CS 530 INTERNET WEB AND CLOUD SYSTEMS

Name : Varsha Karinje
PSU ID: 925923534

Python Flask 1

Running the code 1

SQL Quiz 4

GCP Cloud SQL 4

Cloud SQL instance creation 7

Cloud SQL network access 8

Cloud SQL importing data 9

Cloud SQL from Cloud Shell 10

Cloud SQL cleanup 14

RDS security group 15

RDS network access 16

RDS test instance 16

RDS cleanup 17

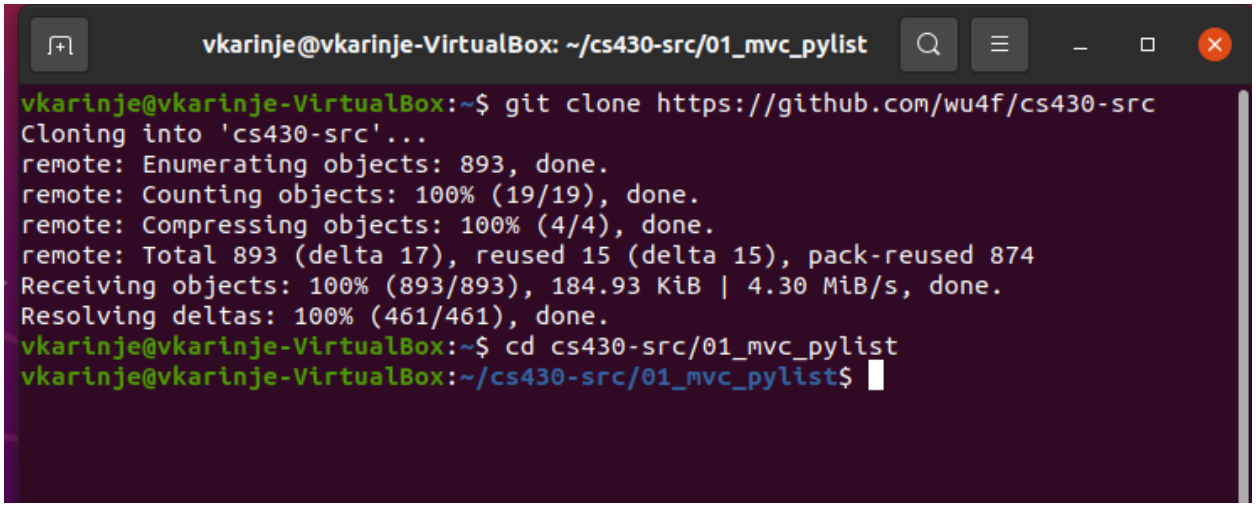
Running the code 17

sqlite3 database 19

03.1:Python Flask Guestbook

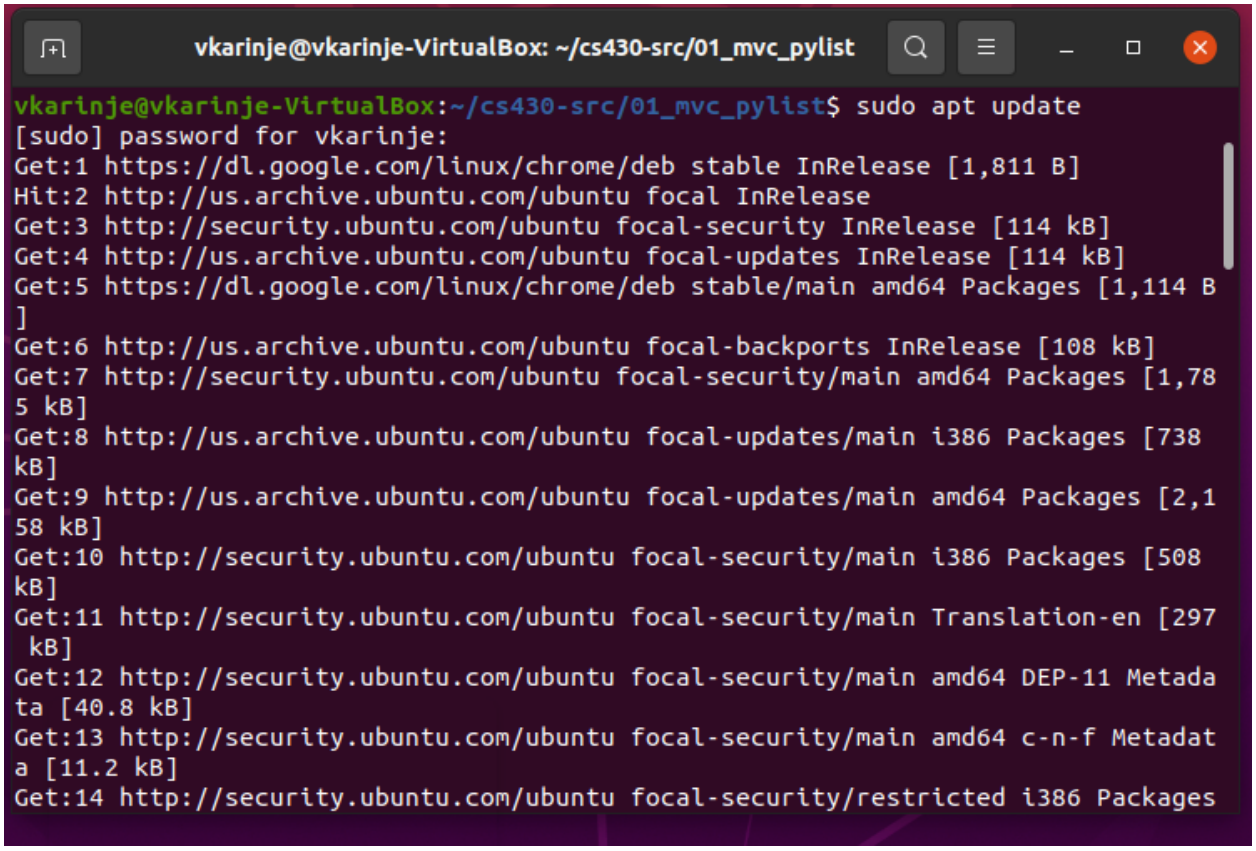
Python Flask

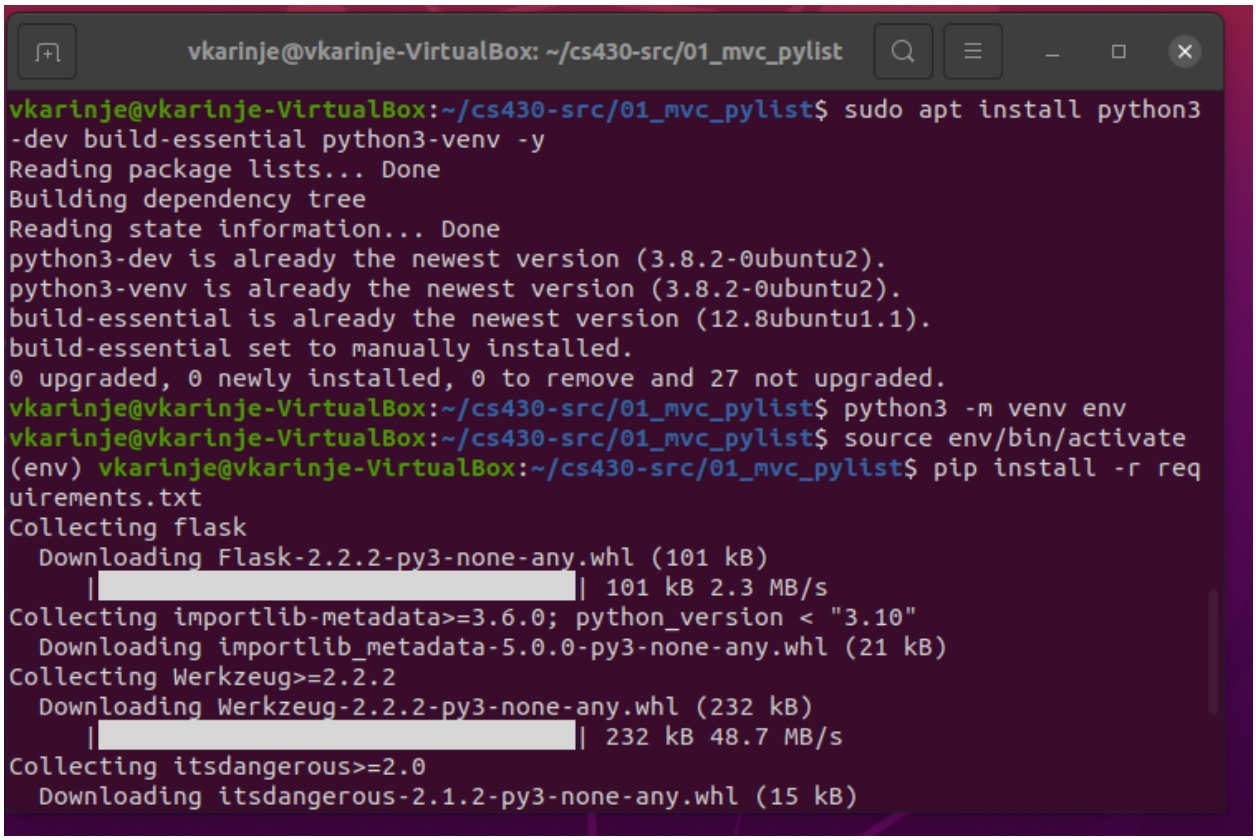
To begin with, on a Linux VM or on a linuxlab machine, clone the repository and change into the directory containing the code

