

1. sqlite3

- To view the code, change into its directory within the repository.

```
branden@branden-VirtualBox:~$ cd cs356-cloud-files/02_mvp_modules_sqlite3
branden@branden-VirtualBox:~/cs356-cloud-files/02_mvp_modules_sqlite3$ ls
app.py  gbmodel  index.py  requirements.txt  sign.py  static  templates
branden@branden-VirtualBox:~/cs356-cloud-files/02_mvp_modules_sqlite3$
```

2. gbmodel package

- No screenshots or observations

3. Presenter architecture

- No screenshots or observations

4. Running the code

- Change into the repository that contains the code.

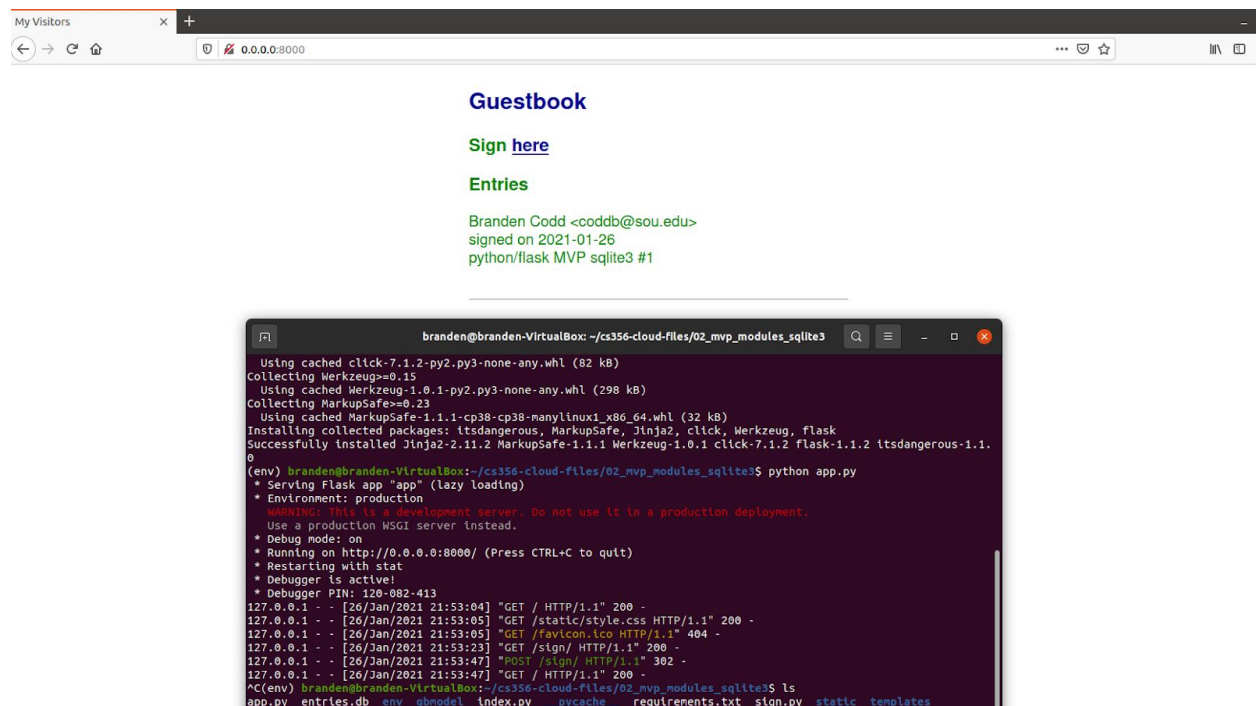
```
branden@branden-VirtualBox:~/cs356-cloud-files/02_mvp_modules_sqlite3$ cd
branden@branden-VirtualBox:~$ cd cs356-cloud-files/02_mvp_modules_sqlite3
```

- **create a Python 3 virtual environment and install the packages specified in requirements.txt (e.g. flask)**

```
(env) branden@branden-VirtualBox:~/cs356-cloud-files/02_mvp_modules_sqlite3$ pip install -r requirements.txt
Collecting flask
  Using cached Flask-1.1.2-py2.py3-none-any.whl (94 kB)
Collecting itsdangerous>=0.24
  Using cached itsdangerous-1.1.0-py2.py3-none-any.whl (16 kB)
Collecting Jinja2>=2.10.1
  Using cached Jinja2-2.11.2-py2.py3-none-any.whl (125 kB)
Collecting click>=5.1
  Using cached click-7.1.2-py2.py3-none-any.whl (82 kB)
Collecting Werkzeug>=0.15
  Using cached Werkzeug-1.0.1-py2.py3-none-any.whl (298 kB)
Collecting MarkupSafe>=0.23
  Using cached MarkupSafe-1.1.1-cp38-cp38-manylinux1_x86_64.whl (32 kB)
Installing collected packages: itsdangerous, MarkupSafe, Jinja2, click, Werkzeug, flask
Successfully installed Jinja2-2.11.2 MarkupSafe-1.1.1 Werkzeug-1.0.1 click-7.1.2 flask-1.1.2 itsdangerous-1.1.0

(env) branden@branden-VirtualBox:~/cs356-cloud-files/02_mvp_modules_sqlite3$ python app.py
* Serving Flask app "app" (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://0.0.0.0:8000/ (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 120-082-413
```

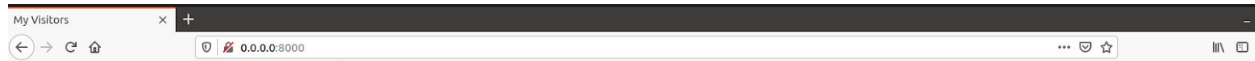
- Visit the site as before and add an entry that includes your PSU e-mail address in it and the message "python/flask MVP sqlite3 #1". Then, type "Ctrl+c" to stop the server. Perform a directory listing to see that the sqlite3 database file `entries.db` has been created.



