name varchar(20),Teaching_Fac
ulty_name varchar(20),DoB varchar(20),Email_id varchar(20),phone_no int,foreign key (School_id) references University_details(school_id),foreign key (Dept_id) references Sc
hool_Details(Dept_id));
Query OK, 0 rows affected (0.04 sec)
```



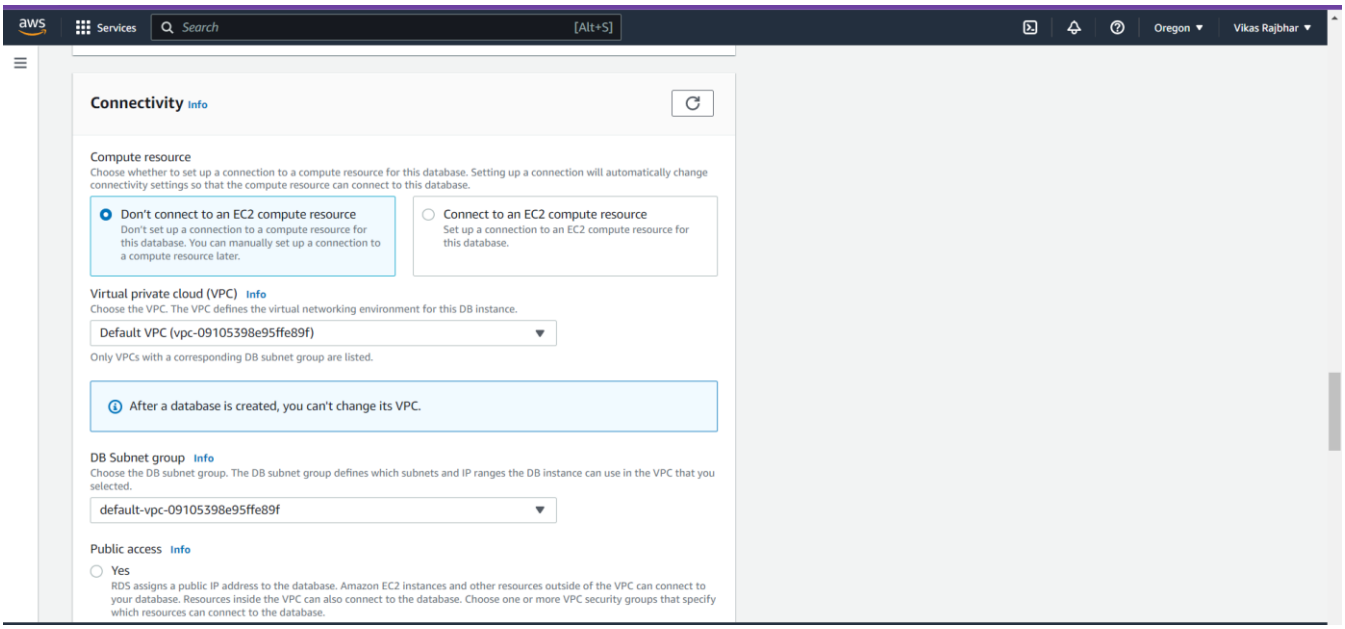
create table University_details(school_id varchar(20)Primary Key, school_name varchar(20),teaching_staff int , nonteaching_staff int , student int);

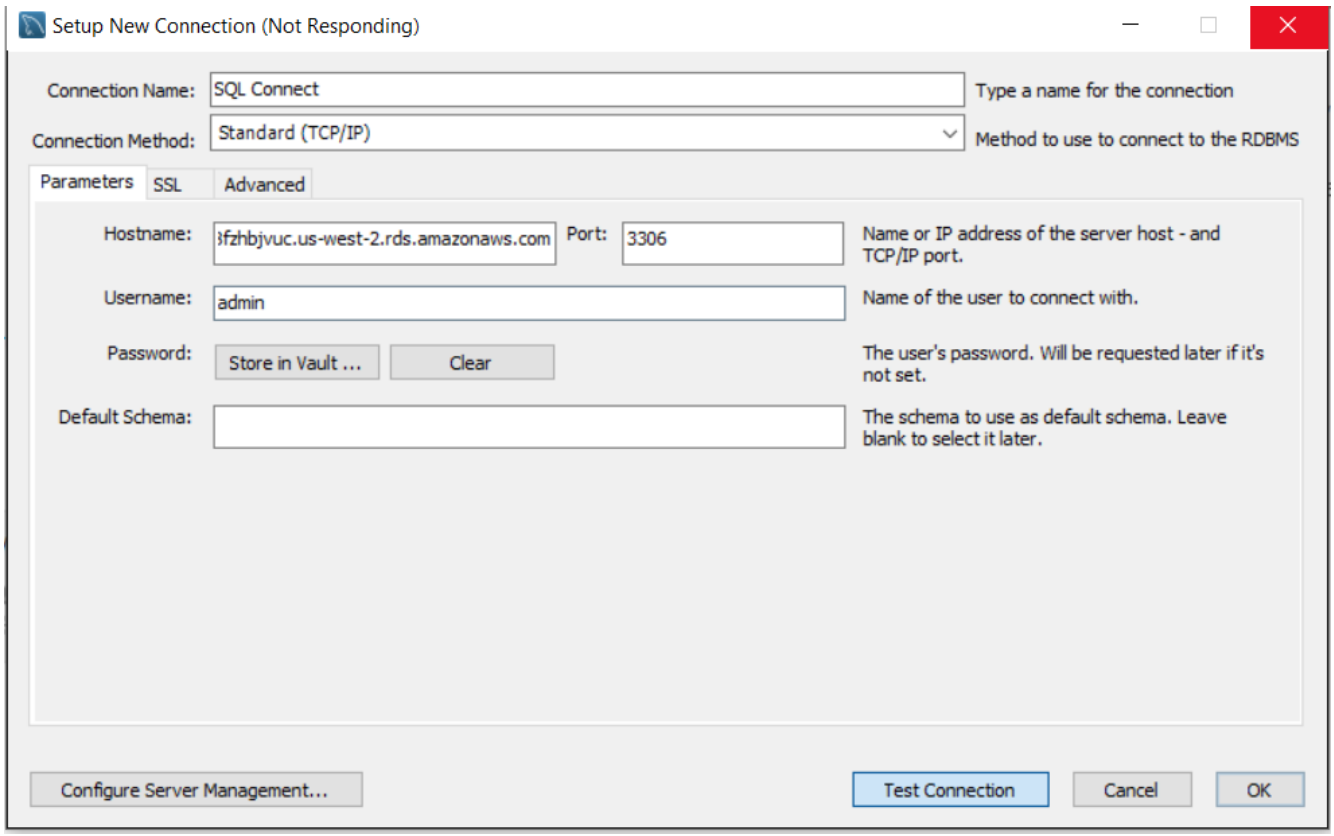
create table School_Details(School_id varchar(20),Dept_id varchar(20) primary key ,Dept_Name varchar(20),School_Name varchar(20),Teaching_Staff int,NonTeaching_staff int,Student int,foreign key (School_id) references University_details(School_id));

Create table Student_Details(School_id varchar(20),Dept_id varchar(20),Enrollment_no varchar(20) primary key,Dept_Name varchar(20),Student_Name varchar(20),DoB varchar(20),Email_id varchar(20),phone_no int ,foreign key (School_id) references University_details(School_id),foreign Key (Dept_id) references School_Details(Dept_id));

