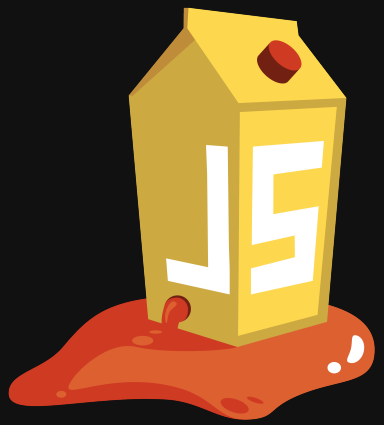
OWASP Juice Shop 9.x

Probably the most modern and sophisticated insecure web application



The most trustworthy online shop out there (@dschadow) — The best juice shop on the whole internet! (@shehackspurple)
Actually the most bug-free vulnerable application in existence! (@vanderaj) — First you 😂😂 then you 😢 (@kramse)

http://owasp-juice.shop

Presentation by Björn Kimminich / @bkimminich

What is "OWASP"?!?

The Open Web Application Security Project (OWASP) is a 501(c)(3) worldwide not-for-profit charitable organization focused on improving the security of software.

Why "Juice Shop"?!?

Translating "dump" or "useless outfit" into German yields "Saftladen" which can be reverse-translated word by word into "juice shop". Hence the project name.

That the initials "JS" match with those of "JavaScript" was purely coincidental!

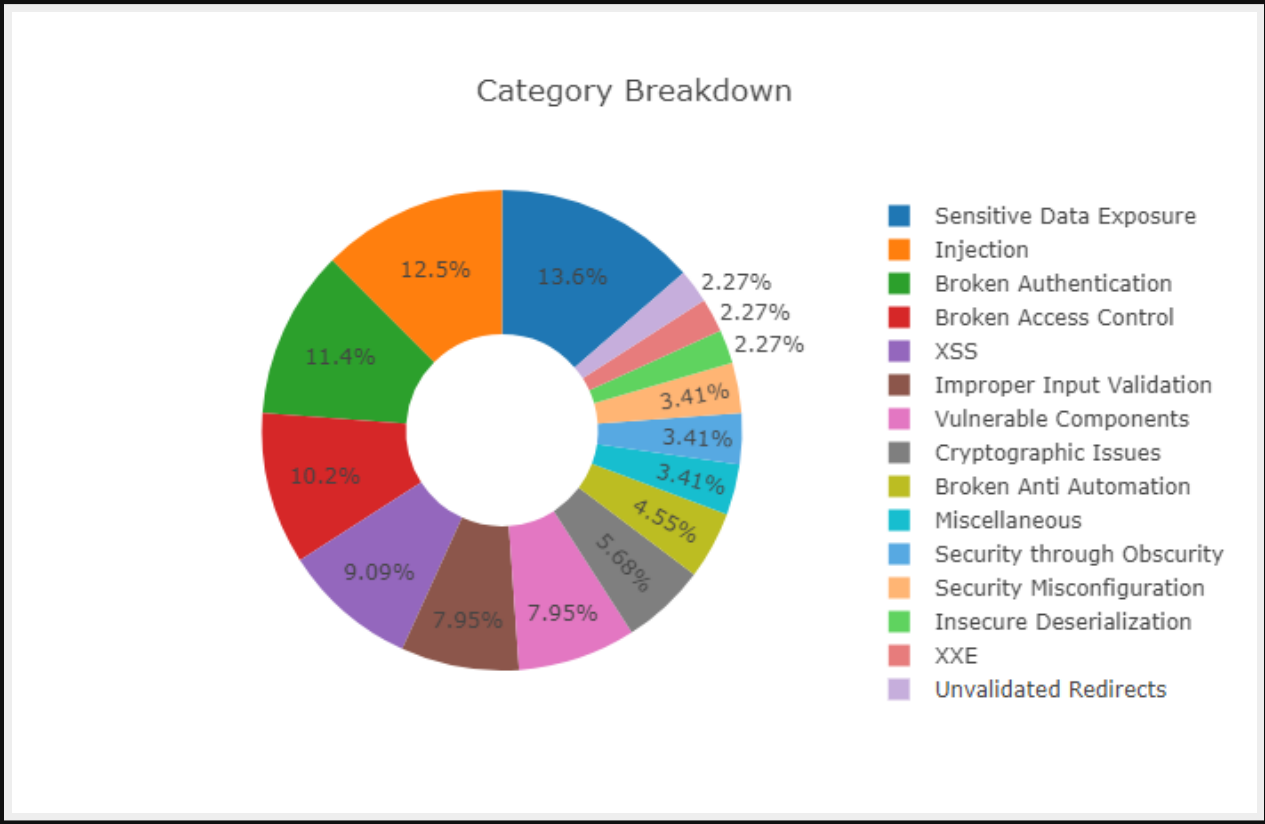

Click here for a happy path shopping tour!
Unsuspectingly browse the Juice Shop like Average Joe!
OPEN CHAT

Simple Installation

Comes with cloud, local and containerized run options

88+ Hacking Challenges

Covering various vulnerabilities and serious design flaws



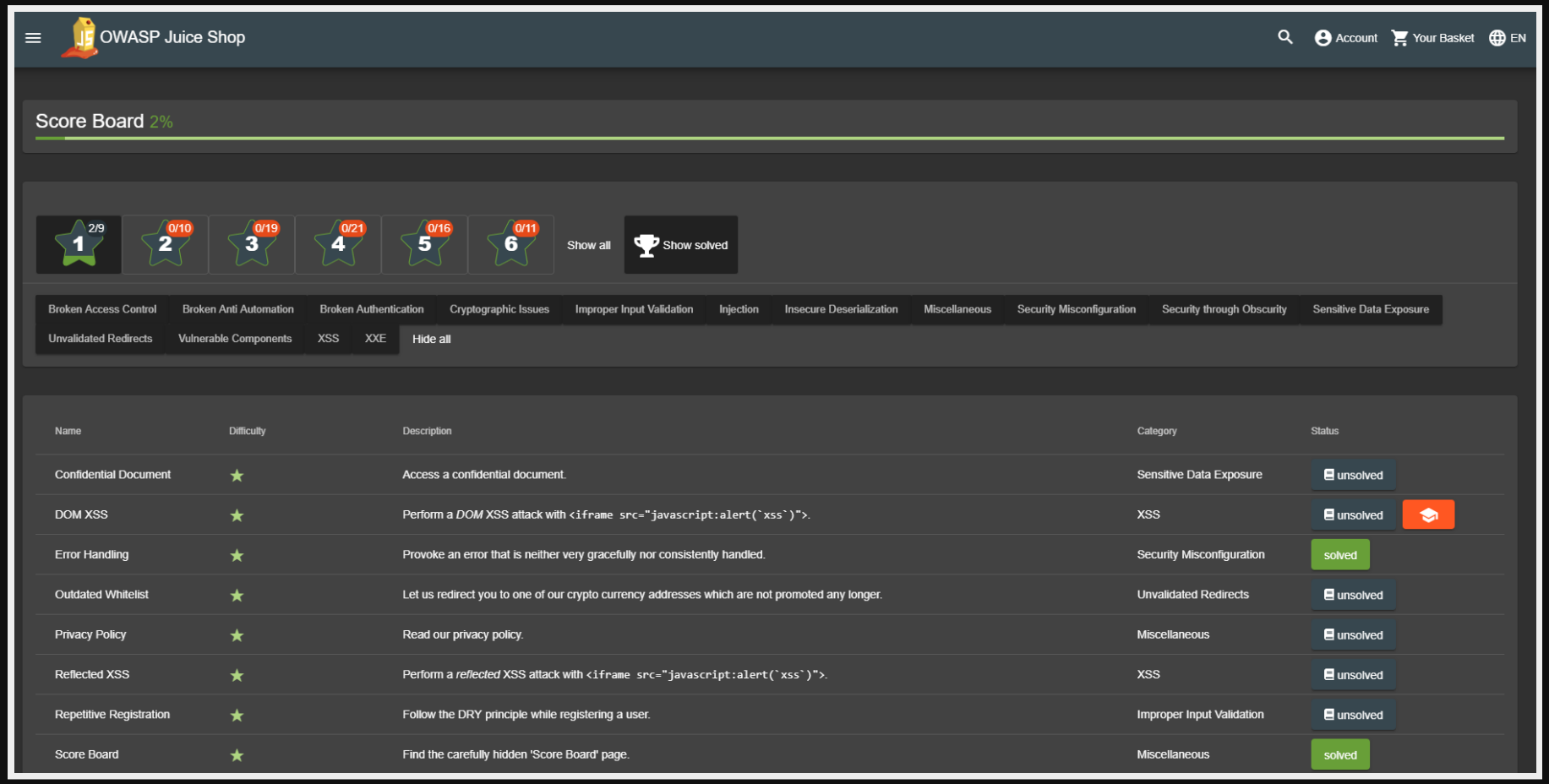
OWASP Juice Shop covers all vulnerabilities from the latest OWASP Top 10 and more.