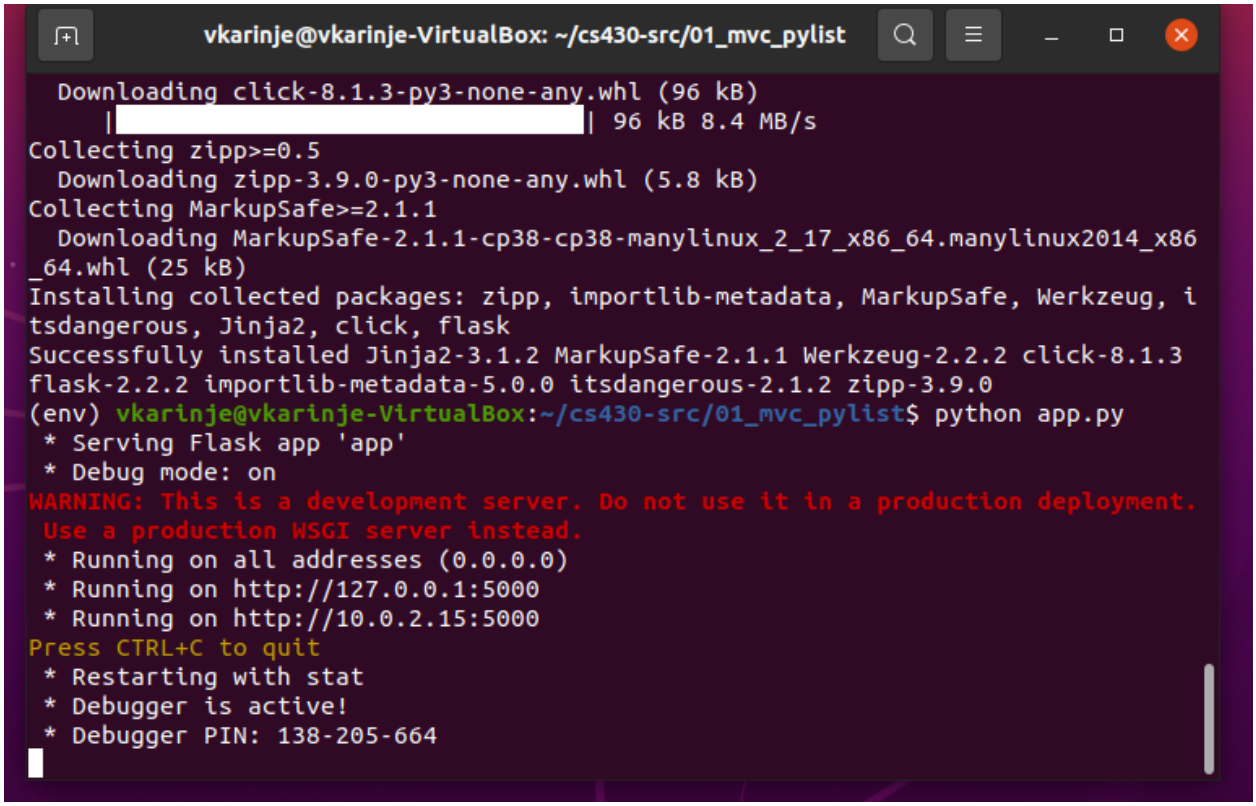


Running the code

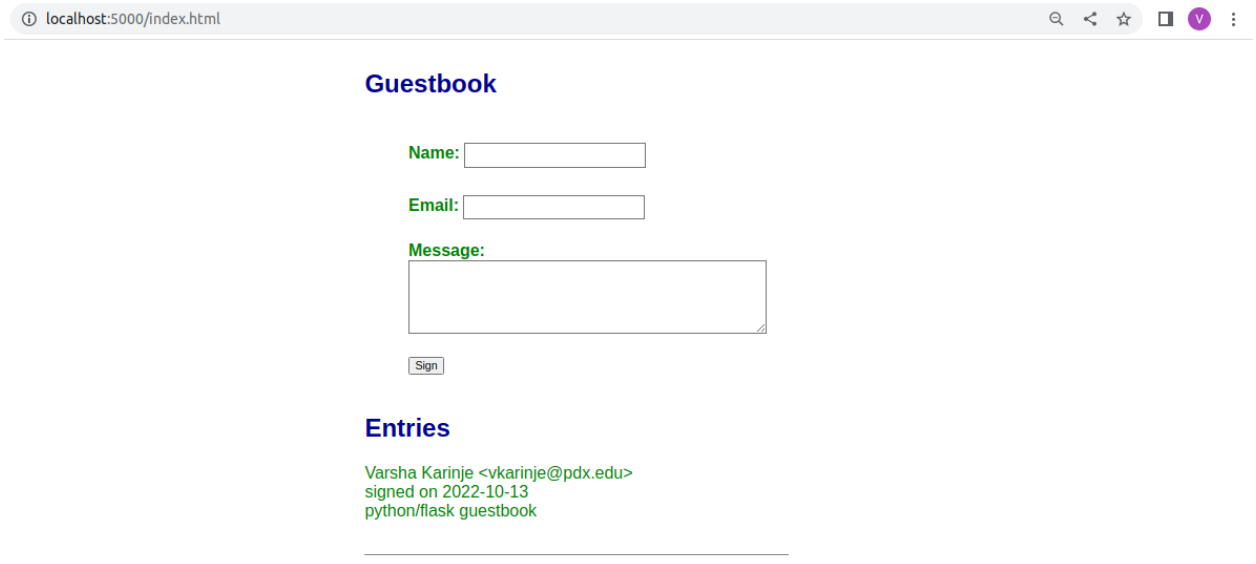
Finally, we'll run the application


vkarinje@vkarinje-VirtualBox: ~/cs430-src/01_mvc_pylist
vkarinje@vkarinje-VirtualBox:~/cs430-src/01_mvc_pylist$ sudo apt update
[sudo] password for vkarinje:
Get:1 https://dl.google.com/linux/chrome/deb stable InRelease [1,811 B]
Hit:2 http://us.archive.ubuntu.com/ubuntu focal InRelease
Get:3 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:5 https://dl.google.com/linux/chrome/deb stable/main amd64 Packages [1,114 B]
Get:6 http://us.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:7 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [1,785 kB]
Get:8 http://us.archive.ubuntu.com/ubuntu focal-updates/main i386 Packages [738 kB]
Get:9 http://us.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [2,158 kB]
Get:10 http://security.ubuntu.com/ubuntu focal-security/main i386 Packages [508 kB]
Get:11 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [297 kB]
Get:12 http://security.ubuntu.com/ubuntu focal-security/main amd64 DEP-11 Metadata [40.8 kB]
Get:13 http://security.ubuntu.com/ubuntu focal-security/main amd64 c-n-f Metadata [11.2 kB]
Get:14 http://security.ubuntu.com/ubuntu focal-security/restricted i386 Packages


vkarinje@vkarinje-VirtualBox: ~/cs430-src/01_mvc_pylist
vkarinje@vkarinje-VirtualBox:~/cs430-src/01_mvc_pylist$ sudo apt install python3-dev build-essential python3-venv -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
python3-dev is already the newest version (3.8.2-0ubuntu2).
python3-venv is already the newest version (3.8.2-0ubuntu2).
build-essential is already the newest version (12.8ubuntu1.1).
build-essential set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 27 not upgraded.
vkarinje@vkarinje-VirtualBox:~/cs430-src/01_mvc_pylist$ python3 -m venv env
vkarinje@vkarinje-VirtualBox:~/cs430-src/01_mvc_pylist$ source env/bin/activate
(env) vkarinje@vkarinje-VirtualBox:~/cs430-src/01_mvc_pylist$ pip install -r requirements.txt
Collecting flask
Downloading Flask-2.2.2-py3-none-any.whl (101 kB)
| 101 kB 2.3 MB/s
Collecting importlib-metadata>=3.6.0; python_version < "3.10"
Downloading importlib_metadata-5.0.0-py3-none-any.whl (21 kB)
Collecting Werkzeug>=2.2.2
Downloading Werkzeug-2.2.2-py3-none-any.whl (232 kB)
| 232 kB 48.7 MB/s
Collecting itsdangerous>=2.0
Downloading itsdangerous-2.1.2-py3-none-any.whl (15 kB)



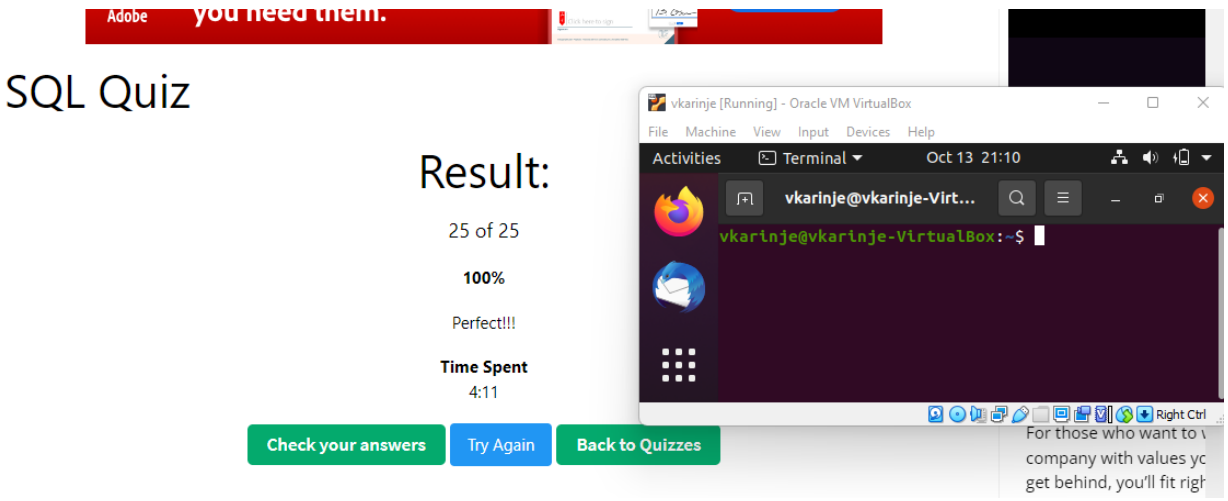
- Add an entry that includes your PSU e-mail address in it and the message "python/flask guestbook". Take a screenshot of the resulting page for your lab notebook.



