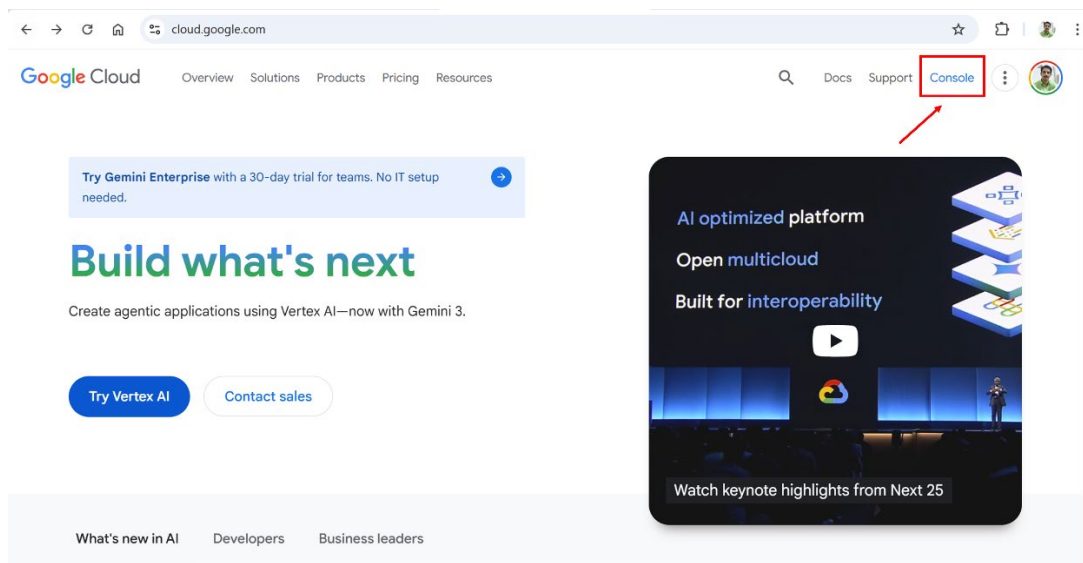


## CLOUD COMPUTING LABORATORY

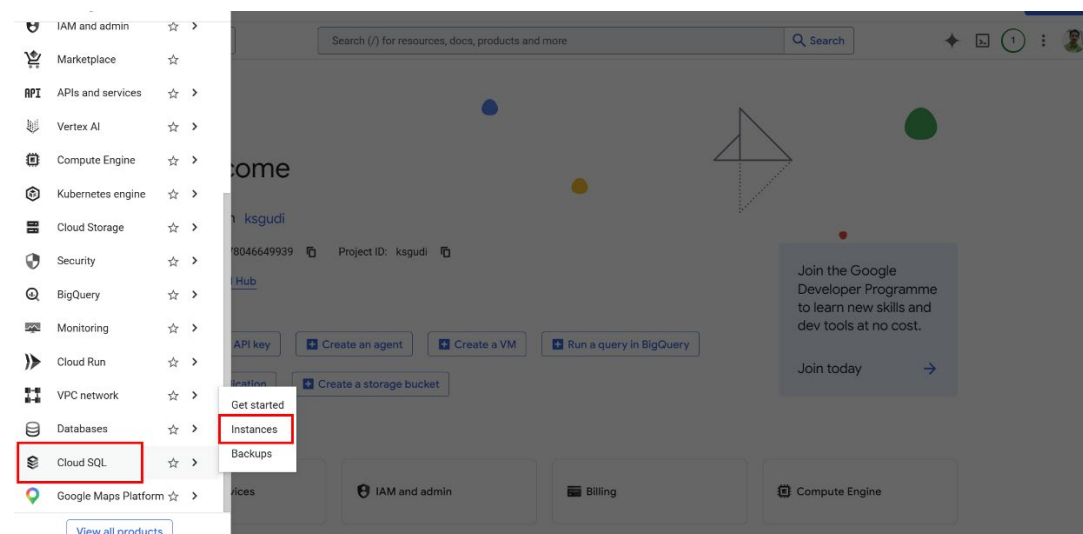
### Experiment – 6:

*Cloud SQL for MySQL: Discover how Google Cloud SQL for MySQL provide automated management and high availability for MySQL databases.*