Challenge Difficulty

There's something to do for beginners and veterans alike

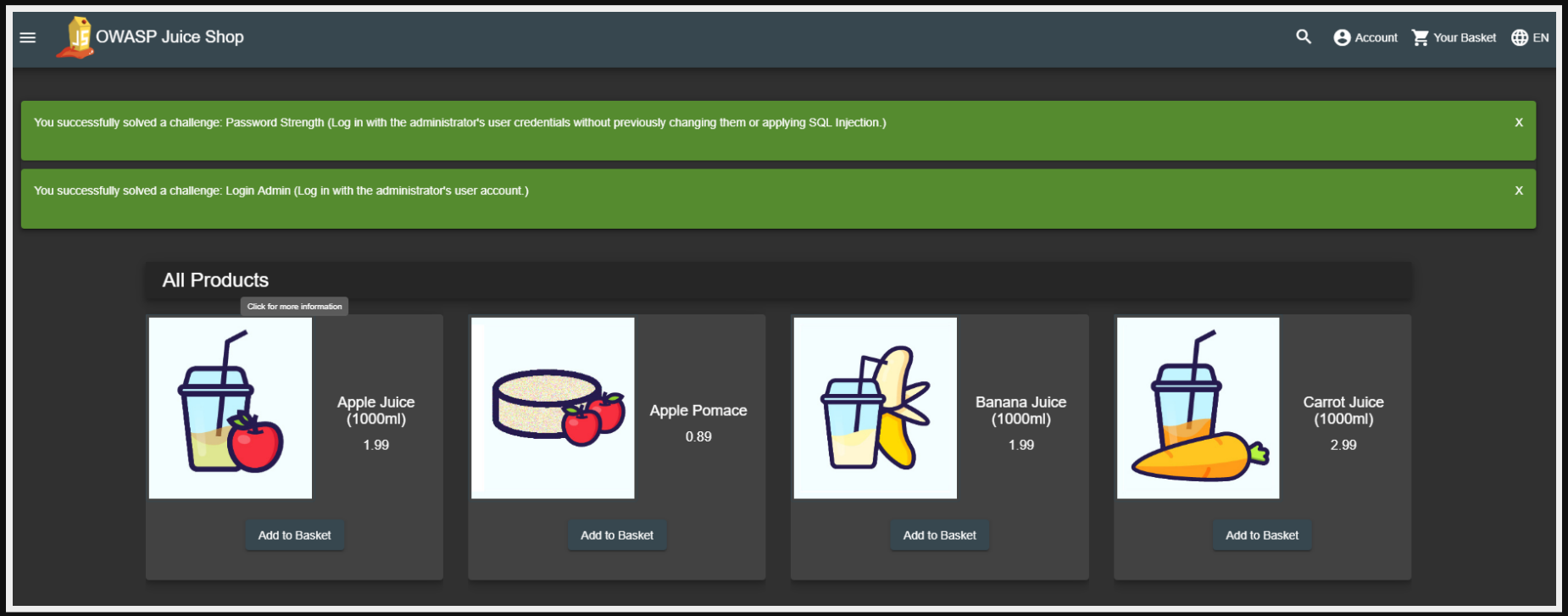
Score Board

Challenge progress is tracked on server-side



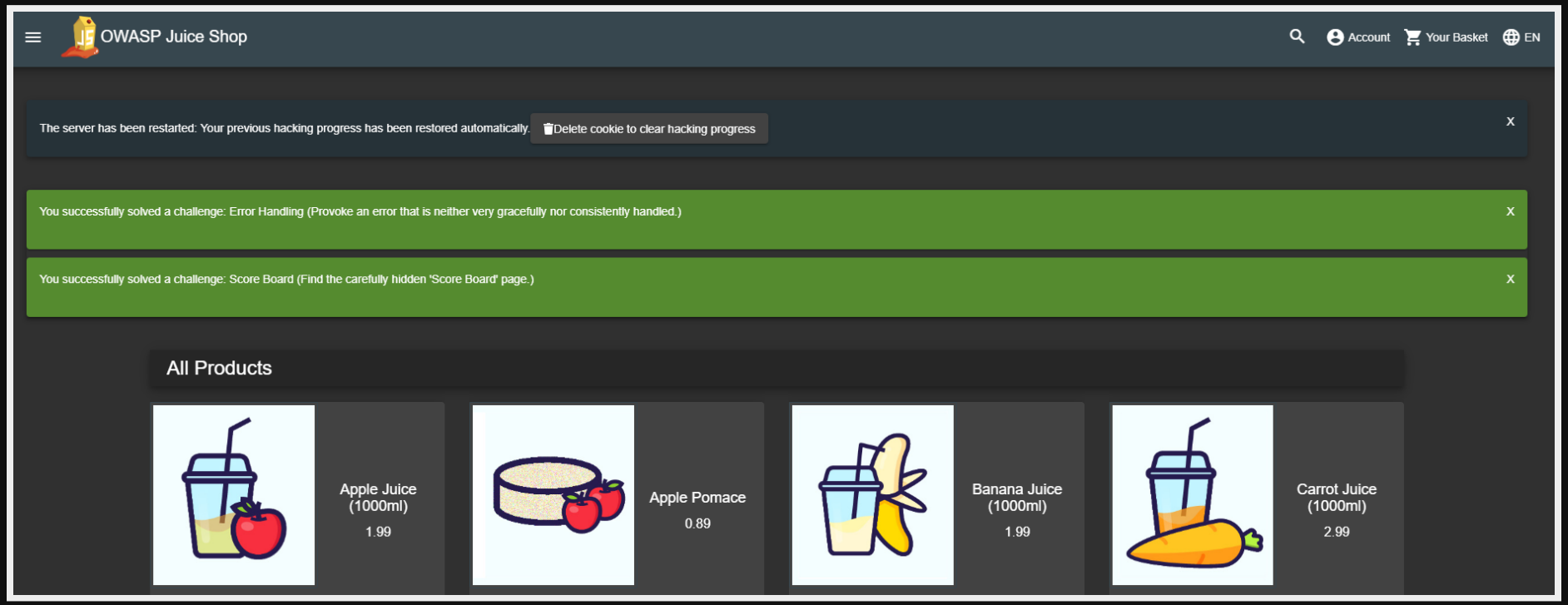
Immediate Feedback

Solved challenges are announced as push notifications



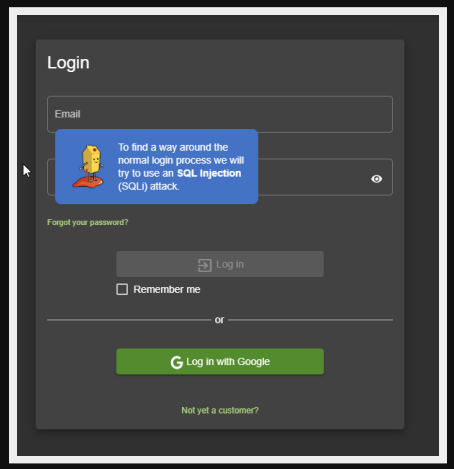
Restore your Progress

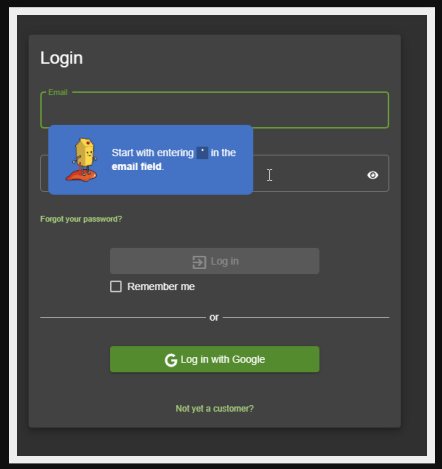
Auto-saves your hacking progress and restores on server restart

