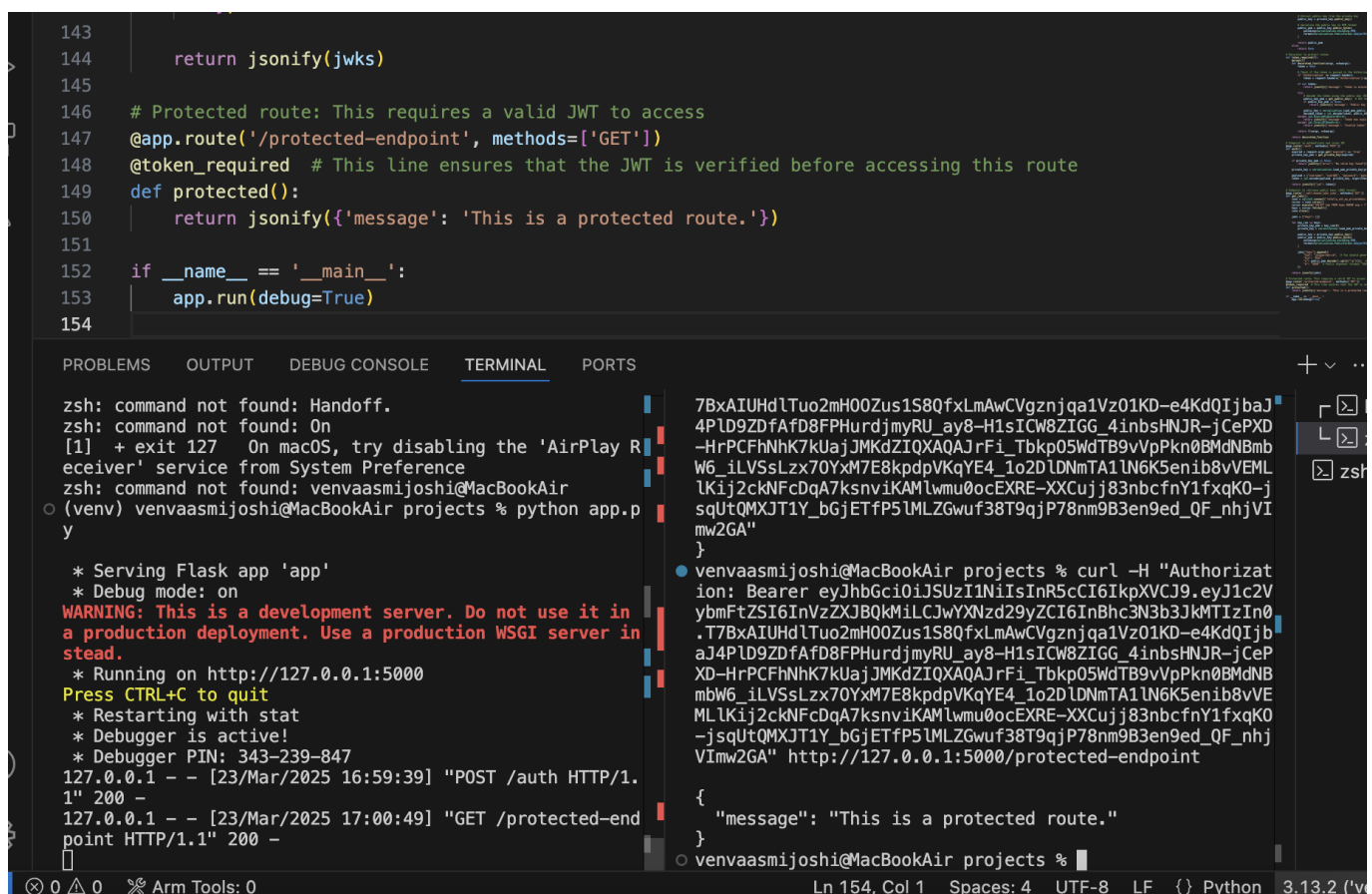


# README for Project 2

## Introduction:

This project involves extending the basic JWKS (JSON Web Key Set) server with SQLite-backed storage for private keys. The goal is to store private keys securely and provide functionality for signing JWTs and verifying them using the JWKS endpoint. Additionally, SQL injection prevention is a focus when interacting with the SQLite database.



```
143     return jsonify(jwks)
144
145
146 # Protected route: This requires a valid JWT to access
147 @app.route('/protected-endpoint', methods=['GET'])
148 @token_required # This line ensures that the JWT is verified before accessing this route
149 def protected():
150     return jsonify({'message': 'This is a protected route.'})
151
152 if __name__ == '__main__':
153     app.run(debug=True)
154
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL** PORTS