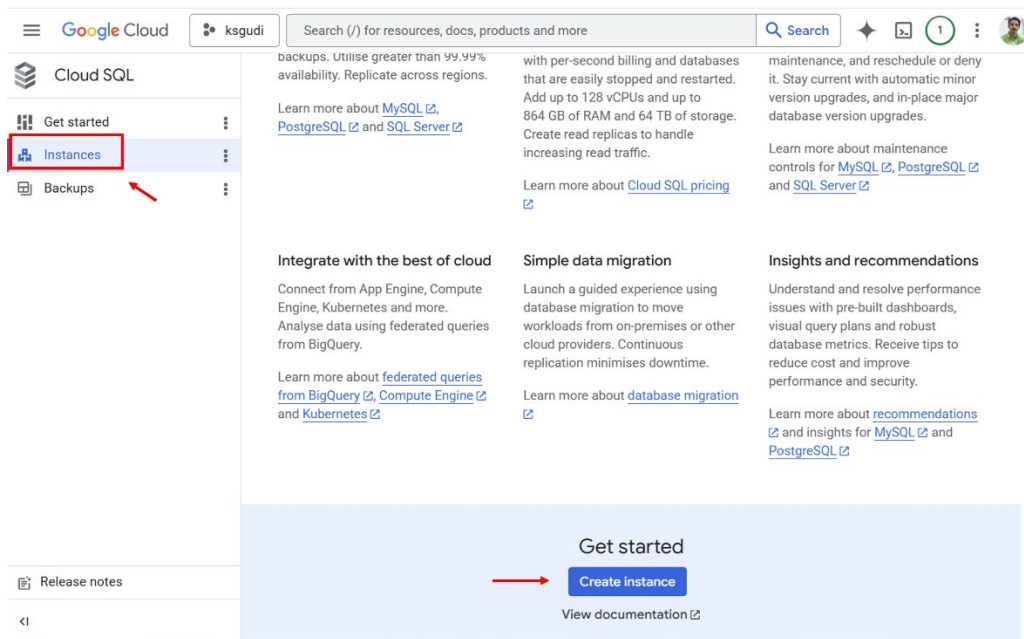
**Step 1:** From the Google Cloud homepage, click on **Console** to open the Google Cloud Console.



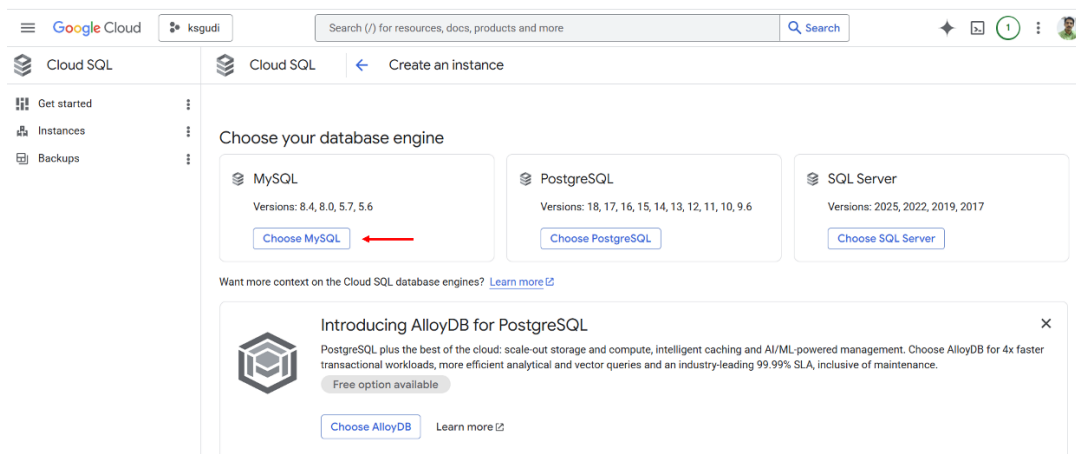
**Step 2:** From the Google Cloud Console, click on the navigation menu, select **Cloud SQL**, and then click on **Instances**.