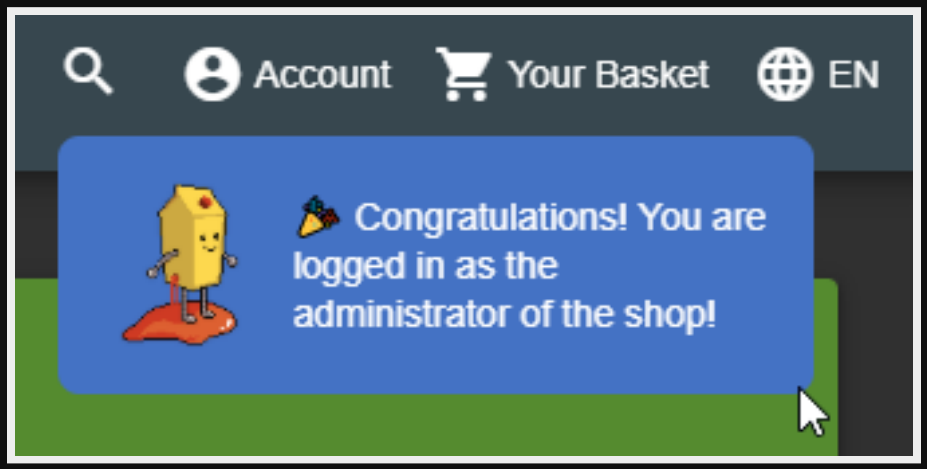


Hacking Instructor

Some challenges come with an embedded interactive tutorial

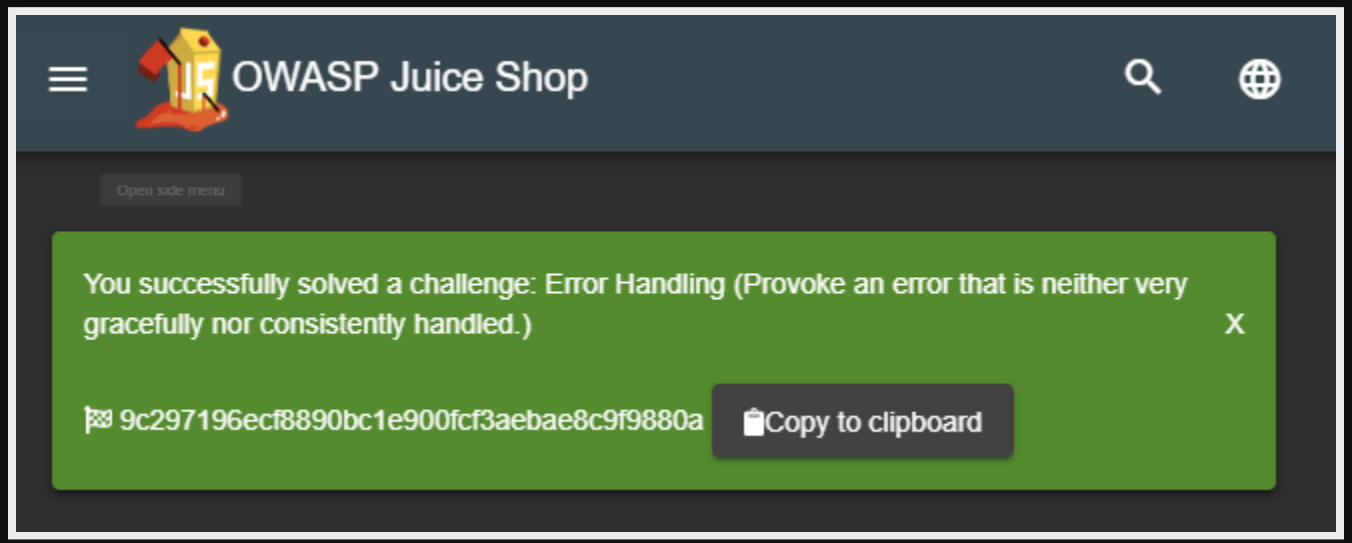






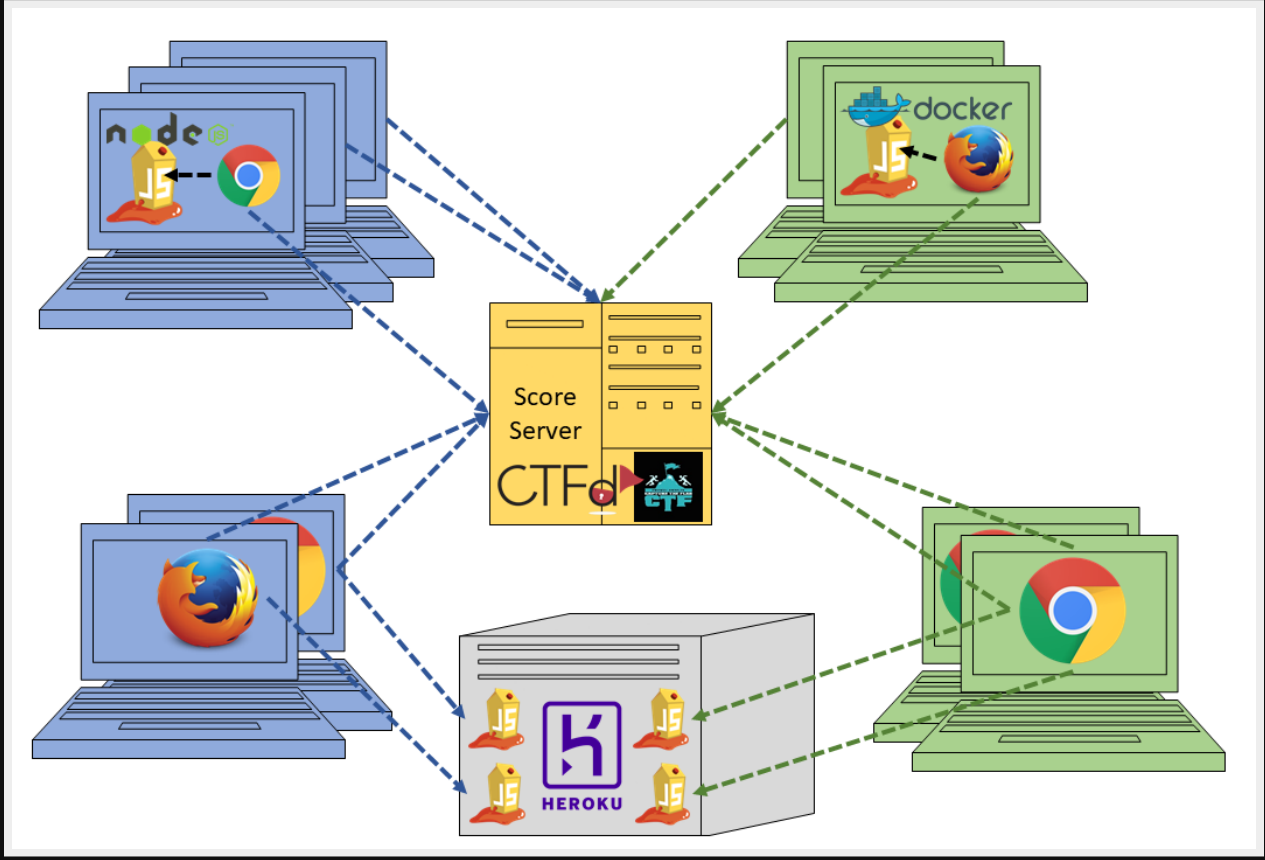
Juice Shop is CTF-ready

Flag codes can optionally be displayed for solved challenges



Frictionless CTF-Events

All participants use individual Juice Shop instances anywhere, sharing only the flag code-`ctfKey` and a central score server.



