SciAuth Student Fellow: Final Presentation
December 12, 2022

Abdullah Al Raqibul Islam
PhD Student, UNC Charlotte

SciAuth student fellow, Fall - 2022
Mentor: Dr. Derek Weitzel
Outline

● Project goals
● Project outcomes
● Learning opportunities and future direction
Project goals

- Build a python based compliance test suite to verify SciTokens
Project goals

- Build a python based compliance test suite to verify SciTokens

```
python3 verify_token.py --token 'eyJhbG...
```

The provided algorithm in the token is not the one supported by SciToken library (RS256, ES256).

Figure: Workflow of python based test suite to verify SciTokens
Project outcomes

- Build a python based compliance test suite to verify SciTokens
- Reported/fixed two bugs
Project outcomes: verify_token.py

- Can find it at: scitokens/src/scitokens/tools
Project outcomes: verify_token.py

- Can provide user friendly message for the following type of exceptions:
  - MissingKeyException
  - UnsupportedKeyException
  - MissingIssuerException
  - NonHTTPSIssuer
  - InvalidTokenFormat
  - UnableToCreateCache
  - SciTokensException
Project outcomes: verify_token.py

- In case of a valid input token, the program will print the climes.
Project outcomes: verify_token.py

- In case of an invalid input token, the program will print the user friendly message.

raqib-pro:tools aislam6$

raqib-pro:tools aislam6$ python3 verify_token.py 'eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJhdWQiOiJ1bGloLnR4dCI6Im1pc3N1bWUifQ._TmX7p0m5sU3Ld4pKZ2w5Rz04myEwDRcV85Q5bV6o2'  
raqib-pro:tools aislam6$

Issuer is not over HTTPS. RFC requires it to be over HTTPS.
Project outcomes: Bug Fixes

- **BugFix-1**: The deserialize() function in SciToken class should raise the "MissingIssuerException" in case issuer is not provided.
Project outcomes: Bug Fixes

- **BugFix-2:** Cache file directory creation requires to be done under try-catch block.
  - Otherwise important SciToken related exception (e.g., “UnableToCreateCache”) was not raised.
Project outcomes: Bug Fixes

- Finally, added unit tests for these bug fixes.
  - Created and merged two pull requests in the GitHub repo.
Learning opportunities and future direction

- Learned about JSON Web Token (JWT) technologies.
- Learned unit-testing in Python.
- Learned about the importance of testing/checking automation in GitHub.
- Future direction: Can develop a web page to allow the users to use the current verification tool over the internet.
Learning opportunities and future direction

- Learned about JSON Web Token (JWT) technologies.
- Learned unit-testing in Python.
- Learned about the importance of testing/checking automation.
- Future direction: Can develop a web page to allow the users to use the current verification tool over the internet.

Thanks to my mentor Dr. Derek Weitzel for his kind support!
Thank You

Question?