03.2ag: SQL

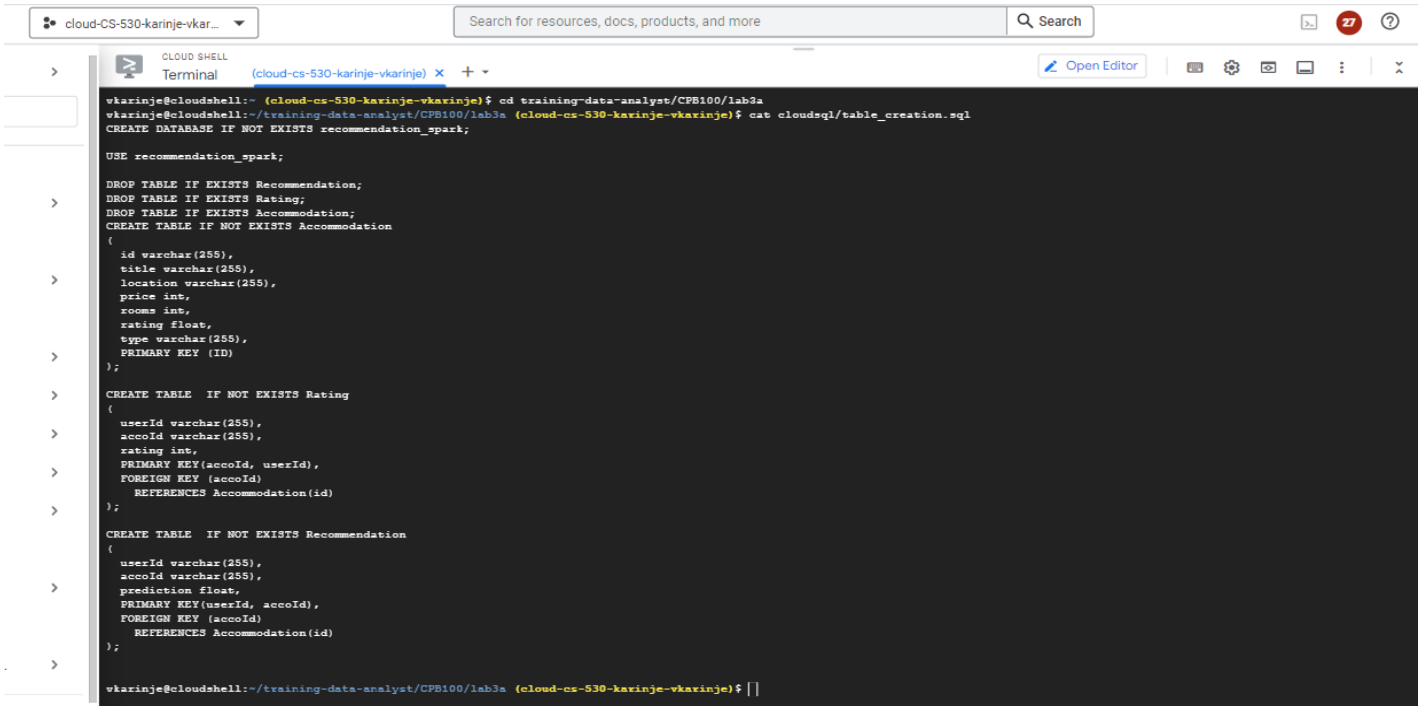
SQL Quiz

- Take the quiz and include a screenshot with your OdinID on it of the "Check your answers" page at the end of the quiz.



GCP Cloud SQL

Examine the data definition language (DDL) commands in cloudsql/table_creation.sql that specifies the schema and answer the following questions:



- **What are the names of the tables that are created?**

  Ans: The names of the tables are Accommodation, Rating and Recommendation.

- **What are the primary keys of each table?**

  Primary key for Accommodation is ID.

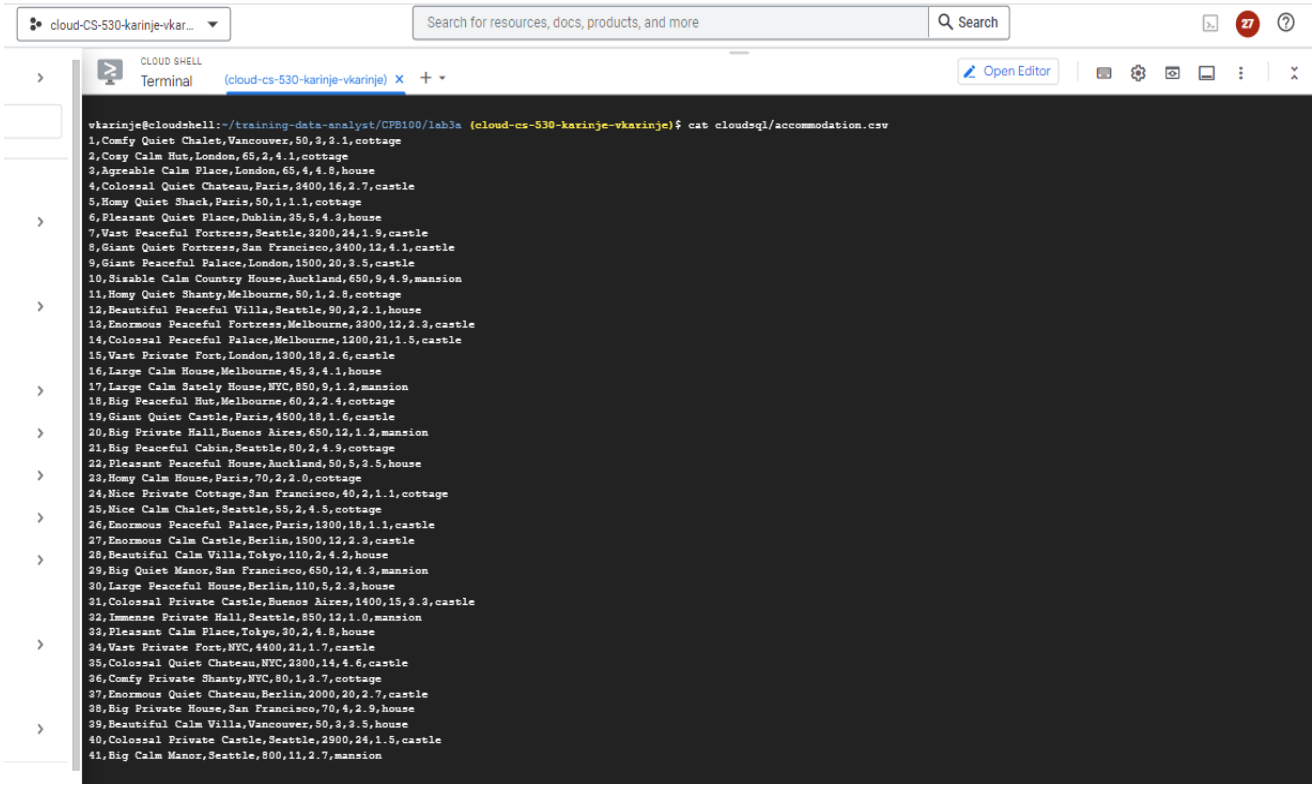
  Primary key for Rating is accoId, userId

  Primary key for Recommendation is userId, accoId

- **What data (e.g. columns) does the Accommodation table hold?**

  Id, title, location, price,rooms,rating and type

  Examine the data that fills in these tables at `cloudsql/accommodation.csv` and answer the following questions.



