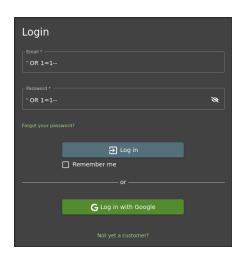


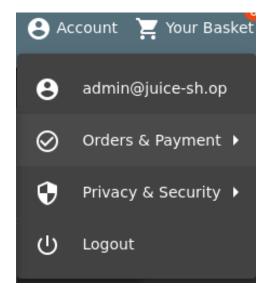
OWASP Juice Shop Vulnerabilities Documentation

Vulnerability 1: SQL Injection

Description:

SQL Injection is a vulnerability that allows attackers to manipulate SQL queries by injecting malicious input into query parameters. This can lead to unauthorized data access, data modification, or even deletion of database contents.





Exploitation Steps:

- 1. Navigate to the login page of the Juice Shop.
- 2. In the username field, input a SQL payload such as or or 1=1--.
- 3. Leave the password field empty or input any value.
- 4. Observe if you bypass authentication or retrieve sensitive information.

Example Payload:

' OR 1=1--

Impact:

Unauthorized access to user accounts and sensitive data stored in the database.

Mitigation:

- Use parameterized queries or prepared statements.
- Validate and sanitize user inputs.
- Implement proper error handling to prevent detailed error messages from being shown.

Vulnerability 2: Cross-Site Scripting (XSS)

Description:

XSS occurs when an attacker injects malicious scripts into web pages that are executed in a victim's browser. This can result in session hijacking, data theft, or redirecting users to malicious sites.

Exploitation Steps:

- 1. Navigate to a comment or feedback section in the Juice Shop.
- 2. Enter a malicious script, such as <script>alert('XSS')</script>.
- 3. Submit the input and observe if the script executes in the browser.

Example Payload:

```
<script>alert('XSS')</script>
```

Impact:

- Compromise of user data and sessions.
- Potential phishing or redirect attacks.

Mitigation:

- Sanitize and encode user inputs before displaying them on the webpage.
- Implement Content Security Policy (CSP) to restrict script execution.

• Use secure frameworks that handle XSS by default.

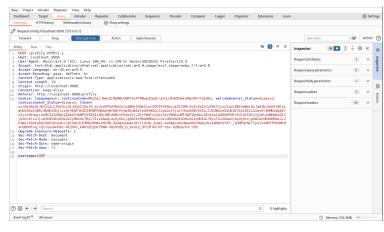
Vulnerability 3: Cross-Site Request Forgery (CSRF)

Description:

CSRF is a vulnerability that tricks authenticated users into unknowingly performing malicious actions on a web application. This happens when an attacker sends a forged request on behalf of the victim, leveraging their active session to execute unauthorized actions such as changing account details or transferring funds.

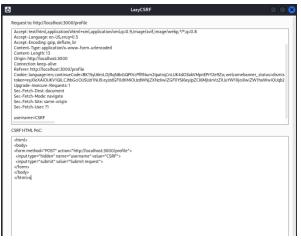
Screenshots:





2

1





4

3



5

Exploitation Steps:

- 1. We used Burp Suite to craft a malicious request (e.g., a POST request to change user account details).
- 2. Embed the forged request into a phishing page or script.
- 3. Trick the victim into visiting the page while logged into the vulnerable application.
- 4. Observe if the malicious action is executed without user consent.

HTML Code we used:

Impact:

- Unauthorized actions performed on behalf of legitimate users.
- Potential theft of sensitive information or alteration of user data.
- Abuse of application functionality to harm users or the system.

Mitigation:

- Implement anti-CSRF tokens to validate requests and ensure they originate from legitimate sources.
- Use SameSite cookies to restrict cross-origin requests.
- Validate the **Origin** and **Referer** headers for sensitive actions.

Vulnerability 4: Login Admin Bypass

Description:

Login Admin Bypass allows unauthorized users to access the admin panel without valid credentials due to weak authentication mechanisms.

Exploitation Steps:

- 1. Navigate to the login page of the Juice Shop.
- 2. Use common default admin credentials (e.g., admin:admin or admin:password).
- 3. Alternatively, inspect the client-side code for hardcoded credentials or bypass authentication via a SQL injection payload.
- 4. Observe if admin access is granted without proper authentication.

Impact:

- Full control over administrative functionalities.
- Potential manipulation of user data and system configurations.

Mitigation:

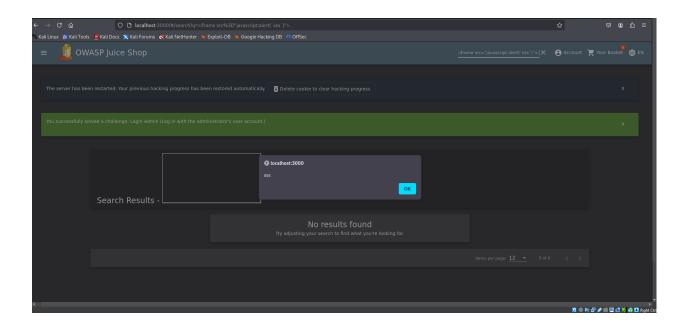
• Remove hardcoded credentials from client-side code.