CTF Extension 6.x

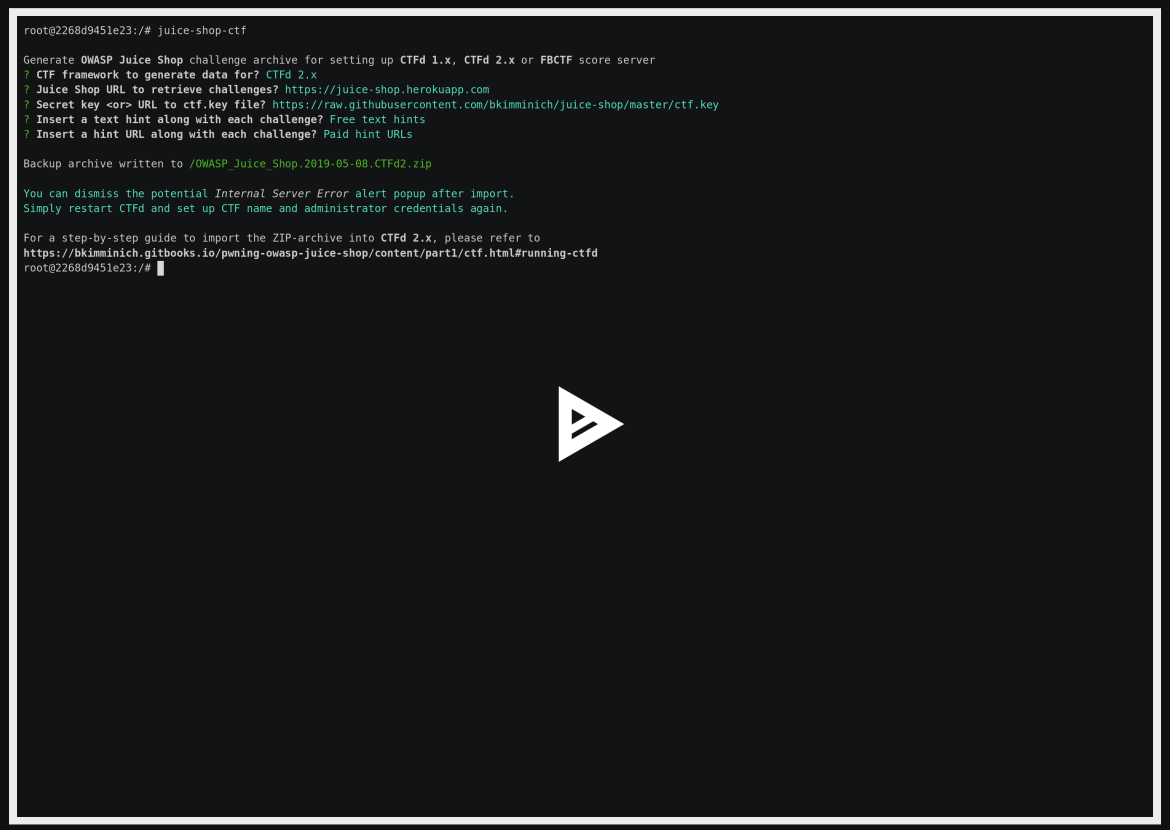
Utility project to help you host a hacking event on CTFd or FBCTF

Simple Installation

Locally via `npm i -g juice-shop-ctf-cli` or as Docker container

Setup Wizard

Run `juice-shop-ctf` on the command line and let a wizard create a data-backup archive to conveniently import into CTFd or FBCTF