- **Find the accommodations in Dublin.**

  6, Pleasant Quiet Place, Dublin, 35, 5, 4.3, house

  77, Great Private Country House, Dublin, 1150, 10, 2.4, mansion

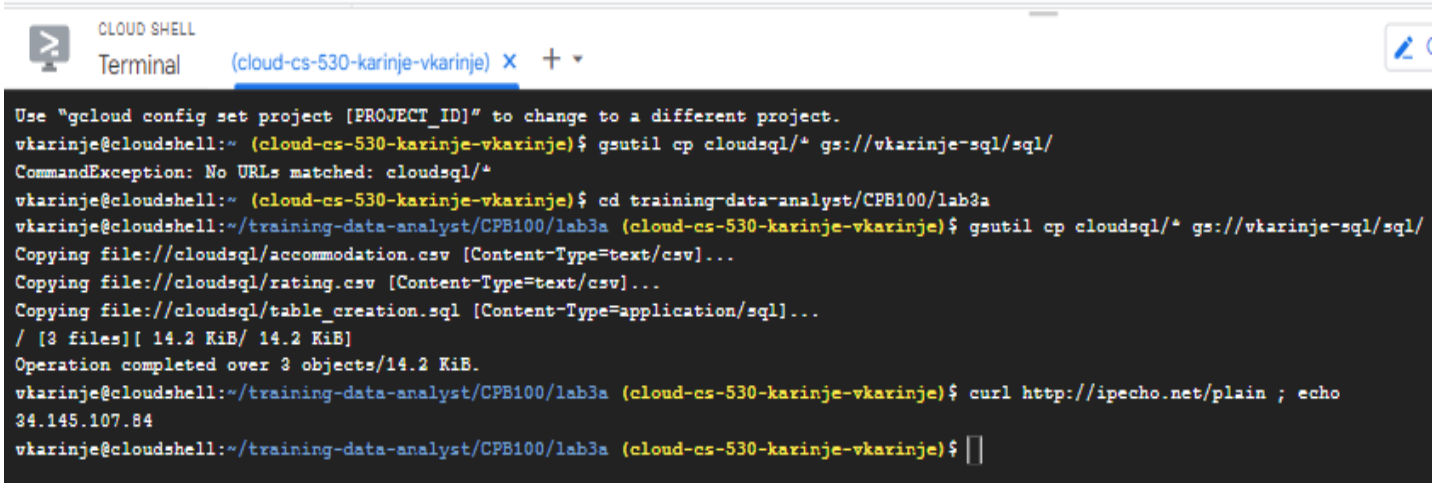
- **Assuming the column data is ordered as in the DDL, list the attributes and their values for each accommodation in Dublin.**

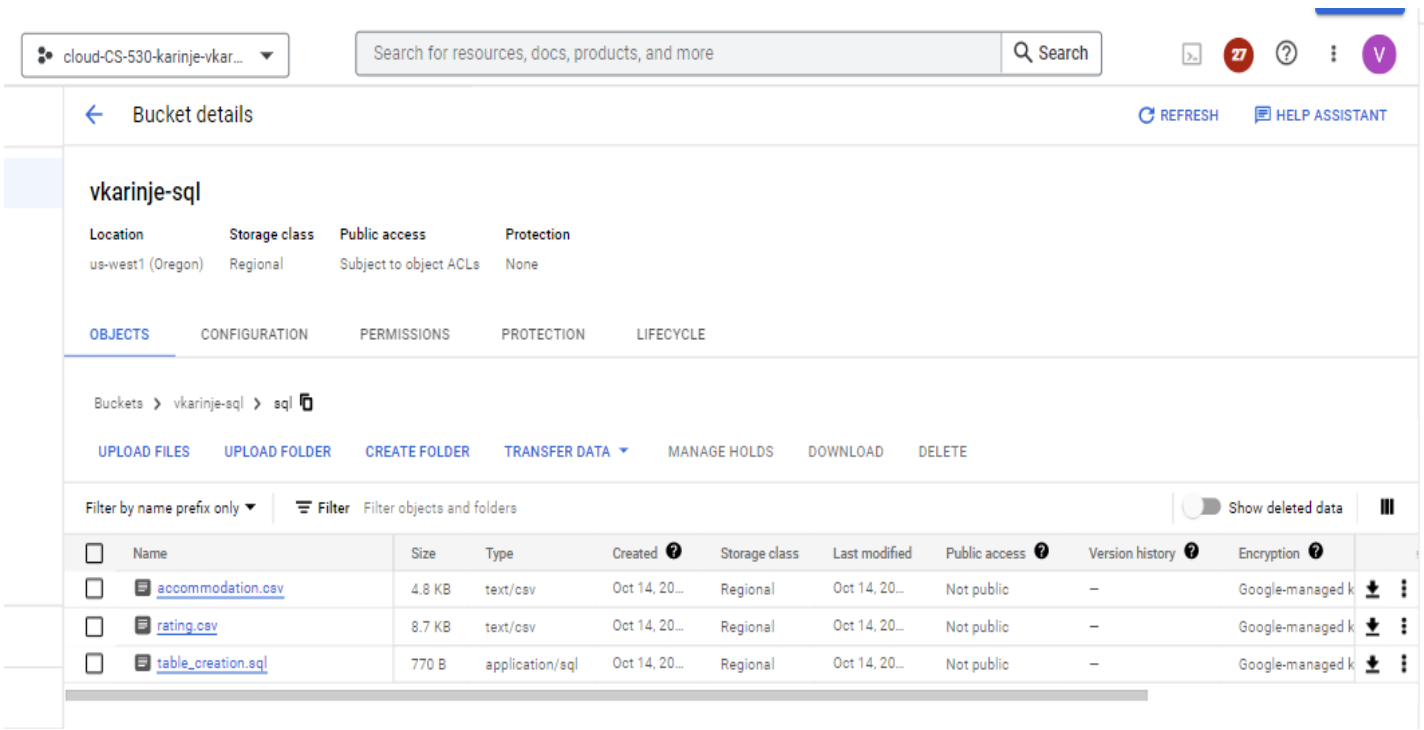
Attributes	id	title	location	price	rooms	rating	type
Values	6	Pleasant Quiet Place	Dublin	35	5	4.3	house
Values	77	Great Private Country House	Dublin	1150	10	2.4	mansion

create a regional storage bucket in `us-west1` with a unique name:

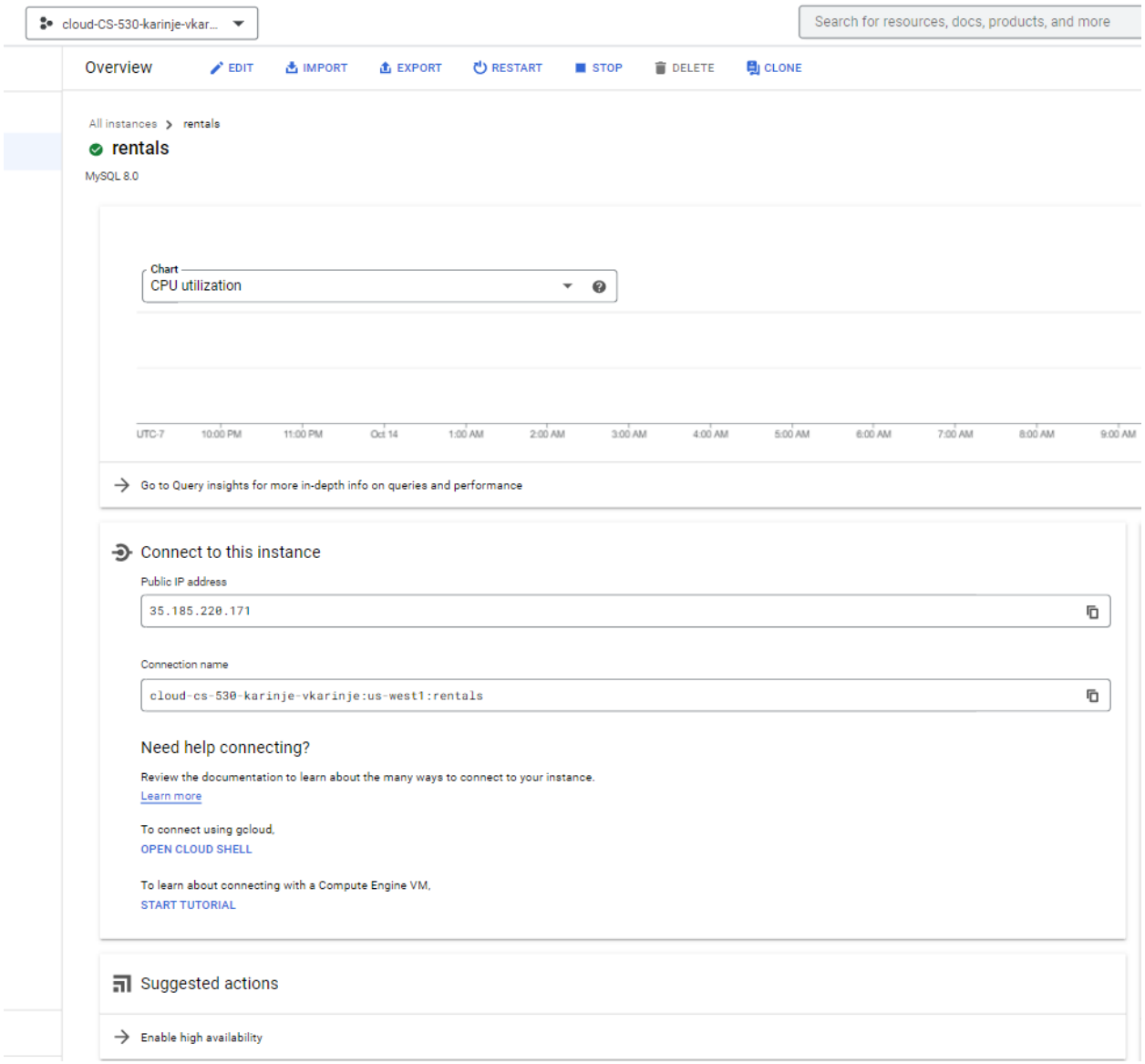
Then, copy the files from the `cloudsql` directory over to it.