### Step 3: Click Create Instance to start creating a new database instance.



### Step 4: Choose MySQL as the database engine.



## Step 5: Select Enterprise edition with Sandbox preset.

**Cloud SQL** | Create a MySQL instance

Choose a Cloud SQL edition  
A Cloud SQL edition determines foundational characteristics of your instance. Choose the best option for your price and performance needs. [Learn more](#)

Enterprise Plus

- 99.99% availability SLA
- Sub-second planned maintenance downtime
- Near-zero downtime instance scale-up
- Performance-optimised machines
- Up to 35 days point-in-time recovery window
- Up to 3x higher read throughput with data cache
- Advanced disaster recovery with easy switchback
- Support for managed connection pool

Enterprise

- 99.95% availability SLA
- Less than 60 seconds planned maintenance downtime
- General purpose machines
- Up to 7 days point-in-time recovery window

Choose a preset for this edition. Presets can be customised later as needed.

Edition preset: Sandbox

**Summary**

Cloud SQL edition	Enterprise
Region	us-central1 (Iowa)
DB version	MySQL 8.4
Machine type	db-custom-2-8192
vCPUs	2 vCPU
RAM	8 GB
Data cache	Disabled
Storage	10 GB SSD
Connections	Public IP
Backup	Automated
Availability	Single zone
Point-in-time recovery	Enabled
Network throughput (MB/s)	500 of 500
IOPS	Read: 6,300 of 15,000 Write: 6,300 of 15,000
Disk throughput (MB/s)	Read: 240.0 of 240.0 Write: 240.0 of 240.0

**Pricing estimate (without discounts)**  
These items represent Cloud SQL compute, memory and storage resources only, and reflect how you configured your instance so far. Discounts not included in estimate. [Learn more](#)

- Enter the **Instance ID** (e.g., cclab), set a password (or select **No password**), choose **Region** (us-centrall - Iowa) with **Single zone**

**Cloud SQL** | Create a MySQL instance

Instance info

Database version \* MySQL 8.4

Instance ID \* cclab

Use lowercase letters, numbers and hyphens. Start with a letter.

Password \* ..... Generate

Set a password for the root user. [Learn more](#)

No password

- Must contain an uppercase letter, lowercase letter, number and non-alphanumeric character
- Must not contain the username
- Must be at least 8 characters long

Password policy

Choose region and zonal availability

For better performance, keep your data close to the services that need it. Region is permanent, while zone can be changed any time.

Region us-central1 (Iowa)

Zonal availability  Single zone  
In case of outage, no failover. Not recommended for production.

