11/8/21 Tina Martin

Acceptance Criteria:
The following is the requirement specification that was used in building the password hashing application. It describes what the application should do.

1. ● When launched, the application should wait for http connections. ● It should answer on the PORT specified in the PORT environment variable.
2. ● It should support three endpoints:
    a. ○ A POST to /hash should accept a password. It should return a job identifier immediately. It should then wait 5 seconds and compute the password hash. The hashing algorithm should be SHA512.
    b. ○ A GET to /hash should accept a job identifier. It should return the base64 encoded password hash for the corresponding POST request.
        i. Defect: Returned the incorrect base64 encoded pwd
    c. ○ A GET to /stats should accept no data. It should return a JSON data structure for the total hash requests since the server started and the average time of a hash request in milliseconds.
        i. Defect: The request was in minutes, not milliseconds
3. ● The software should be able to process multiple connections simultaneously.
4. ● The software should support a graceful shutdown request. Meaning, it should allow any in-flight password hashing to complete, reject any new requests, respond with a 200 and shutdown.
    a. Defect: Ungraceful shutdown: After post and close app receives -receives "Recv failure: Connection was reset"
    b. Defect: Shutdown doesn't return 200 error
5. ● No additional password requests should be allowed when shutdown is pending.

Sample write up of a few of the above defects in red:

1. Defect: Ungraceful shutdown doesn't allow post to complete
    a. Steps:
        i. From command prompt type: curl -X POST -H "application/json" -d "{\"password\":\"angrymonkey\"}" http://127.0.0.1:8088/hash
        ii. Immediately manually close the .exe app
        iii. Expected results: Should process the request and not error out
        iv. Actual results: On the command prompt received the following error: "Recv failure: Connection was reset" (Include a screencast video)
2. Defect: Get returns the incorrect base64 encoded password
    a. Steps:
        i. Launch .exe app
        ii. From command prompt type: curl -X POST -H "application/json" -d "{\"password\":\"angrymonkey\"}" http://127.0.0.1:8088/hash
        iii. From command prompt type: curl -H "application/json" http://127.0.0.1:8088/hash/x where x is the identifier

    iv.   Copy long password
    v.   Go to https://www.base64decode.org/>select decode button>copy in the returned encrypted password.
    vi.   Expected results:
        1. Should return the password entered in step ii (angrymonkey)
    vii.   Actual results:
        1. Returns this really cryptic password that isn't even close to (angrymonkey) (insert screenshot for developers)