run the following command and record your session's IP address

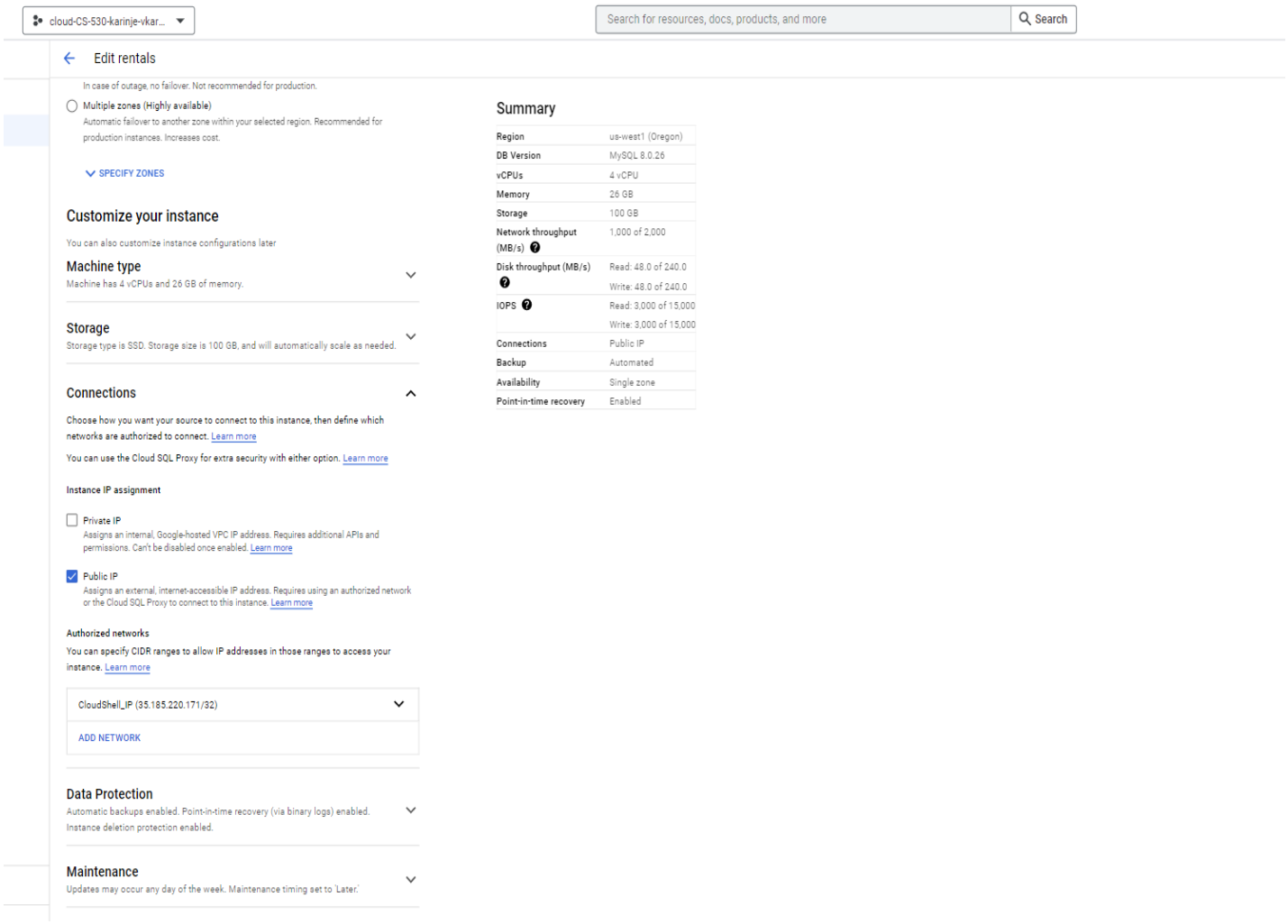




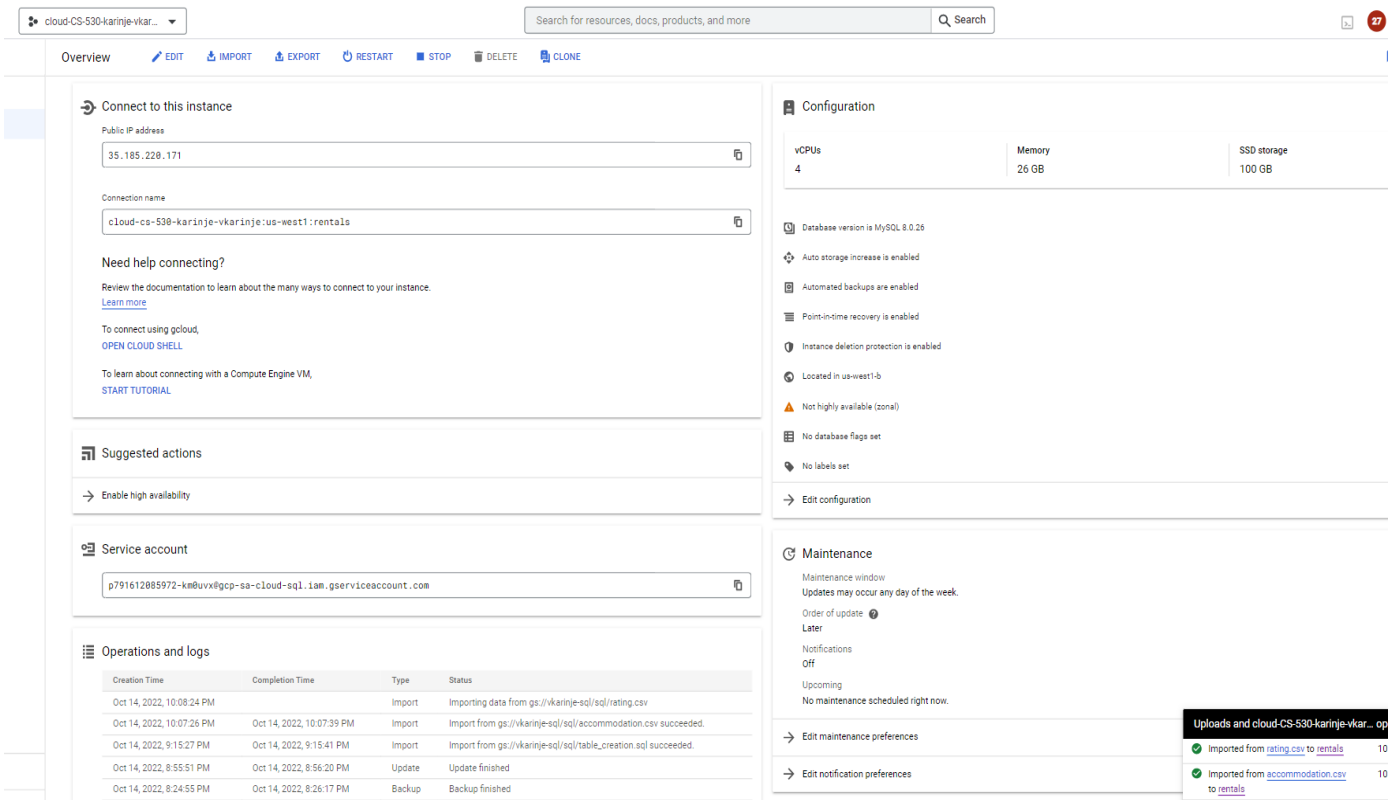
Cloud SQL instance creation



Cloud SQL network access



Cloud SQL importing data



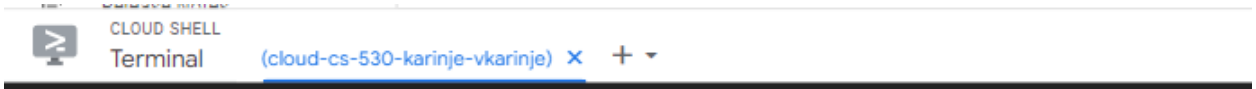
Cloud SQL from Cloud Shell

Within your Cloud Shell session, connect to the Cloud SQL instance using its IP address and the root password you set previously.

Within the MySQL client shell, set the database for the session.