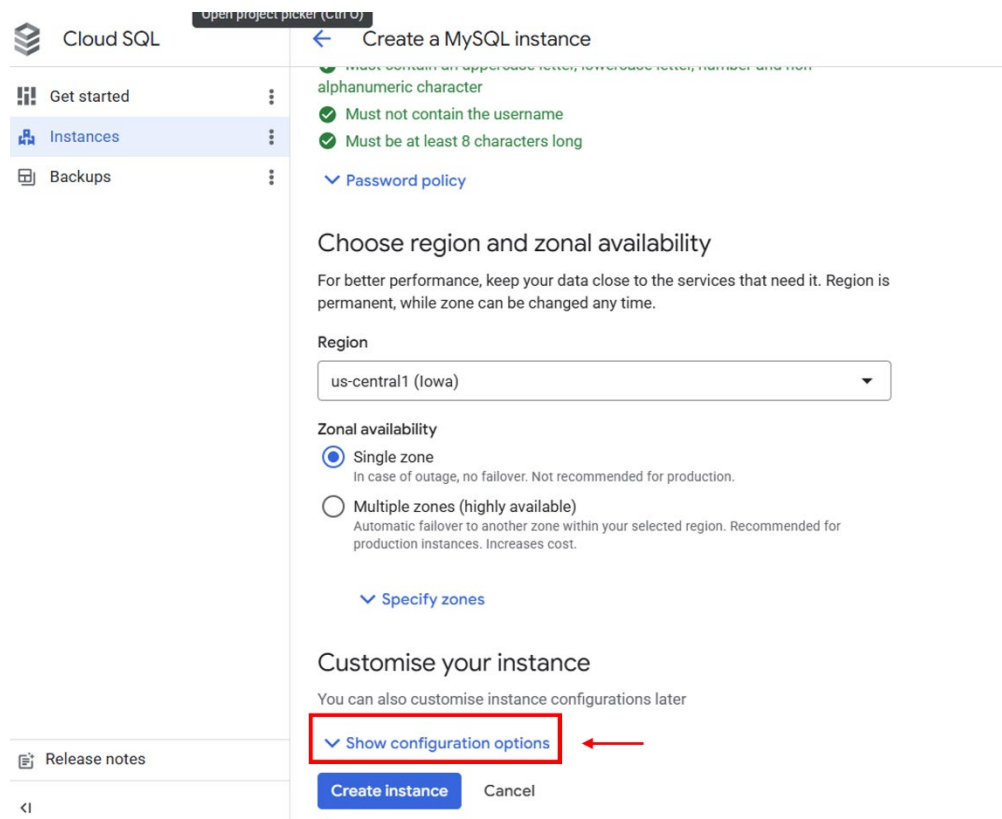
**Summary**

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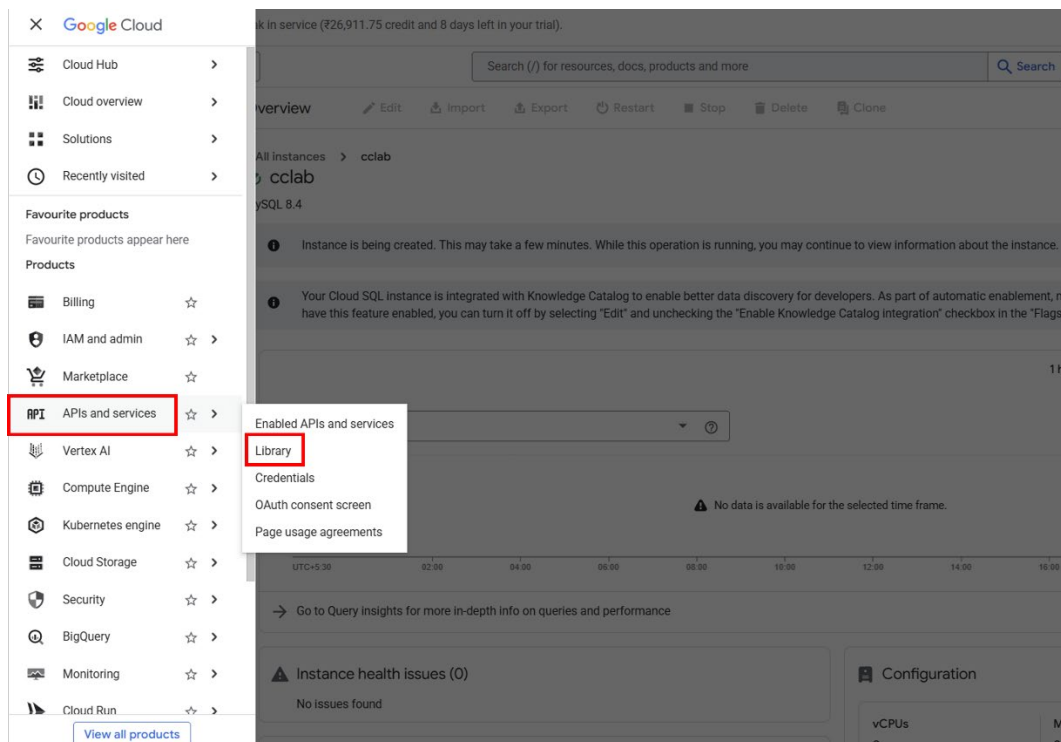
**Pricing estimate (without discounts)**  
These items represent Cloud SQL compute, memory and storage resources only, and reflect how you configured your instance so far. Discounts not included in estimate. [Learn more](#)