The image shows a web browser window with the address `0.0.0.0:8000`. The page title is "Guestbook" and it has a "Sign here" link. Below the link, there is an "Entries" section showing a single entry: "Branden Codd <codd@psu.edu> signed on 2021-01-26 python/flask MVP sqlite3 #1".

Below the browser window, a terminal window shows the output of `python app.py`. It displays the same Flask startup messages as the first image, followed by a list of HTTP requests and responses from the browser. At the bottom, a directory listing shows the files in the current directory: `app.py`, `entries.db`, `env`, `gbmodel`, `index.py`, `__pycache__`, `requirements.txt`, `sign.py`, `static`, and `templates`.

- After restart



Guestbook

[Sign here](#)

Entries

Branden Codd <codd@sou.edu>
signed on 2021-01-26
python/flask MVP sqlite3 #1

Branden Codd <codd@sou.edu>
signed on 2021-01-26
python/flask MVP sqlite3 #2

```
branden@branden-VirtualBox: ~/cs356-cloud-files/02_mvp_modules_sqlite3
* Debugger PIN: 120-082-413
127.0.0.1 - - [26/Jan/2021 21:53:04] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [26/Jan/2021 21:53:05] "GET /static/style.css HTTP/1.1" 200 -
127.0.0.1 - - [26/Jan/2021 21:53:05] "GET /favicon.ico HTTP/1.1" 404 -
127.0.0.1 - - [26/Jan/2021 21:53:23] "GET /sign/ HTTP/1.1" 200 -
127.0.0.1 - - [26/Jan/2021 21:53:47] "POST /sign/ HTTP/1.1" 302 -
127.0.0.1 - - [26/Jan/2021 21:53:47] "GET / HTTP/1.1" 200 -
^C(env) branden@branden-VirtualBox:~/cs356-cloud-files/02_mvp_modules_sqlite3$ ls
app.py  entries.db  env  gbmol  index.py  __pycache__  requirements.txt  sign.py  static  templates
(env) branden@branden-VirtualBox:~/cs356-cloud-files/02_mvp_modules_sqlite3$ vln en
entries.db - env/
(env) branden@branden-VirtualBox:~/cs356-cloud-files/02_mvp_modules_sqlite3$ vln entries.db
(env) branden@branden-VirtualBox:~/cs356-cloud-files/02_mvp_modules_sqlite3$ python app.py
* Serving Flask app "app" (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://0.0.0.0:8000/ (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 120-082-413
127.0.0.1 - - [26/Jan/2021 21:56:45] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [26/Jan/2021 21:56:50] "GET /sign/ HTTP/1.1" 200 -
127.0.0.1 - - [26/Jan/2021 21:56:51] "GET /favicon.ico HTTP/1.1" 404 -
127.0.0.1 - - [26/Jan/2021 21:57:07] "POST /sign/ HTTP/1.1" 302 -
127.0.0.1 - - [26/Jan/2021 21:57:07] "GET / HTTP/1.1" 200 -
```

5. sqlite3 database

- install the CLI by running the command: `sudo apt-get install sqlite3 libsqlite3-dev`

Bring up the entries.db database within sqlite3 via the following command:

`sqlite3 entries.db`

```
branden@branden-VirtualBox: ~/cs356-cloud-files/02_mvp_modules_sqlite3
(env) branden@branden-VirtualBox:~/cs356-cloud-files/02_mvp_modules_sqlite3$ sudo apt-get install sqlite3 libsqlite3-dev
[sudo] password for branden:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libfprint-2-tod1 libllvm10
Use 'sudo apt autoremove' to remove them.
Suggested packages:
  sqlite3-doc
The following NEW packages will be installed:
  libsqlite3-dev sqlite3
0 upgraded, 2 newly installed, 0 to remove and 26 not upgraded.
Need to get 1,557 kB of archives.
After this operation, 5,174 kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com/ubuntu focal-updates/main amd64 libsqlite3-dev amd64 3.31.1-4ubuntu0.2 [696 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu focal-updates/main amd64 sqlite3 amd64 3.31.1-4ubuntu0.2 [860 kB]
Fetched 1,557 kB in 3s (545 kB/s)
Selecting previously unselected package libsqlite3-dev:amd64.
(Reading database ... 192965 files and directories currently installed.)
Preparing to unpack .../libsqlite3-dev_3.31.1-4ubuntu0.2_amd64.deb ...
Unpacking libsqlite3-dev:amd64 (3.31.1-4ubuntu0.2) ...
Selecting previously unselected package sqlite3.
Preparing to unpack .../sqlite3_3.31.1-4ubuntu0.2_amd64.deb ...
Unpacking sqlite3 (3.31.1-4ubuntu0.2) ...
Setting up libsqlite3-dev:amd64 (3.31.1-4ubuntu0.2) ...
Setting up sqlite3 (3.31.1-4ubuntu0.2) ...
Processing triggers for man-db (2.9.1-1) ...
(env) branden@branden-VirtualBox:~/cs356-cloud-files/02_mvp_modules_sqlite3$ sqlite3 entries.db
SQLite version 3.31.1 2020-01-27 19:55:54
Enter ".help" for usage hints.
sqlite>
```

Then, within the sqlite client, perform the following commands to:

- List the tables in the database and note the table name
`sqlite> .tables`
- Then, output the schema for the table via its name
`sqlite> .schema <table_name>`
- Finally, perform a SQL query to dump out all rows in the table
`sqlite> select * from <table_name>;`

Take a screenshot of the output of the above commands and include it in your lab notebook.

