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TRAINING THE CYBER SECURITY WORKFORCE

Web Application Vulnerabilities

VULNERABILITY MANAGEMENT

Web Application Vulnerabilities

- Injection Attacks
- Cross-Site Scripting (XSS)
- Cross-Site Request Forgery (CSRF)

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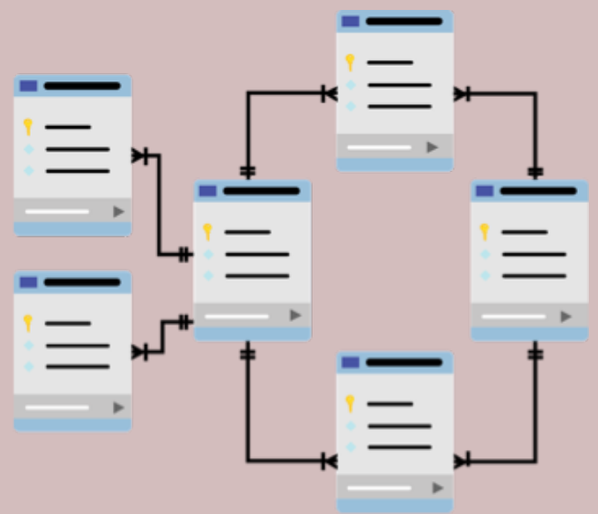
Injection Attacks

- Send commands through a web server to a backend system, bypassing the normal security controls
- Most commonly done as an SQL inject
- Prevent this through input validation and using least privilege for the databases



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SQL Injection Attacks

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User ID: jason

Password: mypassword

```
select * from Users where user_id= ‘jason’ and password = ‘mypassword’
```

User ID: ' OR 1=1; /*

Password: */--

```
select * from Users where user_id= ‘` OR 1 = 1; /* ‘ and password =‘ */--’
```

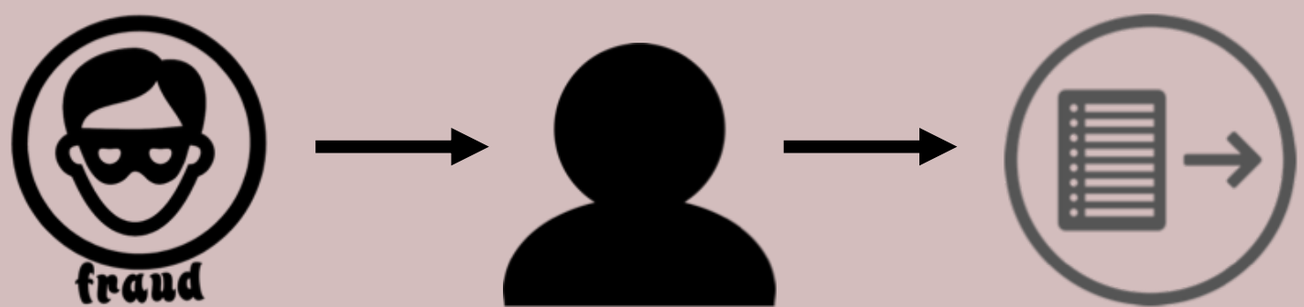
Cross-Site Scripting (XSS)

- Attacker embeds scripting commands on a website that is executed by a regular user without knowing it
- Victim in this case is the regular user, not the server
- If one of these are discovered during a scan, you need to work with the developer to fix the code and setup proper controls to prevent it in the future

Cross-Site Request Forgery

- Attacker forces a user to execute actions on web server which they authenticated

- Attacker cannot see web server's response, but this attack can be used to have victim transfer funds, change their password, etc.



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Web Application Scans

- Nessus and Qualysguard can scan for web vulnerabilities, but they aren't specialized (like Nikto) to do it