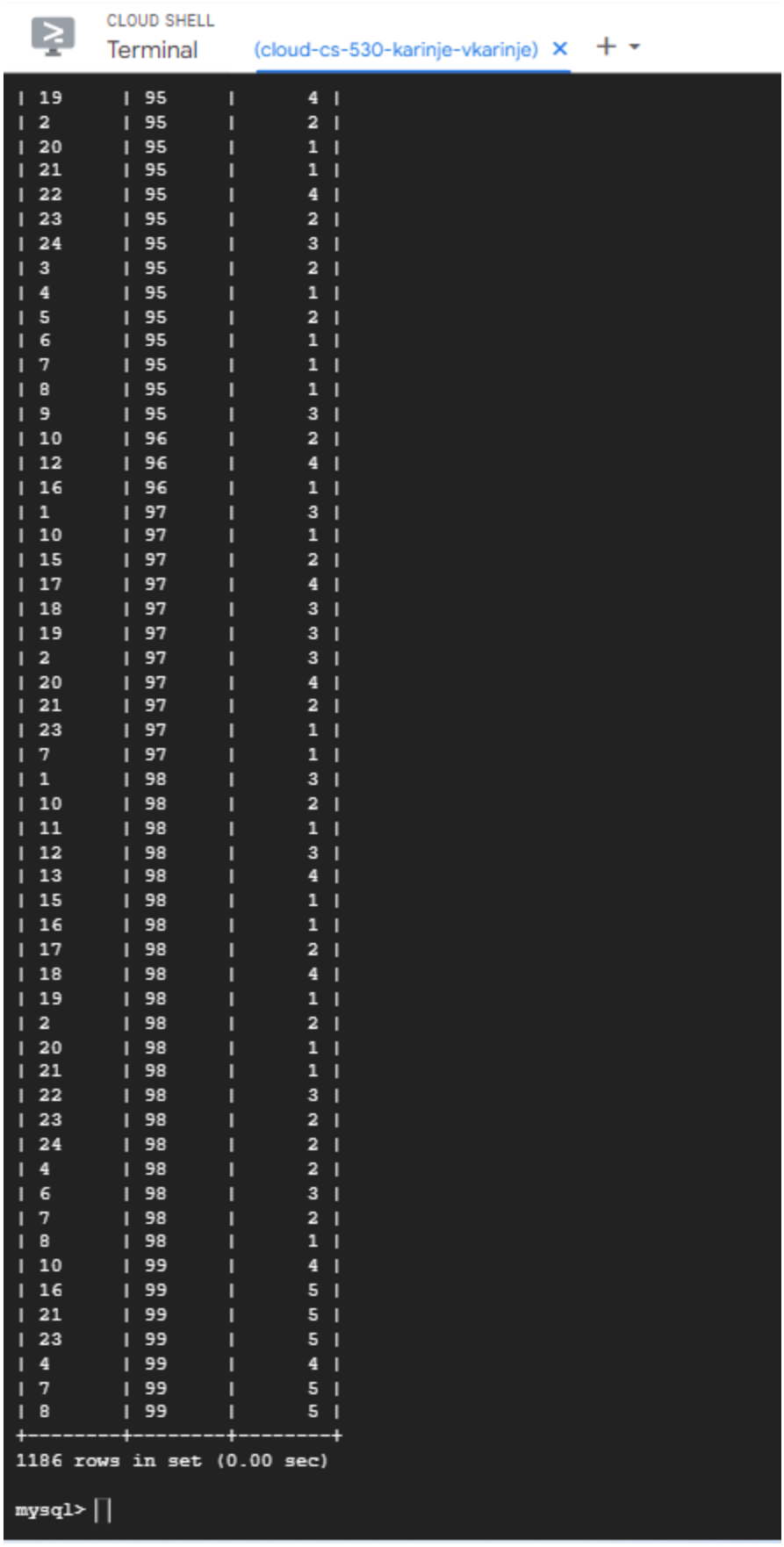
```
vkarinje@cloudshell:~ (cloud-cs-530-karinje-vkarinje)$ gcloud sql connect rentals --user=root --quiet
Allowlisting your IP for incoming connection for 5 minutes...done.
Connecting to database with SQL user [root].Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 706
Server version: 8.0.26-google (Google)

Copyright (c) 2000, 2022, 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> use recommendation_spark;
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
mysql>
```

View the tables that have been created.



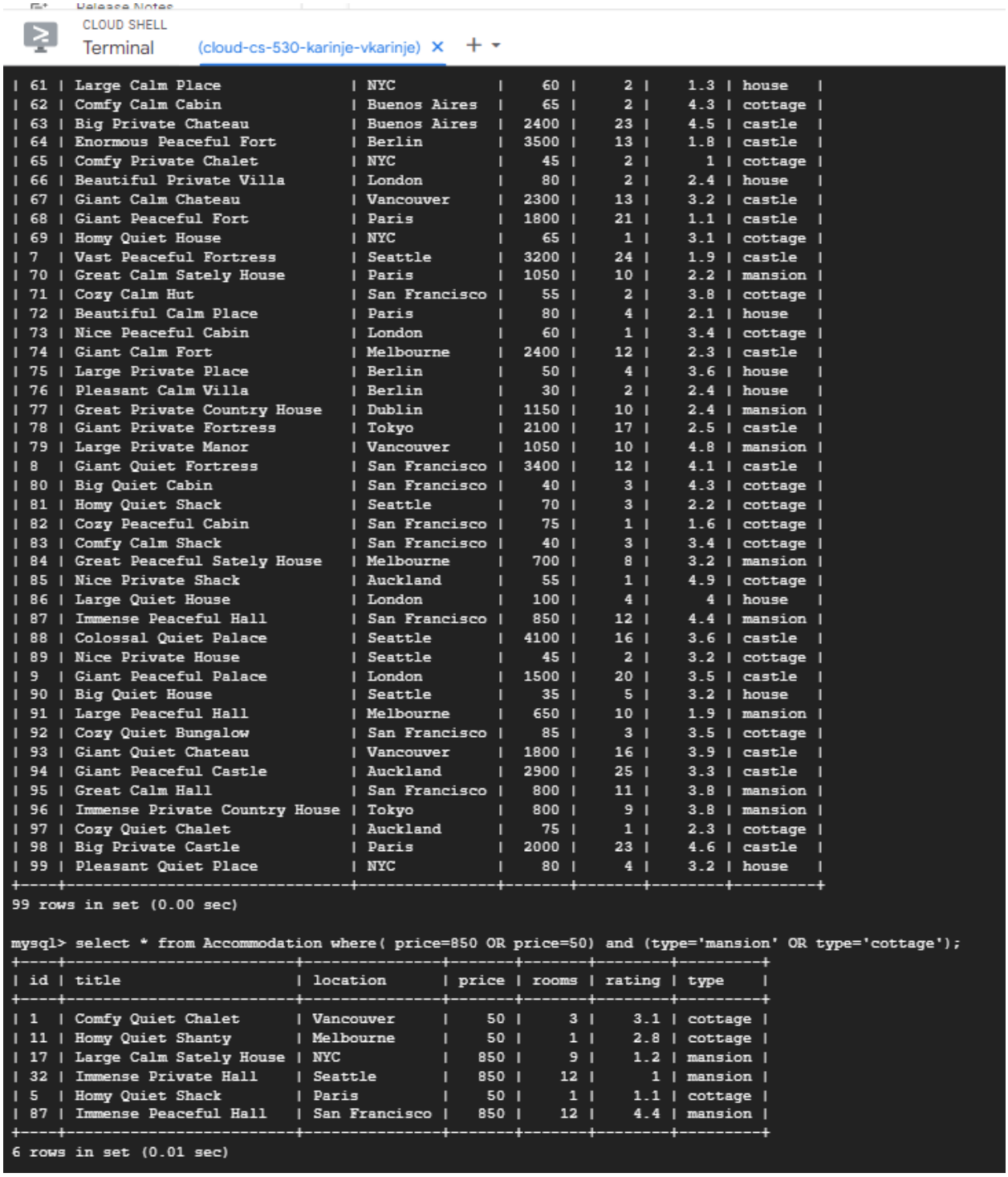

```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to cloud-cs-530-karinje-vkarinje.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
vkarinje@cloudshell:~ (cloud-cs-530-karinje-vkarinje)$ gcloud sql connect rentals --user=root --quiet
Allowlisting your IP for incoming connection for 5 minutes...done.
Connecting to database with SQL user [root].Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 755
Server version: 8.0.26-google (Google)

Copyright (c) 2000, 2022, 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> use recommendation_spark;
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
mysql> show tables;
+--------------------------------+
| Tables_in_recommendation_spark |
+--------------------------------+
| Accommodation                  |
| Rating                         |
| Recommendation                 |
+--------------------------------+
3 rows in set (0.00 sec)

mysql>
```

Verify the data has been imported properly.