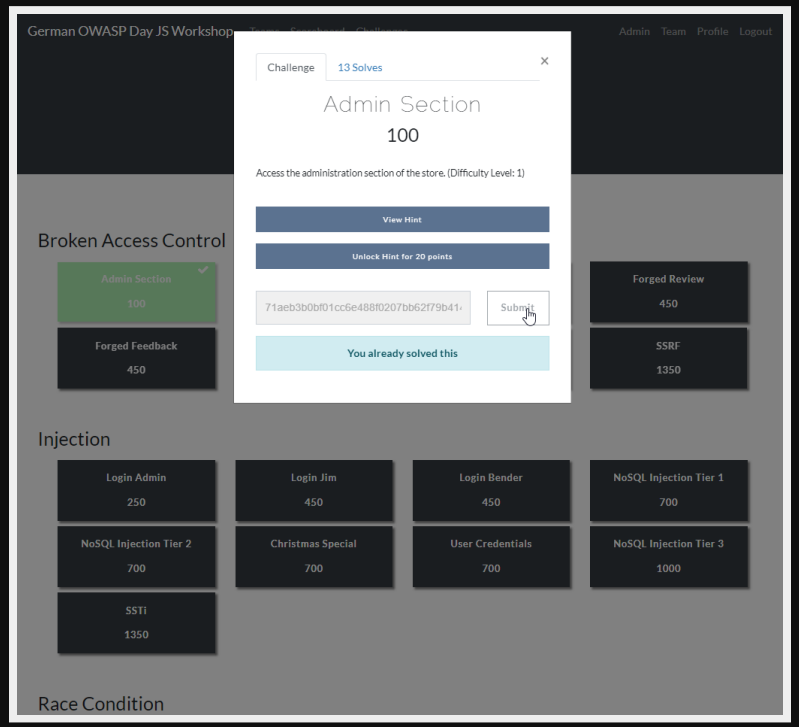
Configuration File Option

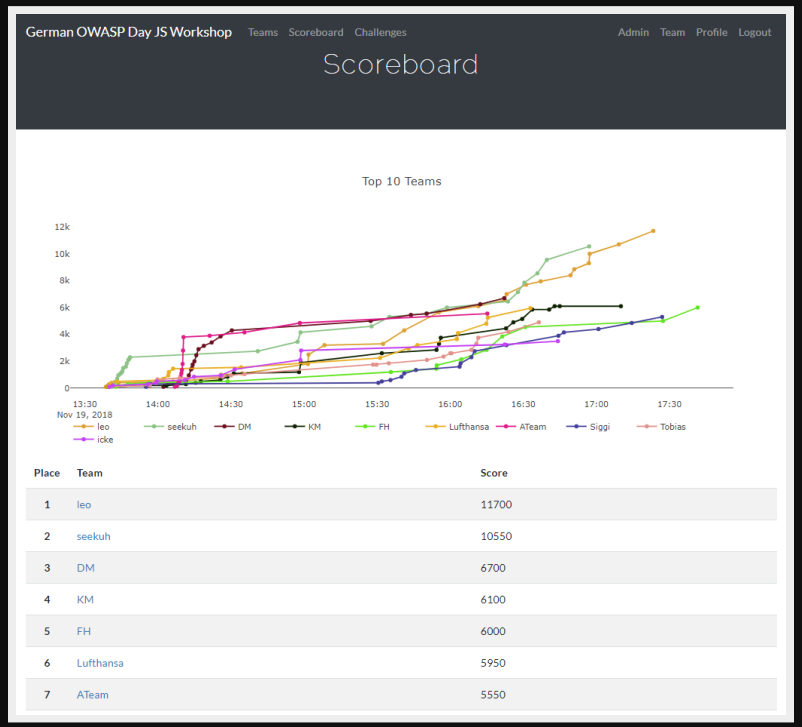
Run `juice-shop-ctf --config myconfig.yml` to use non-interactive mode passing in configuration via YAML file

```
ctfFramework: CTFd 2.x | CTFd 1.x | FBCTF
juiceShopUrl: https://juice-shop.herokuapp.com
ctfKey: https://raw.githubusercontent.com/bkimminich/juice-shop/master/ctf.key
countryMapping: https://raw.githubusercontent.com/bkimminich/juice-shop/master/config/f
insertHints: none | free | paid
insertHintUrls: none | free | paid
```

CTFd for OWASP Juice Shop

Your CTFd instance will be ready-to-hack in <5min





Place	Team	Score
1	leo	11700
2	seekuh	10550
3	DM	6700
4	KM	6100
5	FH	6000
6	Lufthansa	5950
7	ATeam	5550

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Multi User Platform 1.x

3rd party project to run separate Juice Shop instances for training or CTF participants on a central Kubernetes cluster

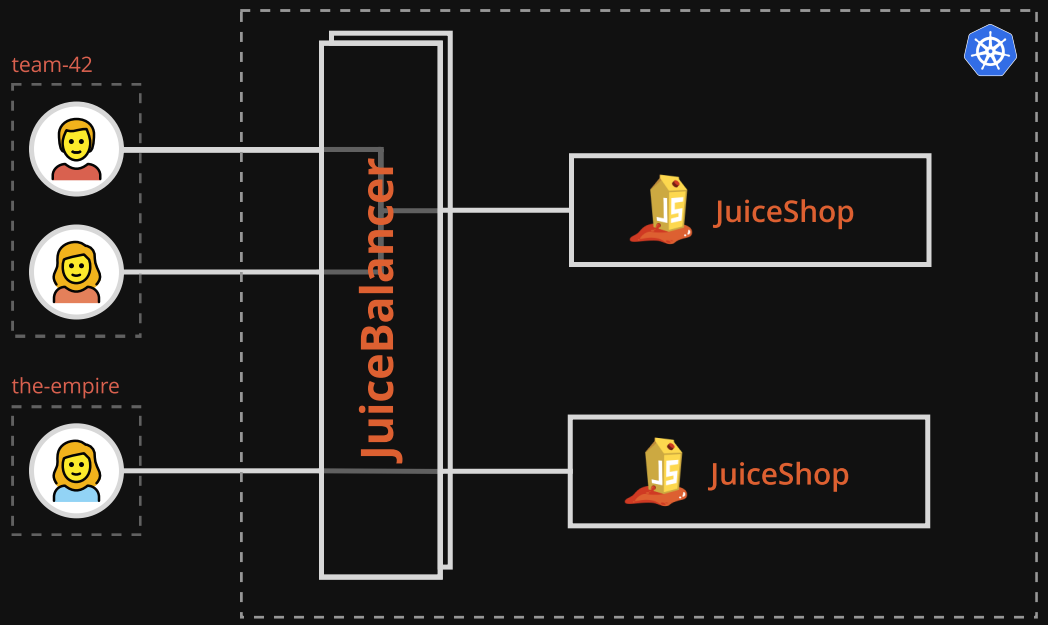
JuicyCTF

Multi User Juice Shop Plattform

OPEN CHAT

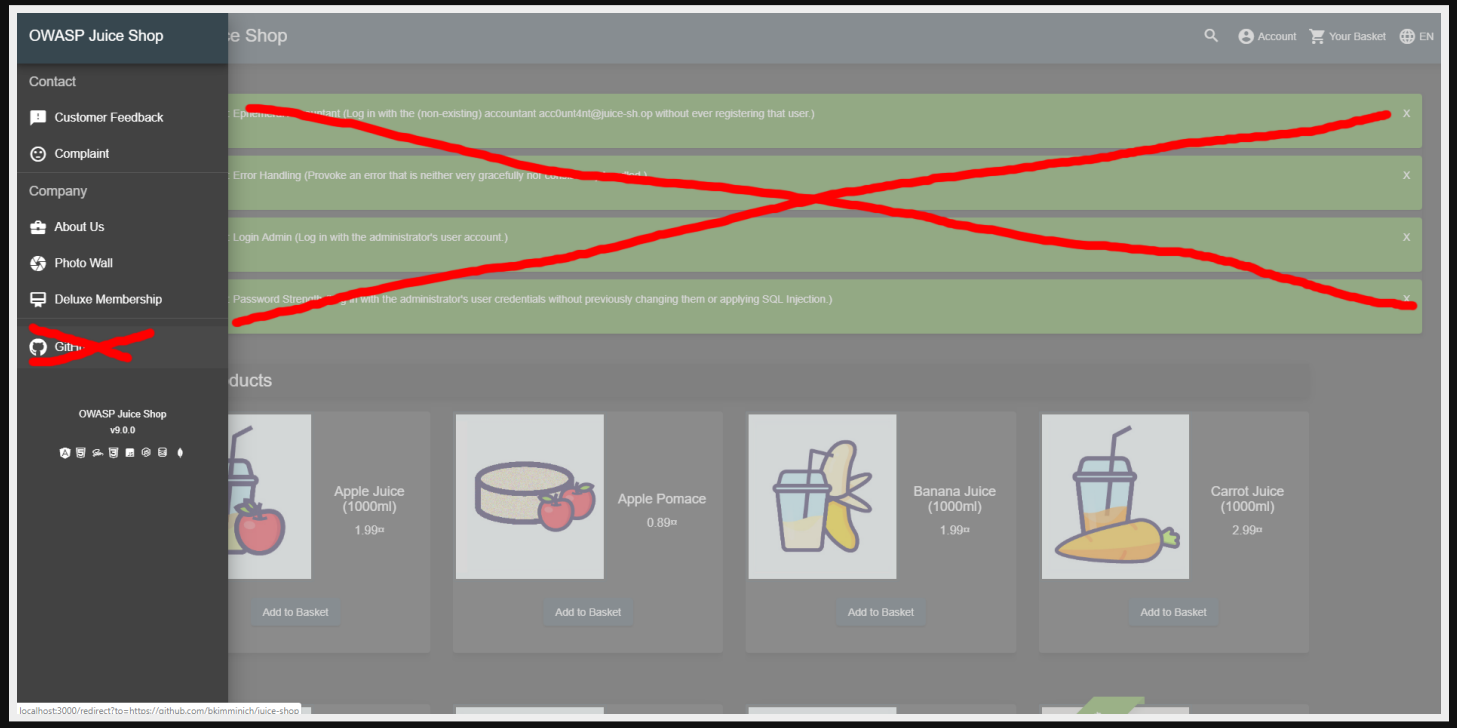
Custom JuiceBalancer

Restricts number of users to team members and protects against illicit cross-team instance access



Quiet Mode

Hide origin & notifications for 0% distraction in awareness trainings



Simply start application with `NODE_ENV=quiet` environment variable defined!