Item	Hourly cost (estimate)
------	------------------------

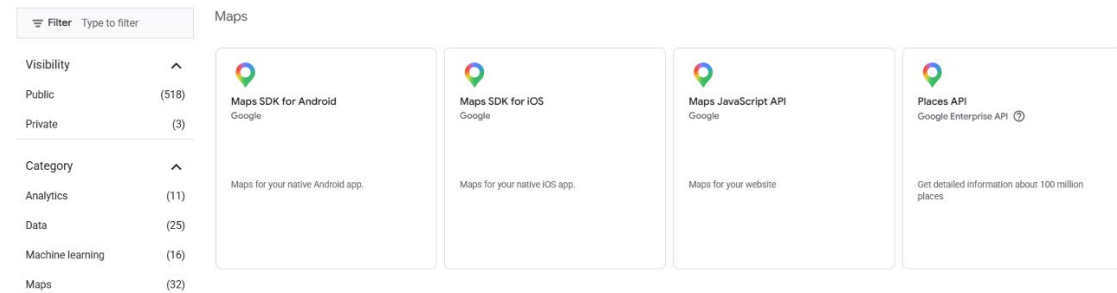
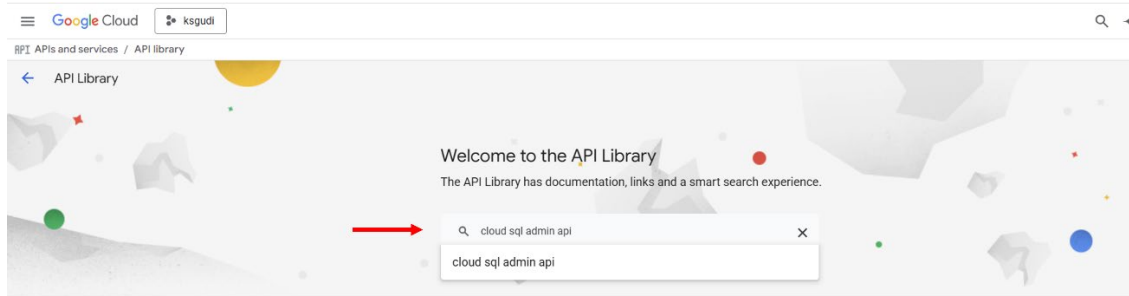
- Expand configuration options and keep default settings (including data protection), then click **Create Instance**.



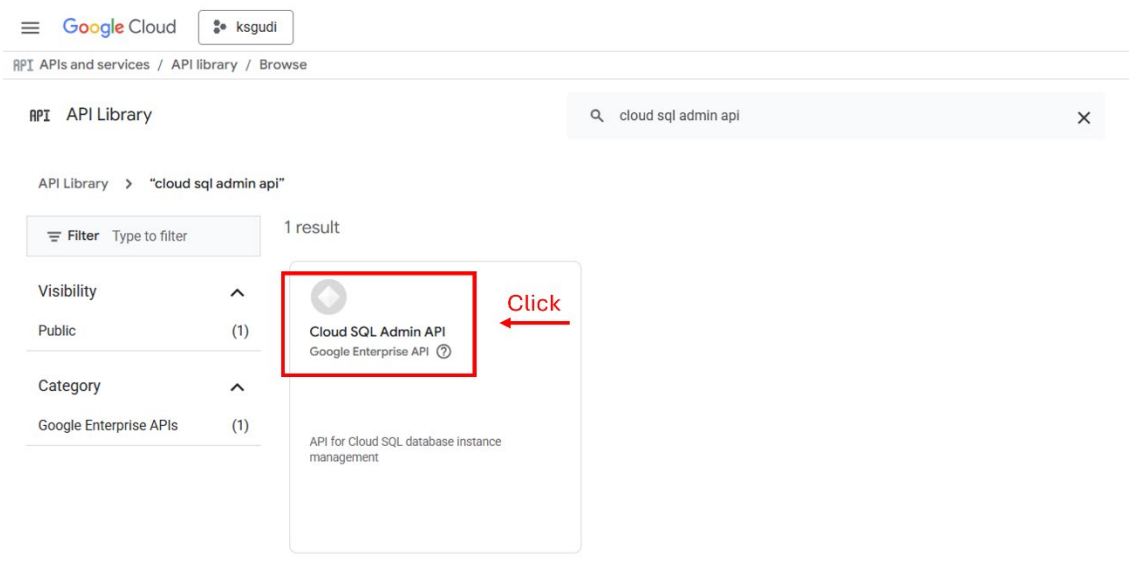
**Step 6: Navigate to APIs & Services → Library from the navigation menu.**



## Step 7: Search for “Cloud SQL Admin API” in the API Library search bar.




- Click on **Cloud SQL Admin API** from the search results.