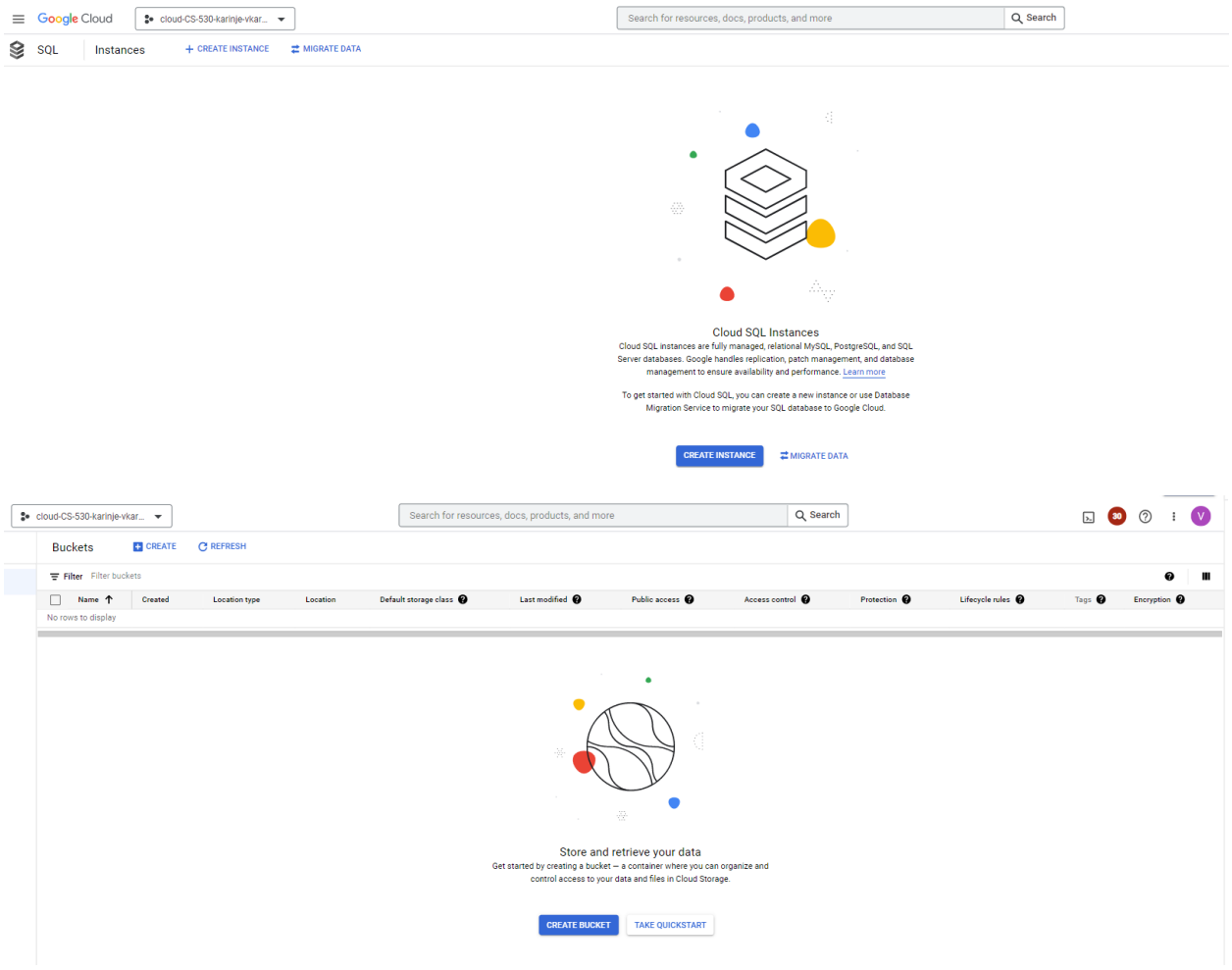



```
| 19     | 95     |      4 |
| 2      | 95     |      2 |
| 20     | 95     |      1 |
| 21     | 95     |      1 |
| 22     | 95     |      4 |
| 23     | 95     |      2 |
| 24     | 95     |      3 |
| 3      | 95     |      2 |
| 4      | 95     |      1 |
| 5      | 95     |      2 |
| 6      | 95     |      1 |
| 7      | 95     |      1 |
| 8      | 95     |      1 |
| 9      | 95     |      3 |
| 10     | 96     |      2 |
| 12     | 96     |      4 |
| 16     | 96     |      1 |
| 1      | 97     |      3 |
| 10     | 97     |      1 |
| 15     | 97     |      2 |
| 17     | 97     |      4 |
| 18     | 97     |      3 |
| 19     | 97     |      3 |
| 2      | 97     |      3 |
| 20     | 97     |      4 |
| 21     | 97     |      2 |
| 23     | 97     |      1 |
| 7      | 97     |      1 |
| 1      | 98     |      3 |
| 10     | 98     |      2 |
| 11     | 98     |      1 |
| 12     | 98     |      3 |
| 13     | 98     |      4 |
| 15     | 98     |      1 |
| 16     | 98     |      1 |
| 17     | 98     |      2 |
| 18     | 98     |      4 |
| 19     | 98     |      1 |
| 2      | 98     |      2 |
| 20     | 98     |      1 |
| 21     | 98     |      1 |
| 22     | 98     |      3 |
| 23     | 98     |      2 |
| 24     | 98     |      2 |
| 4      | 98     |      2 |
| 6      | 98     |      3 |
| 7      | 98     |      2 |
| 8      | 98     |      1 |
| 10     | 99     |      4 |
| 16     | 99     |      5 |
| 21     | 99     |      5 |
| 23     | 99     |      5 |
| 4      | 99     |      4 |
| 7      | 99     |      5 |
| 8      | 99     |      5 |
+--------+--------+--------+
1186 rows in set (0.00 sec)

mysql>
```

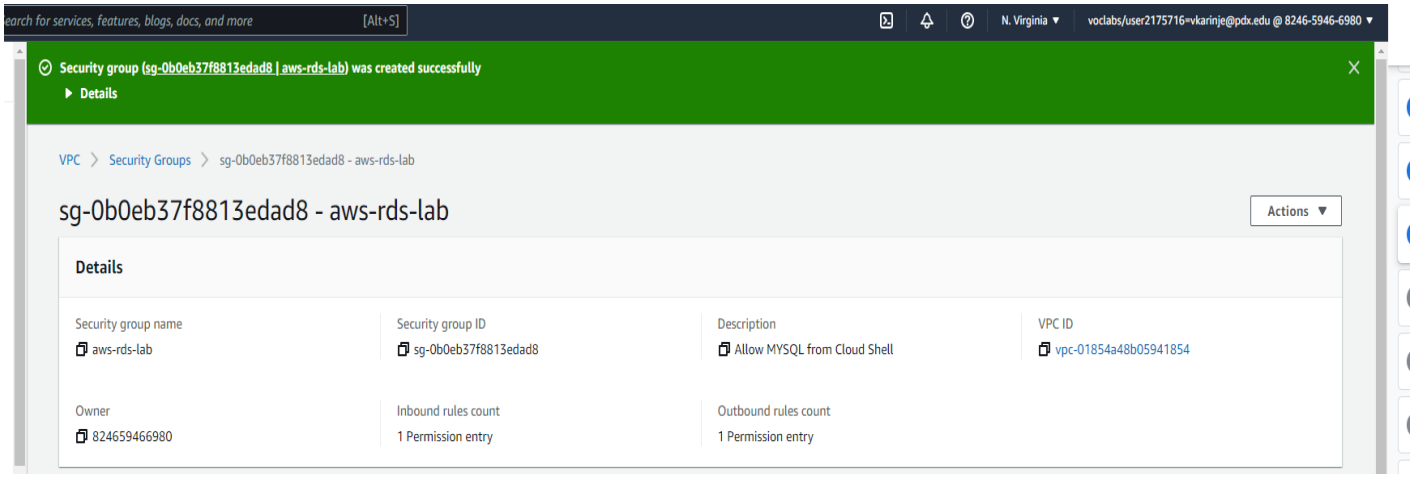
Run queries for accommodations at two price levels of your choice and two types of your choice.