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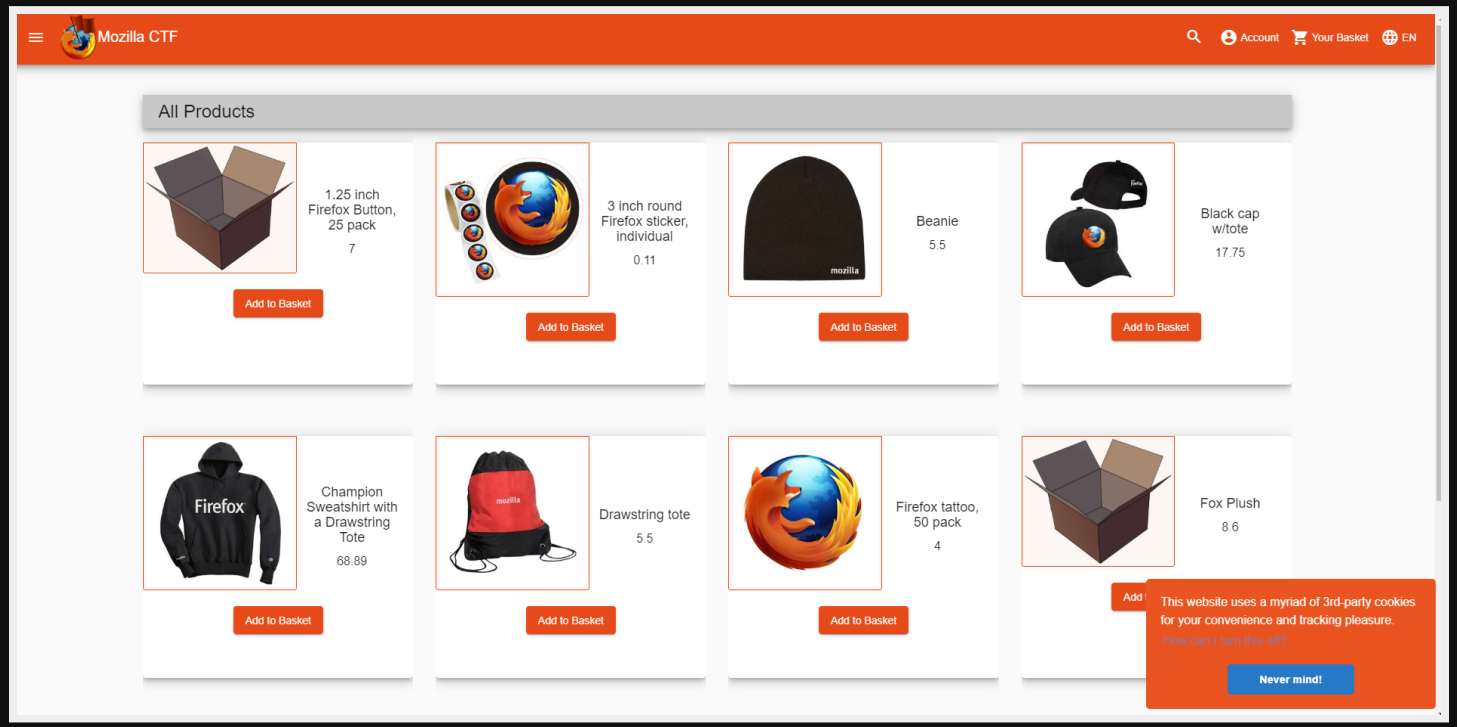
Re-branding

Fully customizable business context and look & feel



Configurative Customization

Customize the application via a simple YAML file

```yaml
application:
  domain: juice-sh.op
  name: 'OWASP Juice Shop'
  logo: JuiceShop_Logo.png
  favicon: favicon_v2.ico
  numberOfRandomFakeUsers: 0
  showChallengeSolvedNotifications: true
  showCtfFlagsInNotifications: false
  showChallengeHints: true
  showVersionNumber: true
  theme: bluegrey-lightgreen
  gitHubRibbon: true
  twitterUrl: 'https://twitter.com/owasp_juiceshop'
  facebookUrl: 'https://www.facebook.com/owasp.juiceshop'
  slackUrl: 'http://owaspslack.com'
  [...]
challenges:
  safetyOverride: false
```

Choose your own inventory

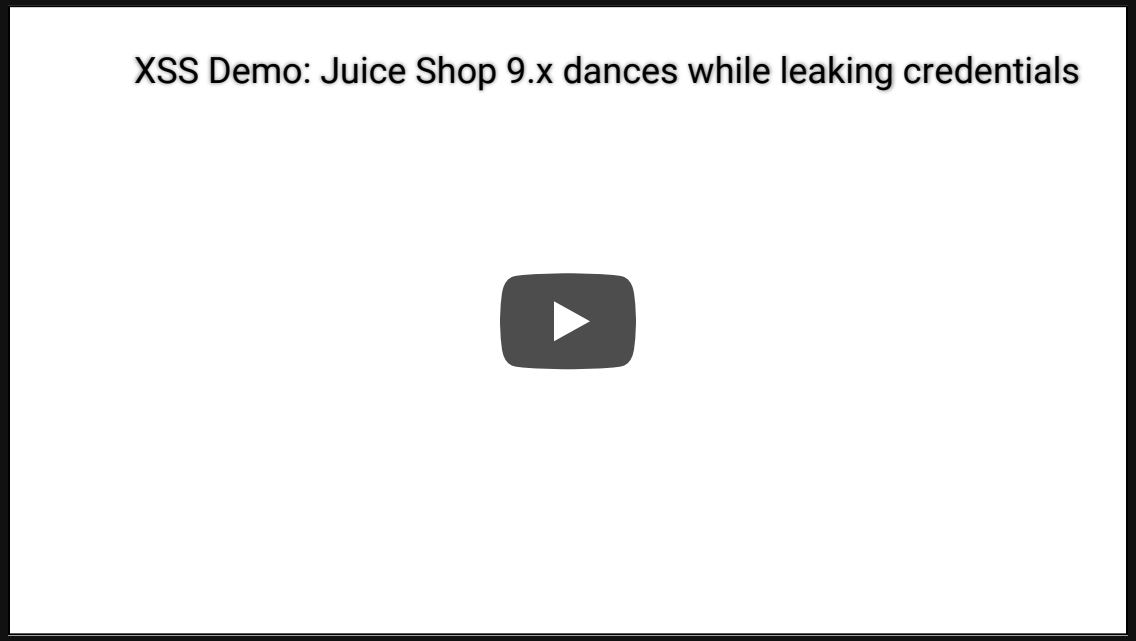
The YAML configuration allows you to override all products

```yaml
products:
  -
    name: 'Product Name'
    price: 100
    description: 'Product Description'
    image: '(https://somewhe.re/)image.png'
    useForProductTamperingChallenge: false
    useForChristmasChallenge: false
    fileForRetrieveBlueprintChallenge: ~
    reviews:
      - { text: 'Customer review', author: jim }
  -
    name: 'Product with Lorem Ipsum description, filler image and random price'
```

Your config is validated on server startup to prevent broken or unsolvable challenges!

