TANMAY MITTAL
2020UCP1795

## 0. Installing and setting up DVWA on Ubuntu based platform

```
$ sudo apt-get remove docker docker-engine docker.io containerd runc
$ sudo apt-get update
$ sudo apt-get install \
    ca-certificates \
    curl \
    gnupg
$ sudo mkdir -m 0755 -p /etc/apt/keyrings
$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --
dearmor -o /etc/apt/keyrings/docker.gpg
$ echo \
  "deb [arch="$(dpkg --print-architecture)" signed-
by=/etc/apt/keyrings/docker.gpg] https://download.docker.com/linux/ubuntu \
  "$(. /etc/os-release && echo "$VERSION_CODENAME")" stable" | \
  sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
$ sudo apt-get update
$ sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-
plugin docker-compose-plugin
$ sudo docker run --rm -it -p 80:80 vulnerables/web-dvwa
```


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## 1.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. A successful SQL injection exploit can 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. SQL injection attacks are a type of injection attack, in which SQL commands are injected into data-plane input in order to affect the execution of predefined SQL commands.

**Severity 1: SQL Injection**

```php
<?php

if( isset( $_REQUEST[ 'Submit' ] ) ) {
    // Get input
    $id = $_REQUEST[ 'id' ];

    // Check database
    $query  = "SELECT first_name, last_name FROM users WHERE user_id = '$id';";
    $result = mysqli_query($GLOBALS["___mysqli_ston"],  $query ) or die( '<pre>' . ((is_object($GLOBALS["___mysqli_ston"])) ? mysqli_error($GLOBALS["___mysqli_ston"]) : (($___mysqli_res

    // Get results
    while( $row = mysqli_fetch_assoc( $result ) ) {
        // Get values
        $first = $row["first_name"];
        $last  = $row["last_name"];

        // Feedback for end user
        echo "<pre>ID: {$id}<br />First name: {$first}<br />Surname: {$last}</pre>";
    }

    mysqli_close($GLOBALS["___mysqli_ston"]);
}

?>
```

# Vulnerability: SQL Injection

User ID: 1 Submit

```
ID: 1
First name: admin
Surname: admin
```

# Vulnerability: SQL Injection

User ID: '=' Submit

```
ID: '='
First name: admin
Surname: admin

ID: '='
First name: Gordon
Surname: Brown

ID: '='
First name: Hack
Surname: Me

ID: '='
First name: Pablo
Surname: Picasso

ID: '='
First name: Bob
Surname: Smith
```