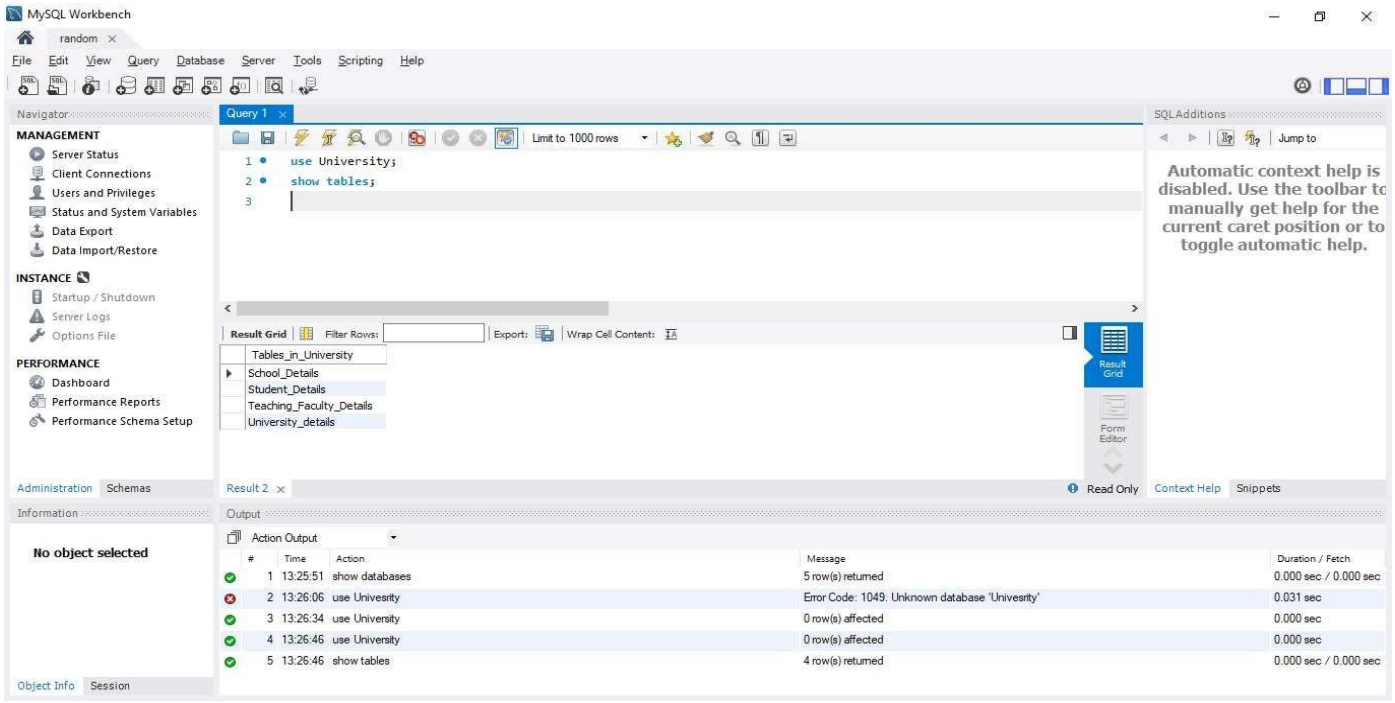
create table Teaching_Faculty_Details(School_id varchar(20),Dept_id varchar(20),Faculty_code varchar(20) primary key, Dept_Name varchar(20),Teaching_Faculty_name varchar(20),DoB varchar(20),Email_id varchar(20),phone_no int,foreign key (School_id) references University_details(school_id),foreign key (Dept_id) references School_Details(Dept_id));

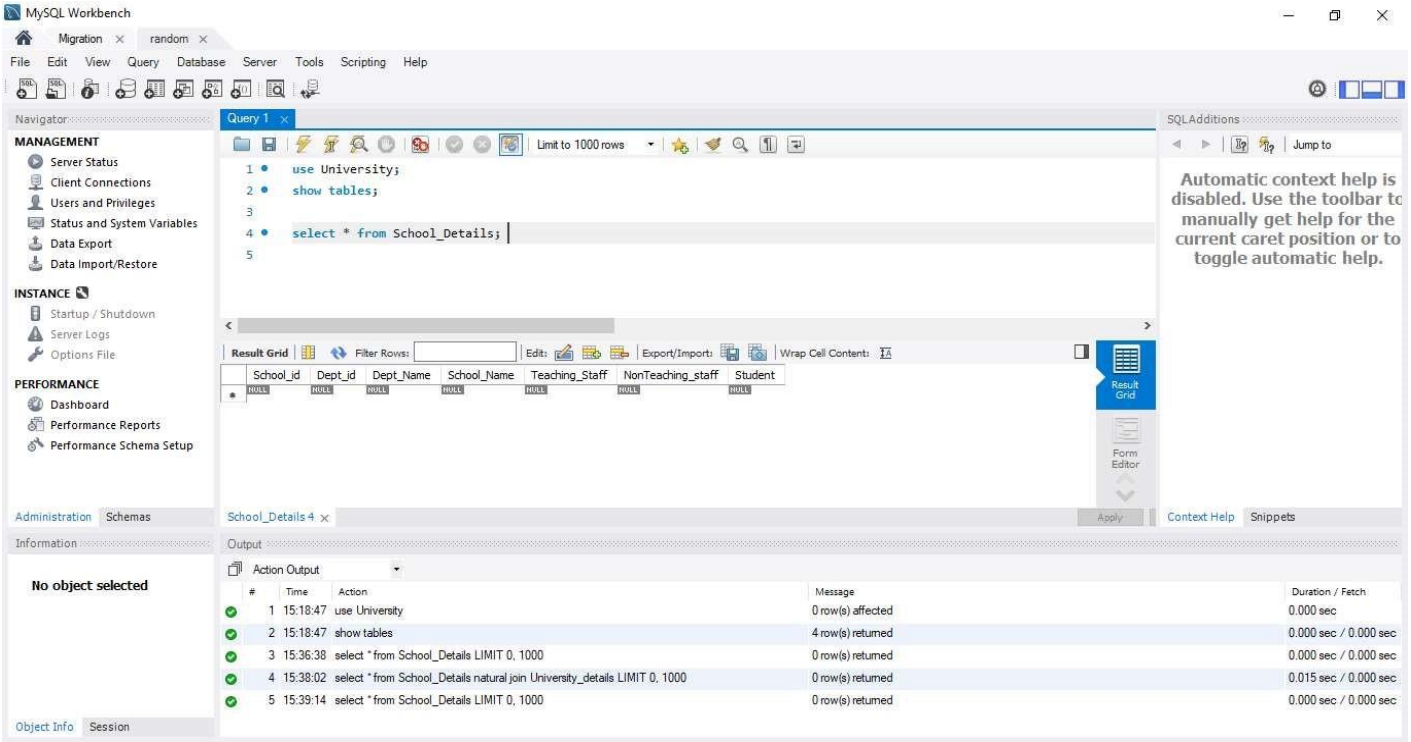
B) Connect using Workbench now just we need to change in previous step and connect with endpoint of database with password.

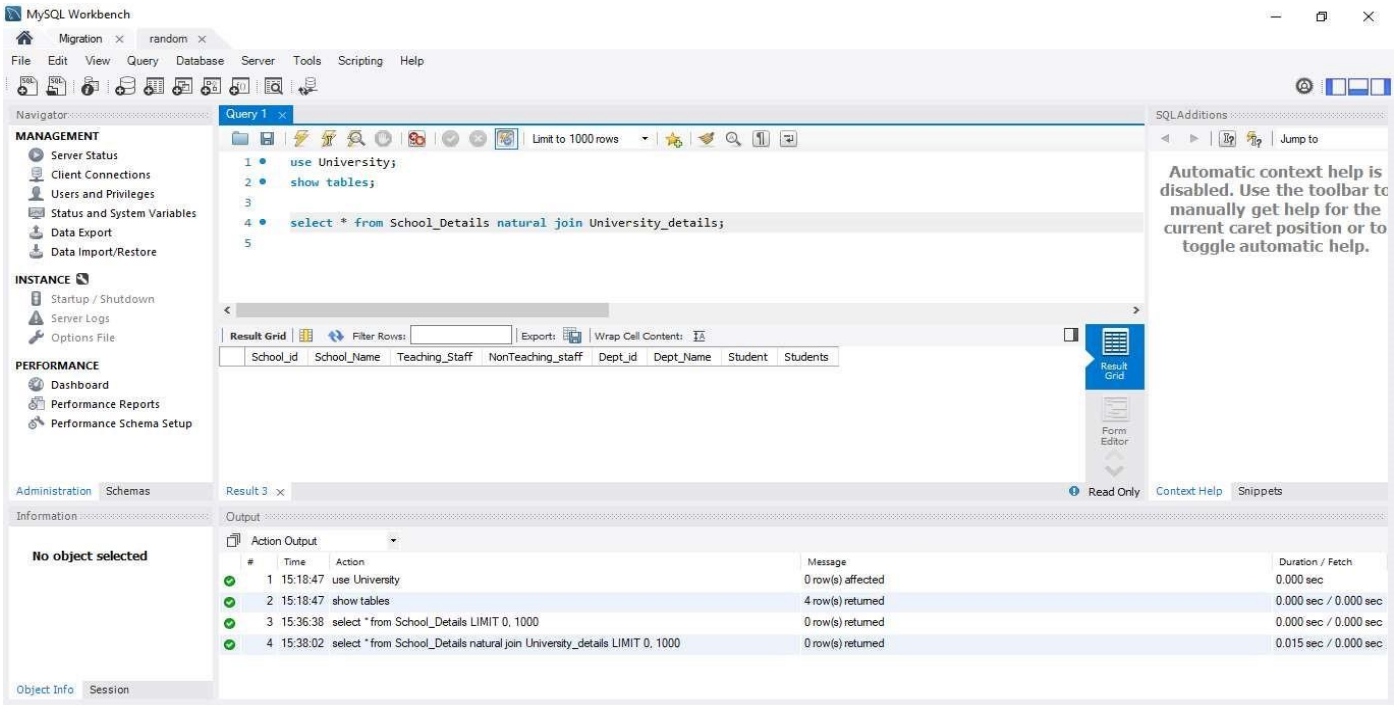




Then result can be given as after connection:


MySQL Workbench
random
File Edit View Query Database Server Tools Scripting Help
Navigator
MANAGEMENT
Server Status
Client Connections
Users and Privileges
Status and System Variables
Data Export
Data Import/Restore
INSTANCE
Startup / Shutdown
Server Logs
Options File
PERFORMANCE
Dashboard
Performance Reports
