



VSR://EDU/SVS

Security of Distributed Software

SS 2018 – 3. Tutorial

Valentin Siegert M.Sc.

VSR.Informatik.TU-Chemnitz.de

Task 1

What is Session Hijacking?

The Session Hijacking attack consists of the exploitation of the web session control mechanism, which is normally managed for a session token.

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How do you get a Session-Token?

- Predictable Session Token
- Session Sniffing
- Client-side attacks (XSS)

<https://mytuc.org/vwfx> enables registered users to retrieve the PIN number of his mobile phone (e.g. using username Max and password Mustermann).

Find out the PIN number of user John.

2 Task 2

Install a MySQL database

1. Create a database named {URZ Nutzername}-svs with a table *personen*:
 - id: INT, Index: PRIMARY, AUTO_INC
 - name: CHAR(20)
 - age: INT
2. Add some data
3. Write an SQL query, which returns all persons, whose name is *Max*.
4. Extend *personen.php* to send above query to DB.
5. Extend program with search functionality (use string concatenation)

What is SQL-Injection?

A SQL injection attack consists of insertion or "injection" of a SQL query via the input data from the client to the application

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What can be done with SQL Injection?

...read sensitive data from the database, modify database data (Insert/Update/Delete), execute administration operations on the database (such as shutdown the DBMS), recover the content of a given file present on the DBMS file system and in some cases issue commands to the operating system

How can a SQL-Query be injected?

- Form data

```
POST / HTTP/1.1
...
username=max&password=mustermann
```

- URL paramter

```
GET /login.php?username=max&password=mustermann HTTP/1.1
```

- Cookies

```
Cookie: username=max; id=114;
```


3 Task 3

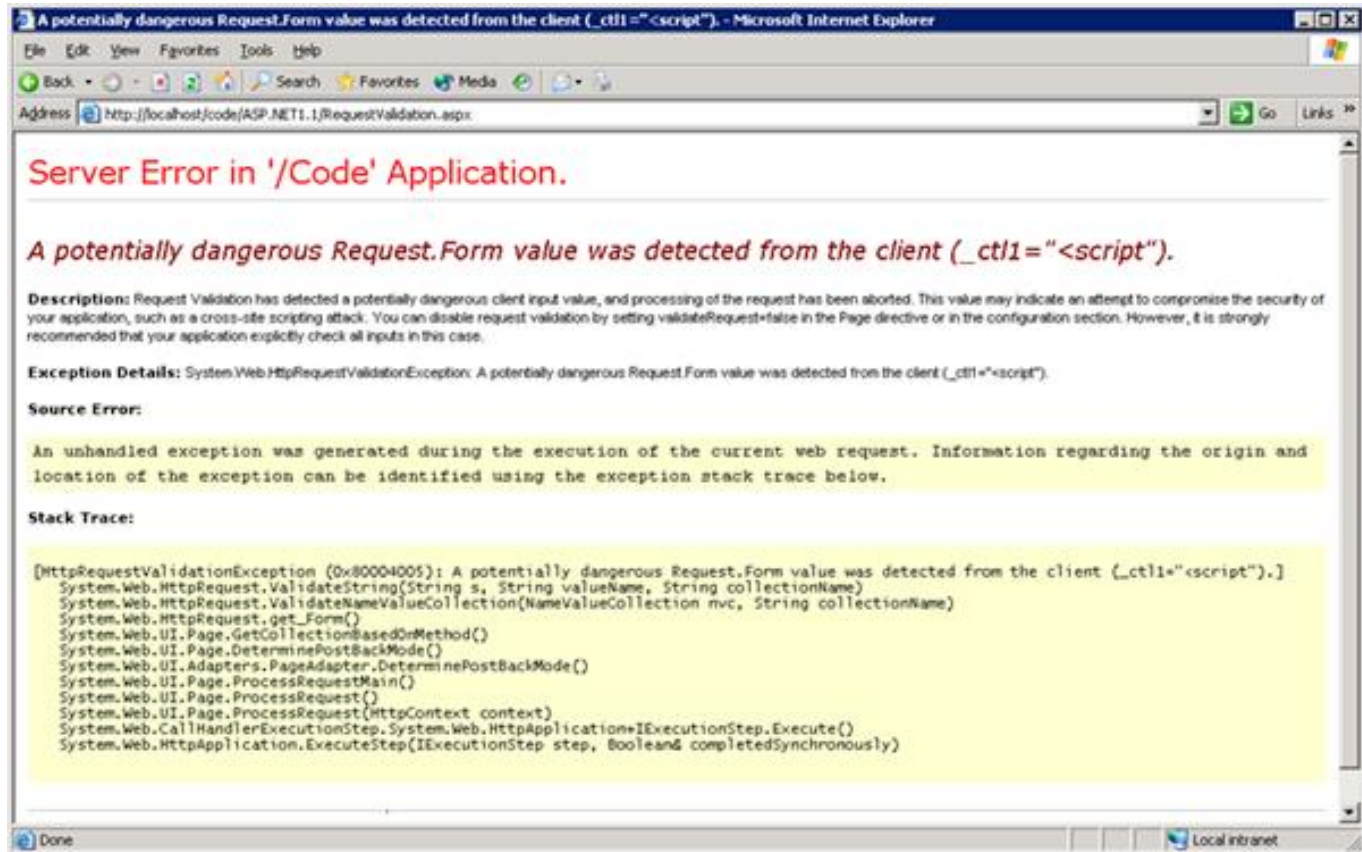
Open the page from task 2, cf. <https://mytuc.org/vkdt>

1. What you can enter into the search field to find all persons in the table?
2. What can you enter to find out, if the current database contains a non-empty table *gehaelter*?
3. Answer the following:
 - a. Which mistakes are exploited during SQL-Injection attacks?
 - b. Which possibilities to inject SQL queries do you know?
 - c. Which defense mechanisms against SQL injection exist?

SQL-Injection Protection:

- Filter or mask special chars
- Check input values for properties
- Black-/Whitelisting of parameters
- Separation of Data and SQL-Queries
- Fine Distinction of user rights
- Disable unused DB functionalities
- Apply Web Application Firewalls

Web Application Firewall



4 Homework

At <https://mytuc.org/yngk> one can find a form to request user data.

One valid pair of username and password is user1 and pass1.

Find out, which further users exist in the table.

Questions?

valentin.siegert@informatik.tu-chemnitz.de

VSR.Informatik.TU-Chemnitz.de