

Assignment

Passwords should never be stored in plain text. They should be stored as hashes, just in case the password list is discovered. However, not all hashes are created equal.

For this project you will learn about the importance of good security by creating a password cracker to figure out passwords that were hashed using SHA-1.

Create a function that takes in a SHA-1 hash of a password and returns the password if it is one of the top 10,000 passwords used. If the SHA-1 hash is NOT of a password in the database, return "PASSWORD NOT IN DATABASE".

The function should hash each password from `top-10000-passwords.txt` and compare it to the hash passed into the function.

The function should take an optional second argument named `use_salts`. If set to true, each salt string from the file `known-salts.txt` should be appended AND prepended to each password from `top-10000-passwords.txt` before hashing and before comparing it to the hash passed into the function.

Here are some hashed passwords to test the function with:

- `b305921a3723cd5d70a375cd21a61e60aabb84ec` should return "sammy123"
- `c7ab388a5ebefbf4d550652f1eb4d833e5316e3e` should return "abacab"
- `5baa61e4c9b93f3f0682250b6cf8331b7ee68fd8` should return "password"

Here are some hashed passwords to test the function with when `use_salts` is set to True :

- `53d8b3dc9d39f0184144674e310185e41a87ffd5` should return "superman"
- `da5a4e8cf89539e66097acd2f8af128acae2f8ae` should return "q1w2e3r4t5"
- `ea3f62d498e3b98557f9f9cd0d905028b3b019e1` should return "bubbles1"

The `hashlib` library has been imported for you. You should consider using it in your code. [Learn more about "hashlib" here.](#)

Development

Write your code in `password_cracker.py` . For development, you can use `main.py` to test your code. Click the “run” button and `main.py` will run.

Testing

The unit tests for this project are in `test_module.py` . We imported the tests from `test_module.py` to `main.py` for your convenience. The tests will run automatically whenever you hit the “run” button.

Submitting

Copy your project’s URL and submit it to freeCodeCamp.