Performance Schema Setup
Administration Schemas
Information
No object selected
Object Info Session
Query 1
Limit to 1000 rows
1 use University;
2 show tables;
3
Result Grid Filter Rows: Export: Wrap Cell Content:
Tables_in_University
School_Details
Student_Details
Teaching_Faculty_Details
University_details
Result Grid
Form Editor
Result 2
Read Only
SQLAdditions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 13:25:51 show databases 5 row(s) returned 0.000 sec / 0.000 sec
2 13:26:06 use Univesrity Error Code: 1049. Unknown database 'Univesrity' 0.031 sec
3 13:26:34 use University 0 row(s) affected 0.000 sec
4 13:26:46 use University 0 row(s) affected 0.000 sec
5 13:26:46 show tables 4 row(s) returned 0.000 sec / 0.000 sec


MySQL Workbench
Migration
random
File Edit View Query Database Server Tools Scripting Help
Navigator
MANAGEMENT
Server Status
Client Connections
Users and Privileges
Status and System Variables
Data Export
Data Import/Restore
INSTANCE
Startup / Shutdown
Server Logs
Options File
PERFORMANCE
Dashboard
Performance Reports
Performance Schema Setup
Administration Schemas
Information
No object selected
Object Info Session
Query 1
Limit to 1000 rows
1 use University;
2 show tables;
3
4 select * from School_Details;
5
Result Grid Filter Rows: Edit: Export/Import: Wrap Cell Content:
School_id Dept_id Dept_Name School_Name Teaching_Staff NonTeaching_staff Student
Result Grid
Form Editor
School_Details 4
Apply
SQLAdditions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 15:18:47 use University 0 row(s) affected 0.000 sec
2 15:18:47 show tables 4 row(s) returned 0.000 sec / 0.000 sec
3 15:36:38 select * from School_Details LIMIT 0, 1000 0 row(s) returned 0.000 sec / 0.000 sec
4 15:38:02 select * from School_Details natural join University_details LIMIT 0, 1000 0 row(s) returned 0.015 sec / 0.000 sec
5 15:39:14 select * from School_Details LIMIT 0, 1000 0 row(s) returned 0.000 sec / 0.000 sec


MySQL Workbench
Migration
random
File Edit View Query Database Server Tools Scripting Help
Navigator
MANAGEMENT
Server Status
Client Connections
Users and Privileges
Status and System Variables
Data Export
Data Import/Restore
INSTANCE
Startup / Shutdown
Server Logs
Options File
PERFORMANCE
Dashboard
Performance Reports
Performance Schema Setup
Administration Schemas
Information
No object selected
Object Info Session
Query 1
Limit to 1000 rows
1 use University;
2 show tables;
3
4 select * from School_Details natural join University_details;
5
Result Grid Filter Rows: Export: Wrap Cell Content:
School_id School_Name Teaching_Staff NonTeaching_staff Dept_id Dept_Name Student Students
Result Grid
Form Editor
Result 3
Read Only
SQL Additions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 15:18:47 use University 0 row(s) affected 0.000 sec
2 15:18:47 show tables 4 row(s) returned 0.000 sec / 0.000 sec
3 15:36:38 select * from School_Details LIMIT 0, 1000 0 row(s) returned 0.000 sec / 0.000 sec
4 15:38:02 select * from School_Details natural join University_details LIMIT 0, 1000 0 row(s) returned 0.015 sec / 0.000 sec