- Use strong and unique passwords for admin accounts.
- Implement multi-factor authentication for critical accounts.

Vulnerability 5: DOM-based Cross-Site Scripting (DOM XSS)

Description:

DOM XSS occurs when client-side JavaScript processes untrusted user input (from sources like the URL or form fields) and injects it into the page without proper sanitization. This allows attackers to execute malicious scripts in the victim's browser.



Exploitation Steps:

- 1. Inject a malicious script (e.g., <script>alert('DOM XSS')</script>) into a vulnerable input (like a URL parameter).
- 2. Observe if the script executes when the page processes the input.

Example Payload:

```
<script>alert('DOM XSS')</script>
```

Impact:

• Execution of malicious scripts in the victim's browser.

Theft of sensitive data (e.g., cookies, session tokens) or phishing attacks.

Mitigation:

- Sanitize and escape user input before injecting it into the DOM.
- Avoid unsafe methods like innerHTML, eval(), or document.write().
- Implement Content Security Policy (CSP) to block unauthorized scripts.

Vulnerability 6: Weak Password Strength

Description:

Weak password strength occurs when users create easily guessable or simple passwords, leaving accounts vulnerable to brute-force or dictionary attacks. Insufficient password complexity can allow attackers to gain unauthorized access to sensitive user data or administrative functions.

Exploitation Steps:

- 1. Use Burp Suite to intercept and analyze login requests.
- 2. Test common, weak passwords (e.g., password123, admin, 123456).
- 3. Observe if weak passwords successfully authenticate, gaining access to user accounts.

Impact:

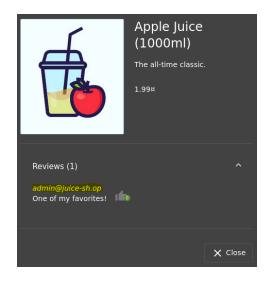
- Unauthorized access to user or admin accounts.
- Potential exposure or modification of sensitive data.
- Increased risk of brute-force attacks due to weak password policies.

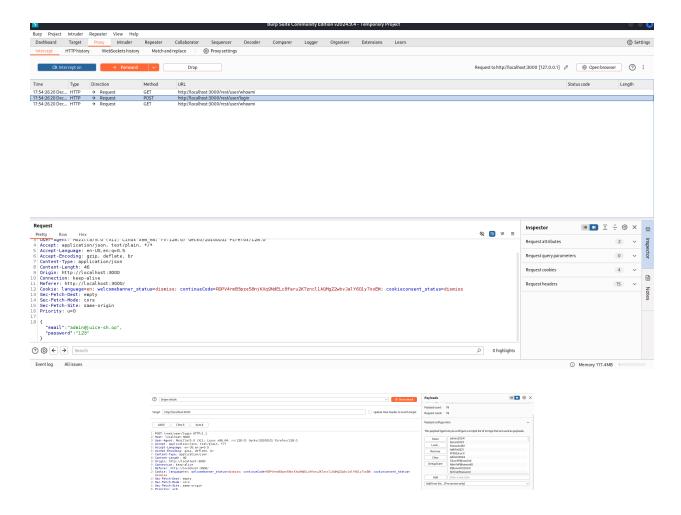
Mitigation:

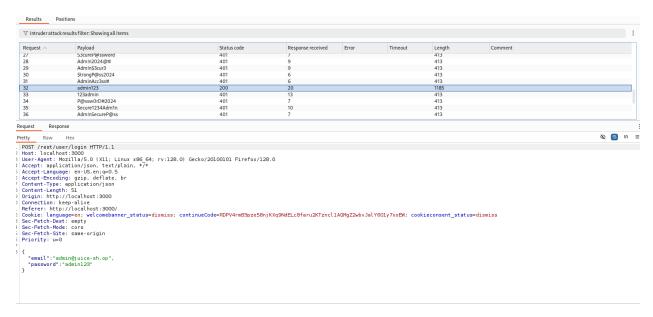
- Enforce strong password policies (e.g., minimum length, complexity requirements).
- Implement multi-factor authentication (MFA) for critical accounts.
- Use rate limiting or account lockouts to prevent brute-force attacks.

Screenshots:

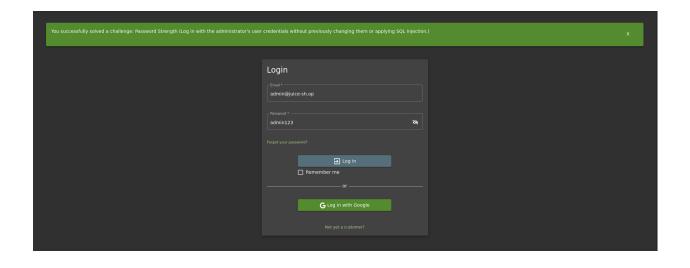
info gathering







Status code 200 OK means that this worked



Vulnerability 7: Credential Documents

Description:

The Credential Documents vulnerability occurs when sensitive information, such as user credentials, API keys, or other confidential data, is improperly stored or exposed on the server or front end. These files may include usernames, passwords, or other private information that attackers can exploit to compromise user accounts or systems.