## Severity 2: Blind SQL Injection


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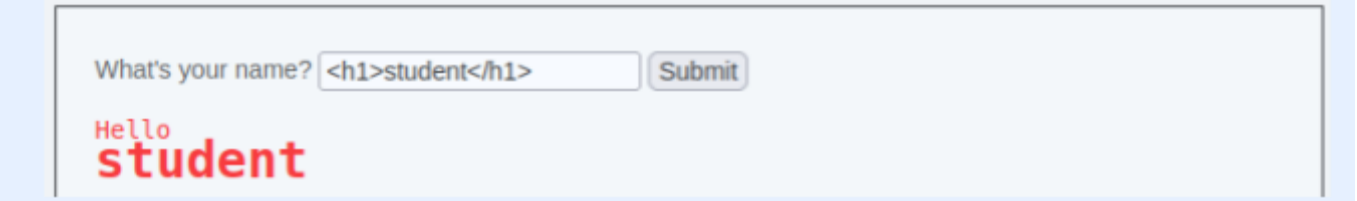
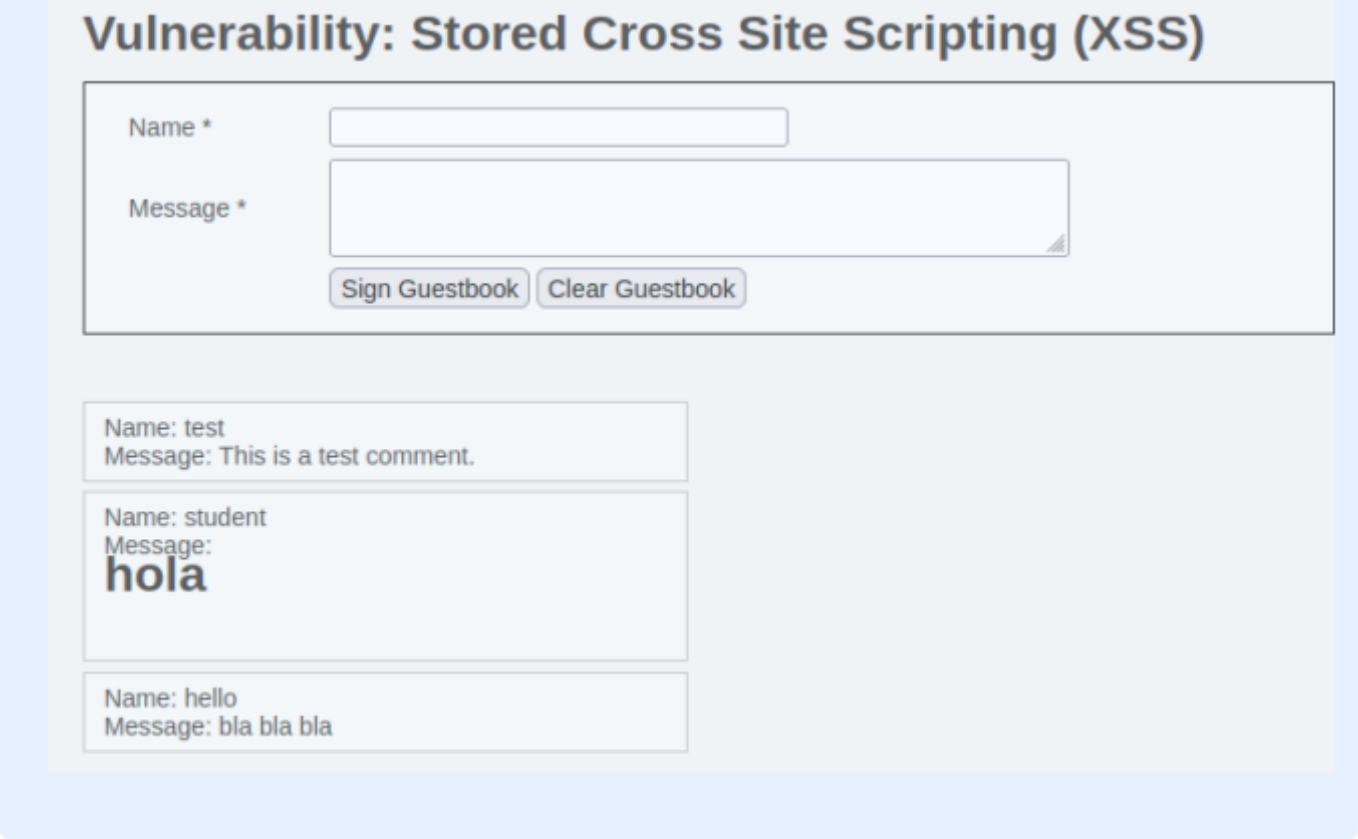
## 2. XSS

Cross-site scripting (also known as XSS) is a web security vulnerability that allows an attacker to compromise the interactions that users have with a vulnerable application. It allows an attacker to circumvent the same origin policy, which is designed to segregate different websites from each other. Cross-site scripting vulnerabilities normally allow an attacker to masquerade as a victim user, to carry out any actions that the user is able to perform, and to access any of the user's data. If the victim user has privileged access within the application, then the attacker might be able to gain full control over all of the application's functionality and data.

**XSS (Reflected)**




**XSS (Stored)**

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## 3. CSRF (Cross Site Request Forgery)

Cross-Site Request Forgery (CSRF) is an attack that forces an end user to execute unwanted actions on a web application in which they're currently authenticated.