Cloud SQL cleanup

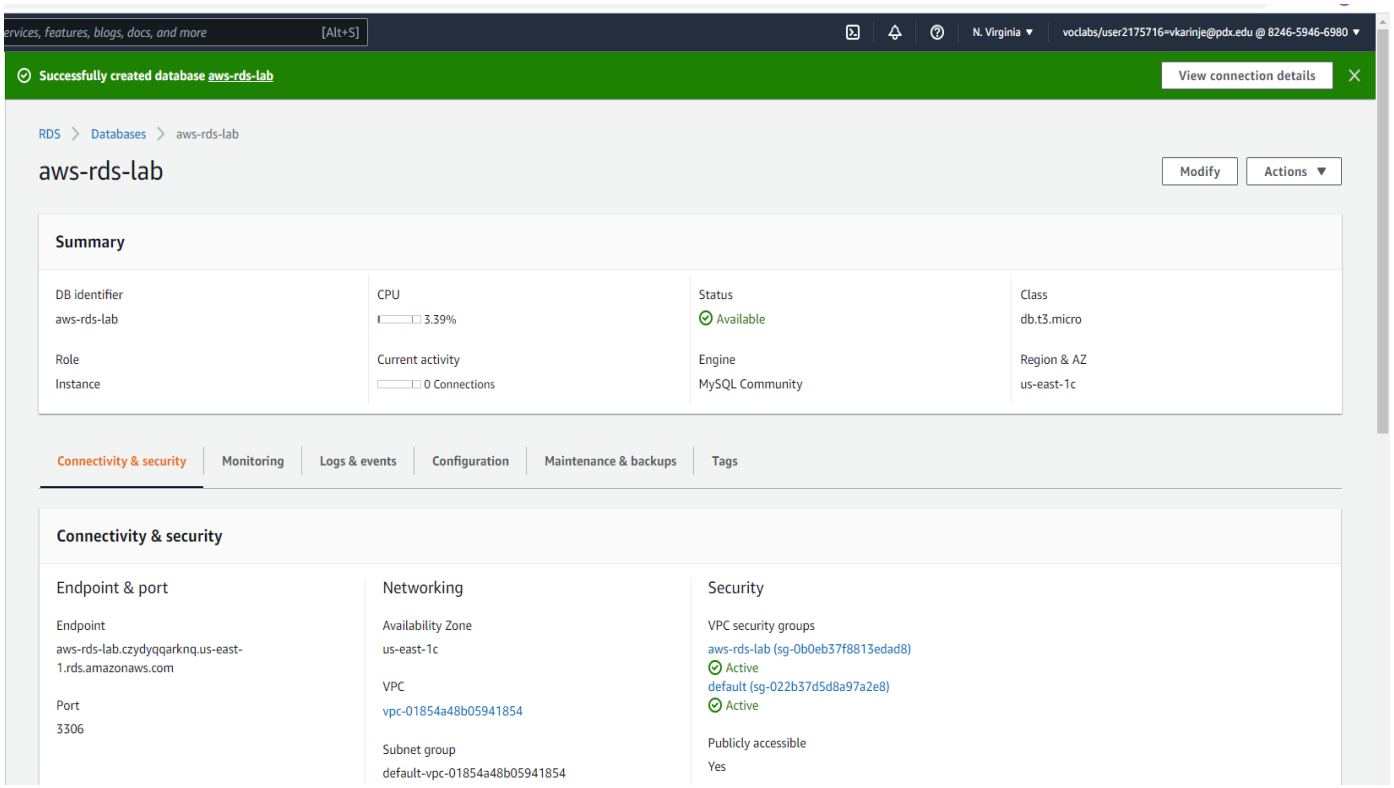


RDS security group



RDS network access

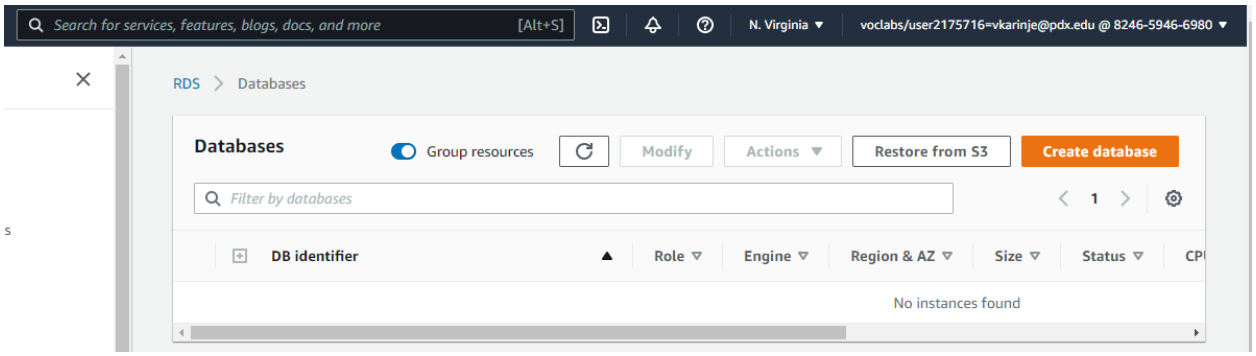
Finally, create the database. Visit the web console of RDS and wait until the "Status" of the database is "Available". Note the endpoint address on the bottom-left that will be used to connect to as shown below:



RDS test instance

- Show a screenshot of the successful connection similar to below that includes your OdinID

RDS cleanup



03.3: sqlite3 Guestbook

Running the code

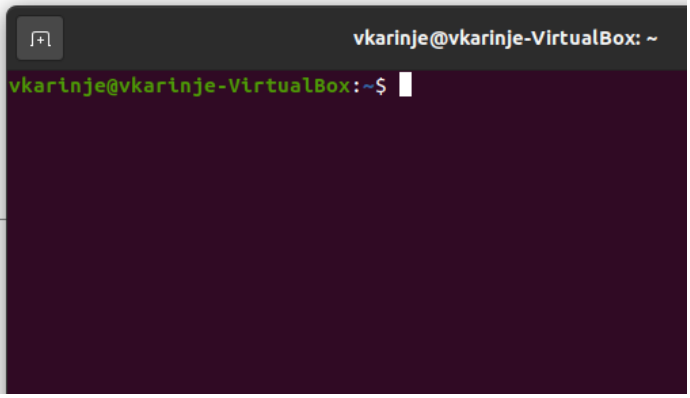
```
(env) vkarinje@vkarinje-VirtualBox:~/cs430-src/02_mvp_modules_sqlite3$ python app.py
 * Serving Flask app 'app'
 * Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
 * Running on all addresses (0.0.0.0)
 * Running on http://127.0.0.1:8000
 * Running on http://10.0.2.15:8000
Press CTRL+C to quit
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 366-871-715
127.0.0.1 - - [15/Oct/2022 18:57:21] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [15/Oct/2022 18:57:21] "GET /static/style.css HTTP/1.1" 200 -
127.0.0.1 - - [15/Oct/2022 18:57:21] "GET /favicon.ico HTTP/1.1" 404 -
127.0.0.1 - - [15/Oct/2022 18:58:48] "GET /sign HTTP/1.1" 200 -
127.0.0.1 - - [15/Oct/2022 18:58:48] "GET /static/style.css HTTP/1.1" 304 -
127.0.0.1 - - [15/Oct/2022 19:05:09] "POST /sign HTTP/1.1" 302 -
127.0.0.1 - - [15/Oct/2022 19:05:09] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [15/Oct/2022 19:05:09] "GET /static/style.css HTTP/1.1" 304 -
```

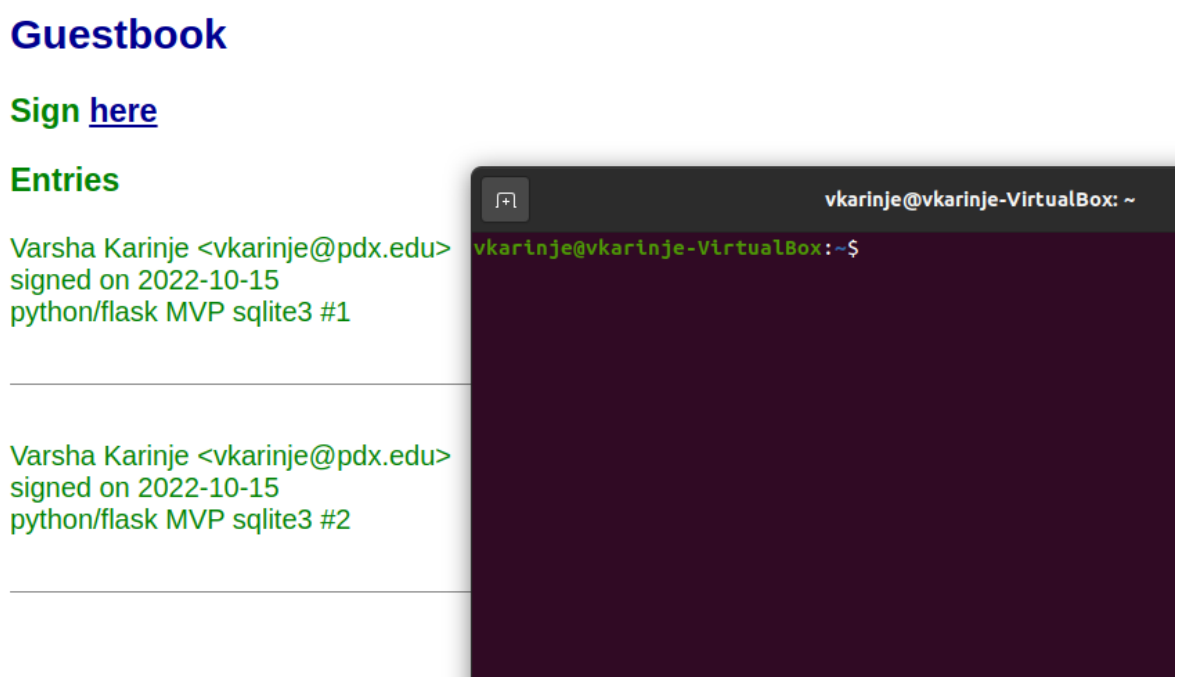
Guestbook

Sign here

Entries

Varsha Karinje <vkarinje@pdx.edu>
signed on 2022-10-15
python/flask MVP sqlite3 #1





sqlite3 database

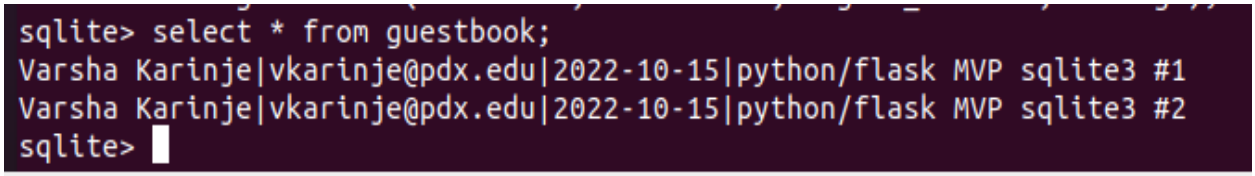
Bring up the entries.db database within sqlite3 via the following command:
List the tables in the database and note the table name

- Then, output the schema for the table via its name

```
(env) vkarinje@vkarinje-VirtualBox:~/cs430-src/02_mvp_modules_sqlite3$ sqlite3 entries.db
SQLite version 3.31.1 2020-01-27 19:55:54
Enter ".help" for usage hints.
sqlite> .tables
guestbook
sqlite> .schema guestbook
CREATE TABLE guestbook (name text, email text, signed_on date, message);
```

The table name is guestbook

- Finally, perform a SQL query to dump out all rows in the table


sqlite> select * from guestbook;
Varsha Karinje|vkarinje@pdx.edu|2022-10-15|python/flask MVP sqlite3 #1
Varsha Karinje|vkarinje@pdx.edu|2022-10-15|python/flask MVP sqlite3 #2
sqlite>