Exploitation Steps:

- 1. We used Burp Suite to intercept our request to know about them. We found that the file called legal.md.
- 2. We sent this request to the repeater to modify it and then sent it again. We requested to GET /ftp/ so it gave us all the files in the ftp directory.
- 3. We requested to GET /ftp/acquisitions.md and we saw all its confidential content.

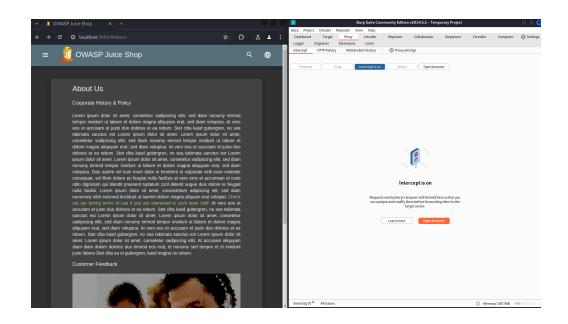
Impact:

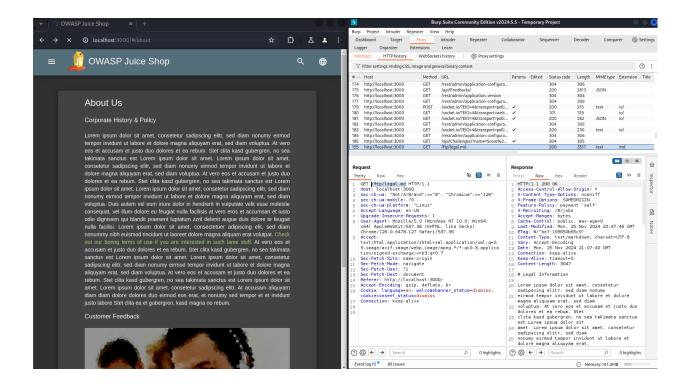
- Exposed credentials can lead to unauthorized access to user accounts and sensitive data
- Leaked credentials for APIs or third-party services can lead to abuse of external systems and resources.
- Users lose trust in the application, which negatively impacts the organization's reputation and user base.

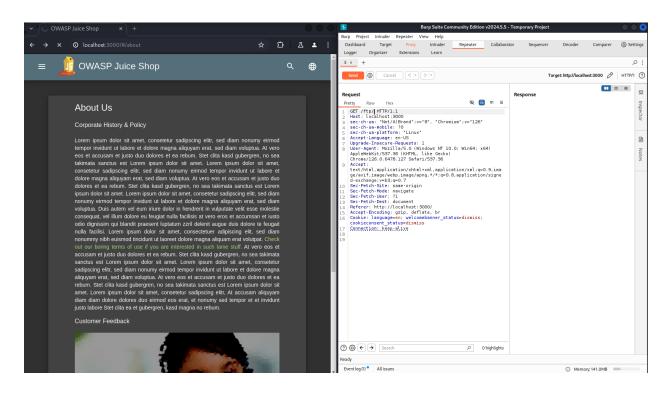
Mitigation:

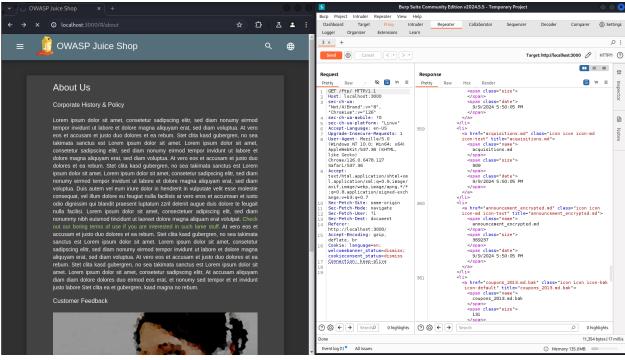
- Store sensitive credentials in encrypted formats using strong encryption algorithms.
- Limit access to credential files and sensitive directories to authorized users only.
- Conduct regular security audits and penetration tests to identify and remediate vulnerabilities.

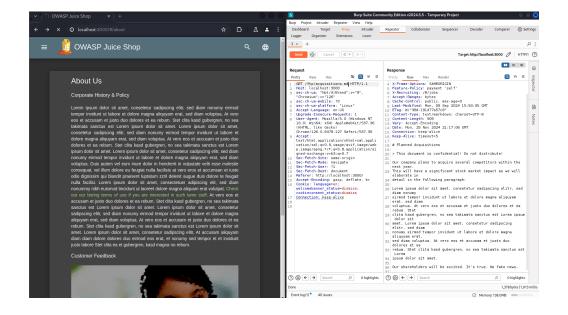
Screenshots:











Q



You successfully solved a challenge: Confidential Document (Access a confidential document.)

)

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Customer Feedback