XSS/CSP Awareness Demo

Utility project to show the dangers of XSS holes combined with bad Content Security Policy using *Harlem Shake* and a Keylogger



Sophisticated Phishing Mail

*Dear valued {firstname} {lastname}, **you won** our big lottery which you might not even remembering to have participating in! Click on the following totall inconspicious link to claim your prize now!*

*CLICK HER **NOW**! FREE STUFF! YOU WON!*

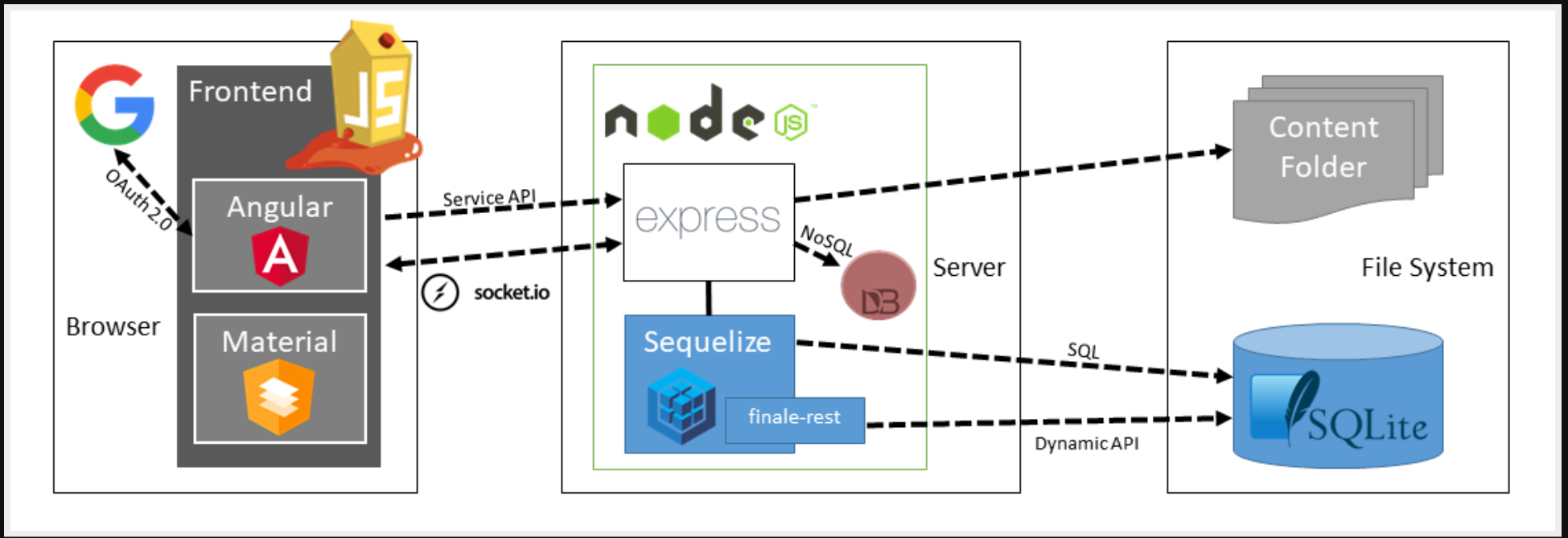
Sincereely yours, Bjorn Kimminich

(CEO/CIO/CISO/CISXP/CFM/SVP Marketing @ Juice Shop Inc.)

Do you dare to click the link above? *(Requires `shake-Logger` to run locally!)*

Modern Web-Architecture

JavaScript/TypeScript all the way from UI to REST API



Multi-language support

Crowd-sourced UI translations for 30+ languages

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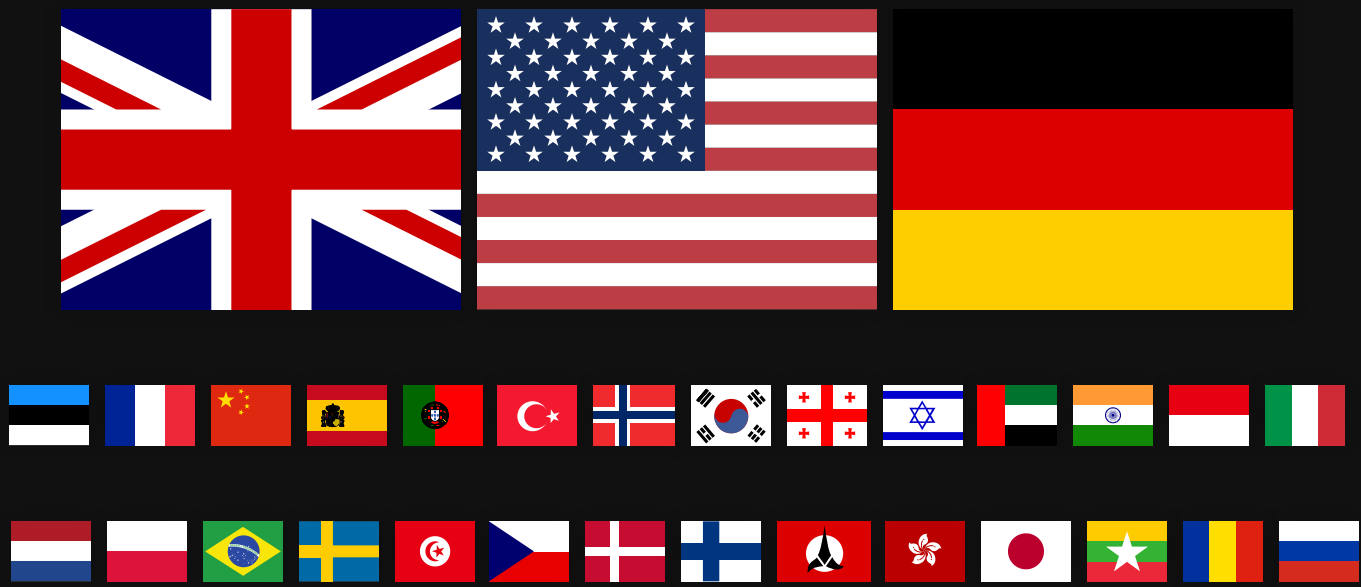
i18n of Products & Challenges

Crowd-sourced translations available from `v9.1.0` onward



Test Pyramid

Maximizing Test Automation & Code Coverage

Protractor
end to end testing for AngularJS

frisby.js

Jasmine

MOCHA

DevOps Pyramid

Automated Build, CI/CD & Code Analysis

FAQ

If FAQ & README don't help, ask in the chat or open an issue

- Can I use my Pentesting toys?
- Can I do a white box pentest?
- Can I use the internet?
- Installation does not work!
- What if I crash the server?
- I'm stuck with a challenge!
- I found another vulnerability!
- Why are some challenges disabled?
- Can I contribute to the project?
- Is there a contribution reward?