[Google Cloud Marketplace Terms of Service](#)

- Click **Enable** (if not already enabled) or verify that the **Cloud SQL Admin API is enabled**.

← Product details



## Cloud SQL Admin API

Google Enterprise API

API for Cloud SQL database instance management

Manage
Try this API ↗
✓ API Enabled

Overview
Documentation
Related products

### Overview

API for Cloud SQL database instance management

### Additional details

Type: [SaaS & APIs](#)  
 Last product update: 16/09/2025  
 Category: [Google Enterprise APIs](#)  
 Service name: sqladmin.googleapis.com

### Tutorials and documentation

[Learn more ↗](#)

- Go to **Cloud SQL → Instances** and verify that the instance is created successfully. Click the **Back arrow** to return to the overview page

← → ↻ 🏠 🌐 console.cloud.google.com/apis/api/sqladmin.googleapis.com/metrics?project=ksgudi 🔍

Upgrade your account to avoid a break in service (₹26,911.75 credit and 8 days left in your trial).


Google Cloud ksgudi Search (/) for resources, docs, products and more 🔍 Search

API APIs and services

- Enabled APIs and services
- Library
- Credentials
- OAuth consent screen
- Page usage agreements

← API/Service details Disable API

To call this API from your own applications, you may need to create credentials.



### Cloud SQL Admin API

API for Cloud SQL database instance management

By Google Enterprise API

Service name	Type	Status	Documentation
sqladmin.googleapis.com	Public API	Enabled	<a href="#">Learn more ↗</a>

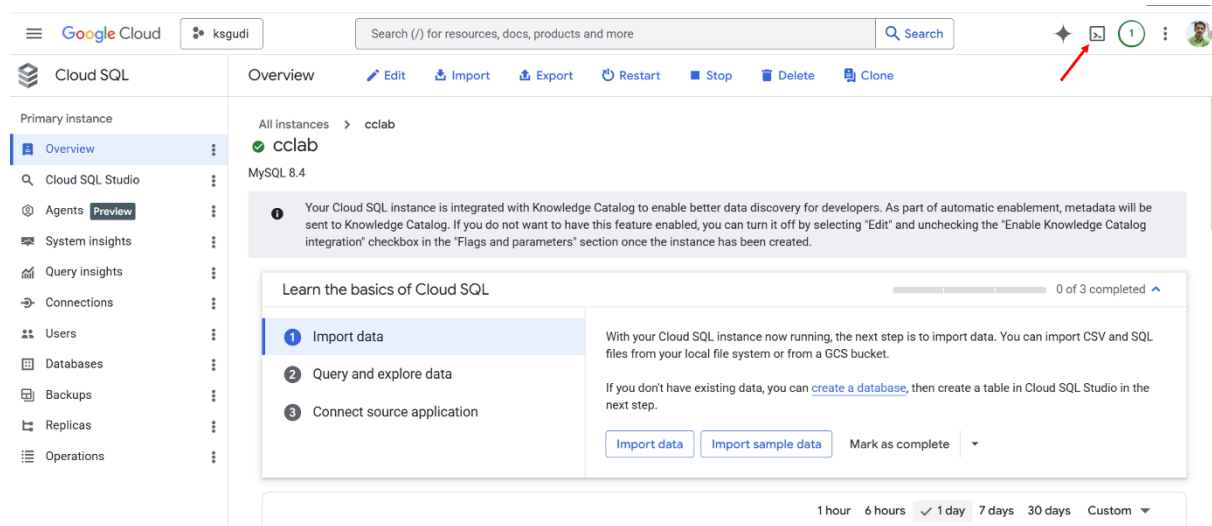
Metrics Quotas and system limits Credentials

Select graphs: 4 Graphs 1 hour 6 hours 12 hours 1 day

Filters: Versions: v1 and v1beta4 Credentials: App Engine default serv... Methods: 172 options selected

Traffic by response code

## Step 8: Open Cloud Shell Terminal from the console.



The screenshot shows the Google Cloud console interface for a Cloud SQL instance named 'cclab'. The instance is running MySQL 8.4. The 'Overview' page displays a notification about Knowledge Catalog integration and a 'Learn the basics of Cloud SQL' section with steps: 1. Import data, 2. Query and explore data, and 3. Connect source application. A red arrow points to the 'Open Cloud Shell' button in the top right corner of the console interface.