```
zsh: command not found: Handoff.
zsh: command not found: On
[1] + exit 127 On macOS, try disabling the 'AirPlay Receiver' service from System Preference
zsh: command not found: venvaasmijoshi@MacBookAir
○ (venv) venvaasmijoshi@MacBookAir projects % 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 http://127.0.0.1:5000
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 343-239-847
127.0.0.1 - - [23/Mar/2025 16:59:39] "POST /auth HTTP/1.1" 200 -
127.0.0.1 - - [23/Mar/2025 17:00:49] "GET /protected-endpoint HTTP/1.1" 200 -
venvaasmijoshi@MacBookAir projects % curl -H "Authorization: Bearer eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1c2VybWVtZSI6InVzZXJBQkMiLCJwYXNpd29yZCI6InBhc3N3b3JkMTIzIn0.7BxAIUHdLTuo2mH00Zus1S80fxLmAwCVgznjga1Vz01KD-e4KdQIjbaJ4PUD9ZDfAfD8FPHurdjmyRU_ay8-H1sICW8ZIGG_4inbsHNJR-jCePXD-HrPCFhNhK7kUajJMKdZIQXAQAJrFi_TbKp05WdTB9vVpPkn0BMdNBmbW6_iLVSSLzx70YxM7E8kdpdVKqYE4_1o2DLDNmTA1LN6K5enib8vVEMLLKij2ckNfCdQa7ksnvikAMlwmu0ocEXRE-XXCujj83nbcfnY1fxqK0-jsqUtQMXJT1Y_bGjETfP5LMLZGwuf38T9qjP78nm9B3en9ed_QF_nhjVImw2GA" http://127.0.0.1:5000/protected-endpoint
{
  "message": "This is a protected route."
}
venvaasmijoshi@MacBookAir projects %
```

Ln 154, Col 1 Spaces: 4 UTF-8 LF {} Python 3.13.2 ('v

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
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127.0.0.1 - - [23/Mar/2025 17:00:49] "GET /protected-endpoint HTTP/1.1" 200 -

venvaasmijoshi@MacBookAir projects % curl -X POST http://127.0.0.1:5000/auth
{
  "jwt": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1c2VybmFtZSI6InVzZXZlbnQkMiLCJwYXNzd29yZCI6InBhc3N3b3JkMTIzIn0.T7BxAIUhdLTuo2mH00Zus1S8QfxLmAwCVgzjqa1Vz01KD-e4KdQIjbaJ4PLD9ZDfAfD8FPHurdjmyRU_ay8-H1sICW8ZIGG_4inbsHNJR-jCePXD-HrPCFhNhK7kUajJMKdZIQXAQAJrFi_Tbkp05WdTB9vVpPkn0BMDNBmbW6_iLVSSLzx70YxM7E8kdpvVKqYE4_1o2DLDNmTA1LN6K5eni8vVEMLKij2ckNfcDqA7ksnviKAMlwmu0ocEXRE-XXCujj83nbcfnY1fxqK0-jsqUtQMXJT1Y_bGjETfP5LMLZGwuf38T9qjP78nm9B3en9ed_QF_nhJmW2GA"
}

venvaasmijoshi@MacBookAir projects % curl -H "Authorization: Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1c2VybmFtZSI6InVzZXZlbnQkMiLCJwYXNzd29yZCI6InBhc3N3b3JkMTIzIn0.T7BxAIUhdLTuo2mH00Zus1S8QfxLmAwCVgzjqa1Vz01KD-e4KdQIjbaJ4PLD9ZDfAfD8FPHurdjmyRU_ay8-H1sICW8ZIGG_4inbsHNJR-jCePXD-HrPCFhNhK7kUajJMKdZIQXAQAJrFi_Tbkp05WdTB9vVpPkn0BMDNBmbW6_iLVSSLzx70YxM7E8kdpvVKqYE4_1o2DLDNmTA1LN6K5eni8vVEMLKij2ckNfcDqA7ksnviKAMlwmu0ocEXRE-XXCujj83nbcfnY1fxqK0-jsqUtQMXJT1Y_bGjETfP5LMLZGwuf38T9qjP78nm9B3en9ed_QF_nhJmW2GA" http://127.0.0.1:5000/protected-endpoint
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

* 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.
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127.0.0.1 - - [23/Mar/2025 17:00:49] "GET /protected-endpoint HTTP/1.1" 200 -
* Detected change in '/Users/aasmijoshi/projects/test_app.py', reloading
* Restarting with stat
* Debugger is active!
* Debugger PIN: 343-239-847
^C

(venv) venvaasmijoshi@MacBookAir projects %

Using cached packaging-24.2-py3-none-any.whl (65 kB)
Installing collected packages: pluggy, packaging, iniconfig, pytest
Successfully installed iniconfig-2.1.0 packaging-24.2 pluggy-1.5.0 pytest-8.3.5

[notice] A new release of pip is available:
25.0 -> 25.0.1
[notice] To update, run: pip install --upgrade pip

venvaasmijoshi@MacBookAir projects % pytest

===== test session starts =====
platform darwin -- Python 3.13.2, pytest-8.3.5, pluggy-1.5.0
rootdir: /Users/aasmijoshi/projects
collected 2 items

test_app.py .. [100%]

===== 2 passed in 0.26s =====
```