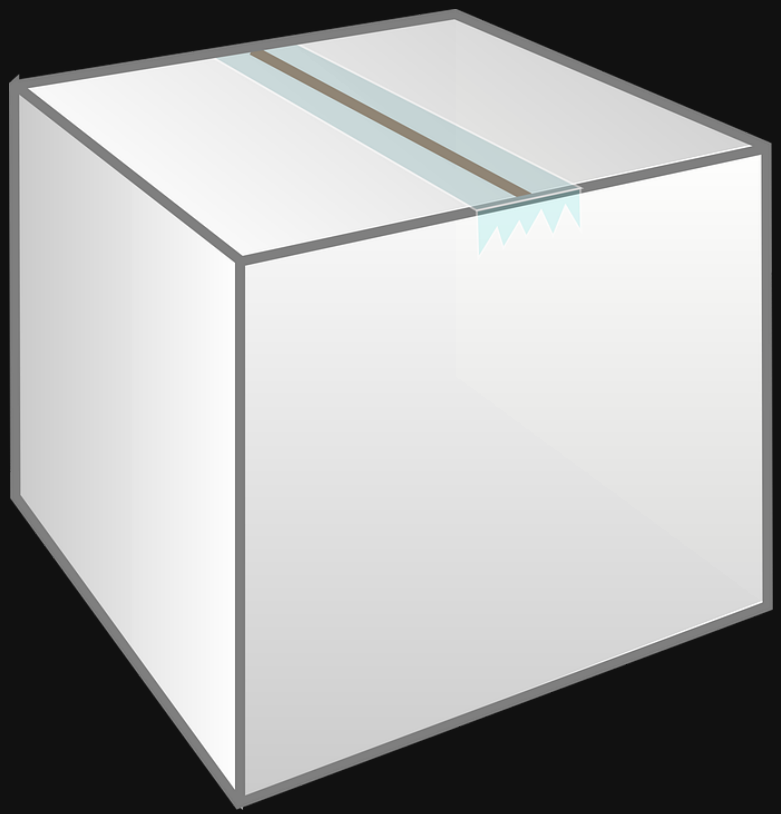
Can I use my Pentesting toys?

Yes, definitely! Use whatever pentesting tools you like the most!

Proxies like OWASP ZAP or BurpSuite Free Edition can definitely be useful. Automatic tools like Arachni or Nikto might find some vulnerabilities but will obviously not be able to get the Score Board to 100% for you.

Can I do a white box pentest?

No! The code from GitHub would spoiler all challenge solutions!



You can of course use everything that the application hands to you in the browser, so use its `DevTools`!

Can I use the internet?

Yes! Feel free to look for ideas, clues & hints **everywhere**!

Again: Except for the application's own GitHub repository & the logs of its Travis-CI build jobs!

Installation does not work!

Please carefully follow the instructions in the README

If Setup & Troubleshooting docs don't help, you can always ask the community or open an issue!

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What if I crash the server?

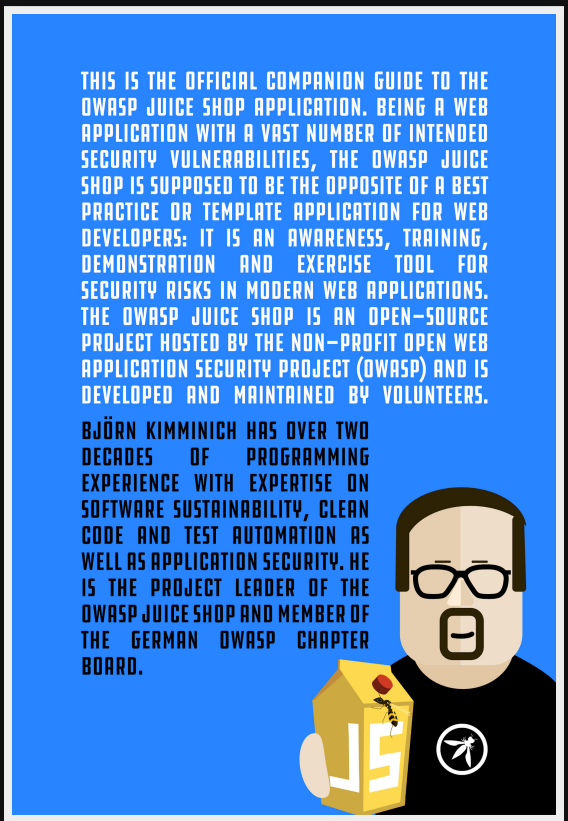
The application is cleanly reset on every startup

Your Score Board progress is saved automatically and will restore after server restart!

OPEN CHAT

I'm stuck with a challenge!

Find more hints in the **free** official companion guide on Leanpub



The eBook can also be read online on GitBook. You can always ask for hints in the community chat as well!

OPEN CHAT

I found another vulnerability!

Please report untracked vulnerabilities by opening an issue

Of course you can also contribute directly by opening a pull request. Just stick to the contribution guide!

Why are some challenges disabled?

Some challenges are *actually harmful* in containerized or cloud environments and are deliberately disabled there

This affects the XXE challenges (because they can lead to instance death by `segfault` error) and the SSTi, Deserialization and some NoSQLi challenges (as they could have unforeseeable side effects on the hosting platform).

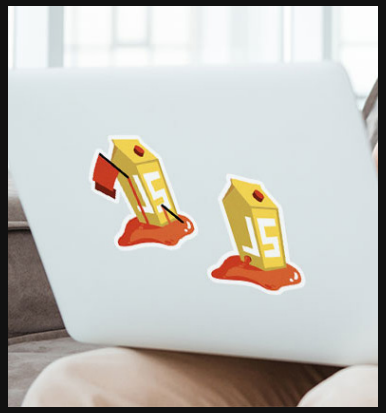
Can I contribute to the project?

Of course! Visit our backlog on GitHub & translations on Crowdin

Stories or issues labelled with ready and good first issue / help wanted are the best starting point!

Is there a contribution reward?

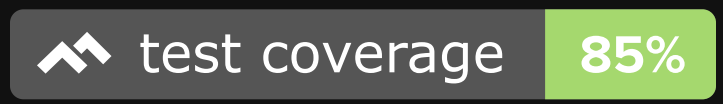
For your 1st merged pull request you'll get some stickers from us

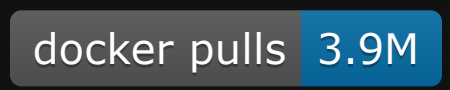


Serial contributors might even get t-shirts, mugs and other glorious merchandise for free!

Juice Shop Success Pyramid™

Some amazing facts & stats about the project





Project Roadmap

- Challenges in the pristine features added during GSoC 2019
- More Hacking Instructor scripts for the easier challenges
- Decouple Hacking Instructor better from frontend code
- Apply pressure to Brian to get the full Juice Shop jingle done

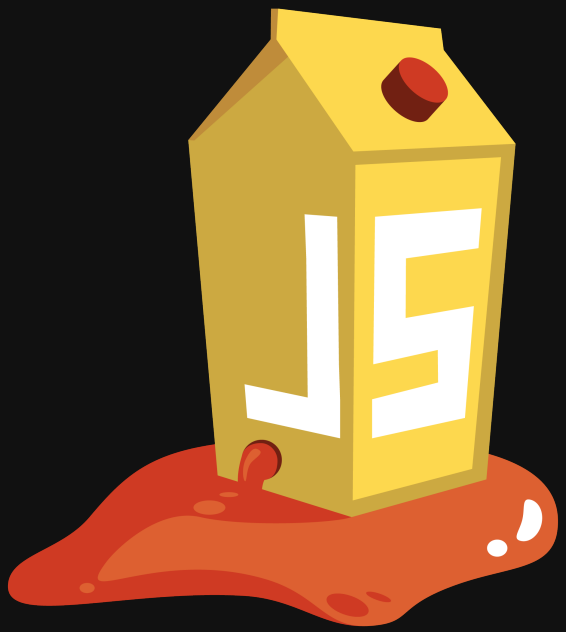
Timeline? **When it's done!**

Additional Information

Official Site	http://owasp-juice.shop
Sourcecode	https://github.com/bkimminich/juice-shop (MIT) https://github.com/bkimminich/juice-shop-ctf (MIT) https://github.com/bkimminich/pwning-juice-shop (CC-BY-NC-ND)

Bonus Material on Web Application Security

Web Application Security in a Nutshell (CC-BY-SA)	http://webappsec-nutshell.kimminich.de
IT Security Lecture (CC-BY-SA)	https://github.com/bkimminich/it-security-lecture



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