## Step 9: Connect to the MySQL instance using:

```
gcloud sql connect <instance-name> --user=root
```

- Enter the password (if set) and confirm successful connection to the MySQL prompt.



The screenshot shows the Google Cloud console interface with the Cloud Shell terminal window open. The terminal output shows the successful execution of the 'gcloud sql connect' command, resulting in a MySQL prompt. The output includes the following text:

```
Welcome to Cloud Shell! Type "help" to get started, or type "gemini" to try prompting with Gemini CLI.
Your Cloud Platform project in this session is set to ksgudi.
Use `gcloud config set project [PROJECT_ID]` to change to a different project.
krishna_gudi@cloudshell:~ (ksgudi) $ gcloud sql connect cloudlab --user=root
Starting Cloud SQL Proxy: [/usr/bin/cloud-sql-proxy ksgudi:us-central1:cloudlab --port 9470]
2026/04/19 18:08:24 Authorizing with Application Default Credentials
2026/04/19 18:08:24 [ksgudi:us-central1:cloudlab] Listening on 127.0.0.1:9470
2026/04/19 18:08:24 The proxy has started successfully and is ready for new connections!
Connecting to database with SQL user [root].Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 31
Server version: 8.0.44-google (Google)

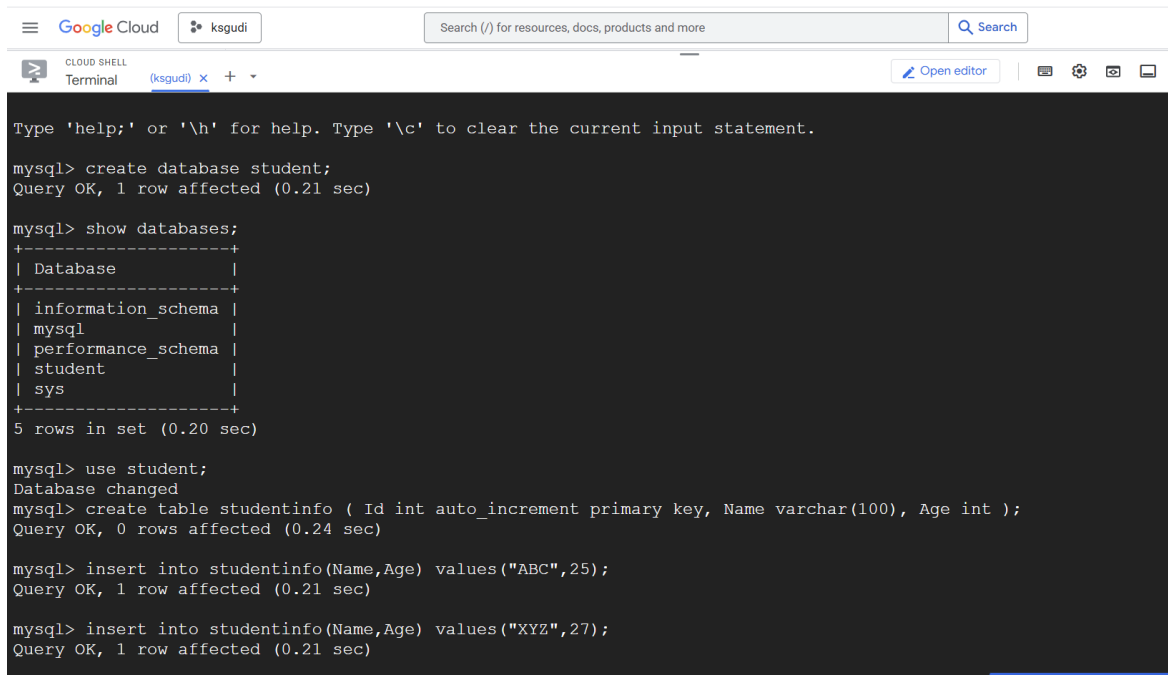
Copyright (c) 2000, 2026, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

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

mysql>
```

**Step 10:** Execute SQL commands to create a database, create table, and insert records.



```
mysql> create database student;
Query OK, 1 row affected (0.21 sec)

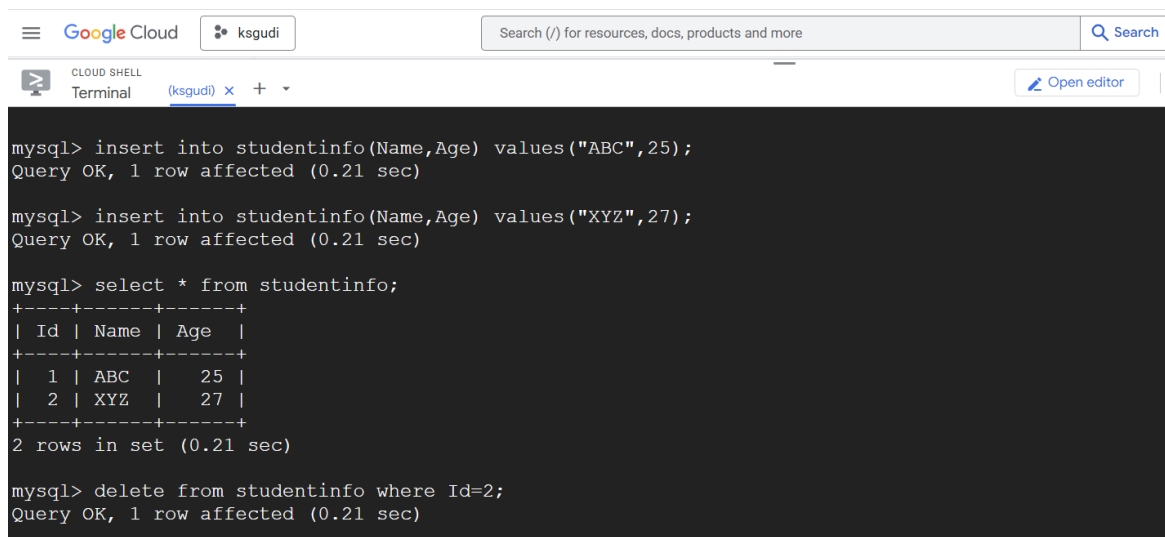
mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| student |
| sys |
+-----+
5 rows in set (0.20 sec)

mysql> use student;
Database changed
mysql> create table studentinfo ( Id int auto_increment primary key, Name varchar(100), Age int );
Query OK, 0 rows affected (0.24 sec)

mysql> insert into studentinfo(Name,Age) values("ABC",25);
Query OK, 1 row affected (0.21 sec)

mysql> insert into studentinfo(Name,Age) values("XYZ",27);
Query OK, 1 row affected (0.21 sec)
```

**Step 11.** Verify that the changes are reflected in the database.



```
mysql> insert into studentinfo(Name,Age) values("ABC",25);
Query OK, 1 row affected (0.21 sec)

mysql> insert into studentinfo(Name,Age) values("XYZ",27);
Query OK, 1 row affected (0.21 sec)

mysql> select * from studentinfo;
+----+-----+-----+
| Id | Name | Age |
+----+-----+-----+
| 1 | ABC | 25 |
| 2 | XYZ | 27 |
+----+-----+-----+
2 rows in set (0.21 sec)

mysql> delete from studentinfo where Id=2;
Query OK, 1 row affected (0.21 sec)
```

**Step 12:** Navigate back to **Cloud SQL** → **Instances**, open the options menu (three dots) for the instance. Click **Delete** and confirm to remove the instance.

The screenshot shows the Google Cloud console interface for Cloud SQL. The left sidebar has 'Instances' highlighted. The main content area shows a table with one instance, 'cloudlab'. The 'Actions' column for this instance has a dropdown menu open, with 'Delete' highlighted. A red arrow points to the 'Delete' option.

Status	Instance ID	Issues	Cloud SQL edition	Type	Public IP address	Private IP address	Actions
<input type="checkbox"/>	cloudlab		Enterprise	MySQL 8.0	136.116.222.210		<ul style="list-style-type: none"><li>Edit</li><li>Create replica</li><li>Enable replication</li><li>Create clone</li><li>Connect VM</li><li>Enable query insights</li><li><b>Delete</b></li></ul>

\*\*\*\*\*