

12.4 Web UI - Tools and testing:

Homework

The task is to test the GUI of the [Flight Tickets Booking application](#)

Use the CRUD flight scenario to do the following:

- Investigate the DOM tree on the Elements tab, and compare it with the View HTML source. What could be done here, that is impossible to do with the View page source?
 - What errors do you see in the Console tab when running the scenarios? What are they about?
 - What sources are used to form the page? Scripts, images, other?
 - Are there any requests going from WebUI to the server?
 - Clear browser data (cash and cookies). What has been changed?
 - *Grab the traffic using a proxy server. Describe what did you and did you found any issues.
-
- **Investigate the DOM tree on the Elements tab, and compare it with the View HTML source. What could be done here, that is impossible to do with the View page source?**

On the Elements tab we can:

Visually observe styles, colors.

To overview schematically how are margins, borders, padding and content related.

It is impossible visual observe in HTML. Here there are just description in words.

Investigation:

1. CREATE / Add flight (user Administrator john)

Schedule a Flight

Aircraft	Departure Airport	Destination Airport
<input type="text" value="16 (821) (52)"/>	<input type="text" value="New Heathrow (LHR)"/>	<input type="text" value="New Heathrow (LHR)"/>
Departure Date	Departure Time	
<input type="text" value="dd/mm/yyyy"/>	<input type="text" value="--:--"/>	
Arrival Date	Arrival Time	
<input type="text" value="dd/mm/yyyy"/>	<input type="text" value="--:--"/>	
Flight Number	Gate	
<input type="text"/>	<input type="text"/>	
S' tatus	Flight Charge	
<input type="text" value="ON-SCHEDULE"/>	<input type="text" value="0.0"/>	
<input type="button" value="Save"/>		

After opening a form Add flight there are some prefilled information in fields: Aircraft, Departure Airport, Destination airport, Status. Field label Status has wrong name. S' tatus instead of Status.

In View Source and in Elements we can observe information about method: **POST**, label class, input class required value and its type:

```
<form action="/flight/new" method="post">
```

In this page there are nonconformances:

1. Prefilled values:

Here For Aircraft we can see the first value from the list of values (16 (821) (52)) inserted in form:

```
<label class="col-form-label" for="aircraft">Aircraft</label>
▼ <select class="form-control" id="aircraft" name="aircraft"> == $0
  <option value="821">16 (821) (52)</option> slot
```

The same for Departure Airport (New Heathrow (LHR)):

```
<label class="col-form-label" for="departureAirport">Departure
Airport</label>
▼ <select class="form-control" id="departureAirport" name="departureAirport">
  <option value="136"> New Heathrow (LHR)</option> slot
```

The same for Destination Airport (New Heathrow (LHR)):

```

<label class="col-form-label" for="destinationAirport">
Destination Airport</label>
▼<select class="form-control" id="destinationAirport" name="des
tinationAirport">
  <option value="136"> New Heathrow (LHR)</option>

```

The same for Status (ON SCHEDULE):

```

<label class="col-form-label" for="status">S' tatus</label>
▼<select class="form-control" id="status" name="status">
  <option value="ON-SCHEDULE">ON-SCHEDULE</option>

```

Those preselections not described as required value. Thus it is nonconformance.

- The element Status must be shown as **Status** as shown on the page Flights and on the DB.

```
<label class="col-form-label" for="status">S' tatus</label>
```

We can see it in the Elements and in the HTML.

I added a new flight on the UI with flight number H112.

Schedule a Flight

Aircraft	Departure Airport	Destination Airport
A-319 (28) (99)	Helsinki-Vantaa Airport (H)	Liverpool John Lennon Air
Departure Date	Departure Time	
27/12/2023	20:20	
Arrival Date	Arrival Time	
27/12/2023	22:25	
Flight Number	Gate	
H112	D	
S' tatus	Flight Charge	
BOARDING	215	

Save

The result observed in menu Search Flight:

Created new flight on DB:

```
select * from flight f
where flight_number = 'H112'
```

flight_id	arrival_date	arrival_time	departure_date	departure_time	flight_charge	flight_number
5752	2023-12-27	22:25	2023-12-27	20:20	215	H112

2. READ (user Administrator john)

We can find created flight on the UI Flights (page number 61):

Flights List

Add Flight

Flight ID	Number	From	To	Departure	Arrival	Gate	Status	Flight Charge	Aircraft	Available Seats
5752	H112	Helsinki-Vantaa Airport	Liverpool John Lennon Airport	2023-12-27 20:20	2023-12-27 22:25	D	BOARDING	215.0	A-319	99/99

Or using Search form.

Result

Flight ID	Number	From	To	Departure time	Arrival time	Flight Charge	Aircraft	Available Seats
5752	H112	Helsinki-Vantaa Airport	Liverpool John Lennon Airport	2023-12-27 20:20	2023-12-27 22:25	215.0	A-319	99/99

In both places we see that all fields are corrected.

For user Agent mike:

In page Book Flight:

Book a Flight

From	To	Departure Time
<input type="text" value="Nick Overtime"/>	<input type="text" value="Nick Overtime"/>	<input type="text" value="dd/mm/yyyy"/>
		<input type="button" value="Search"/>

Result

ID	Flight Number	From	To	Departure	Arrival	Flight Charge	Aircraft	Available Seats	
5752	H112	Helsinki-Vantaa Airport	Liverpool John Lennon Airport	2023-12-27 20:20	2023-12-27 22:25	215.0	A-319	99/99	<input type="button" value="Book"/>

Here all fields shown correct on the UI and In the Elements.

In Elements we can observe information about method: **POST**, label class, select class, id, name:

```
<form action="/flight/search" method="post">
<label class="col-form-label"
for="departureAirport">From</label>
<select class="form-control" id="departureAirport"
name="departureAirport">
```

And result of request (also displayed on the UI).

In this case on Developer Tools in **Sources** and **Network** there is search request.

There is no option to view result of the request (search flight) in the **View page source**:



Confirm Form Resubmission

This webpage requires data that you entered earlier in order to be properly displayed. You can send this data again, but by doing so you will repeat any action this page previously performed.

Press the reload button to resubmit the data needed to load the page.

ERR_CACHE_MISS

A browser can't obtain the necessary cache to load a web page or other site data.

3. UPDATE

There is no straight option to update a flight on the UI.
So, here we can add a passenger to a flight:

Confirmation Page

Aero Travel

Flight Id: 5752
Passenger Id: 3769

Customer Info

ID	First Name	Last Name	Phone Number	Passport Number	Email
3769	Nik	Fex	000888999	12345661	nik@mail.com

Flight Info

Flight Number	From	To	Departure	Arrival	Flight Charge	Aircraft
H112	Helsinki-Vantaa Airport	Liverpool John Lennon Airport	2023-12-27 20:20	2023-12-27 22:25	215.0	A-319

There is confirmation page results in the Elements.

There is no option to view result of the request (booking flight) in the **View page source**:

view-source: [REDACTED] /flight/book/new



Confirm Form Resubmission

This webpage requires data that you entered earlier in order to be properly displayed. You can send this data again, but by doing so you will repeat any action this page previously performed.

Press the reload button to resubmit the data needed to load the page.

ERR_CACHE_MISS

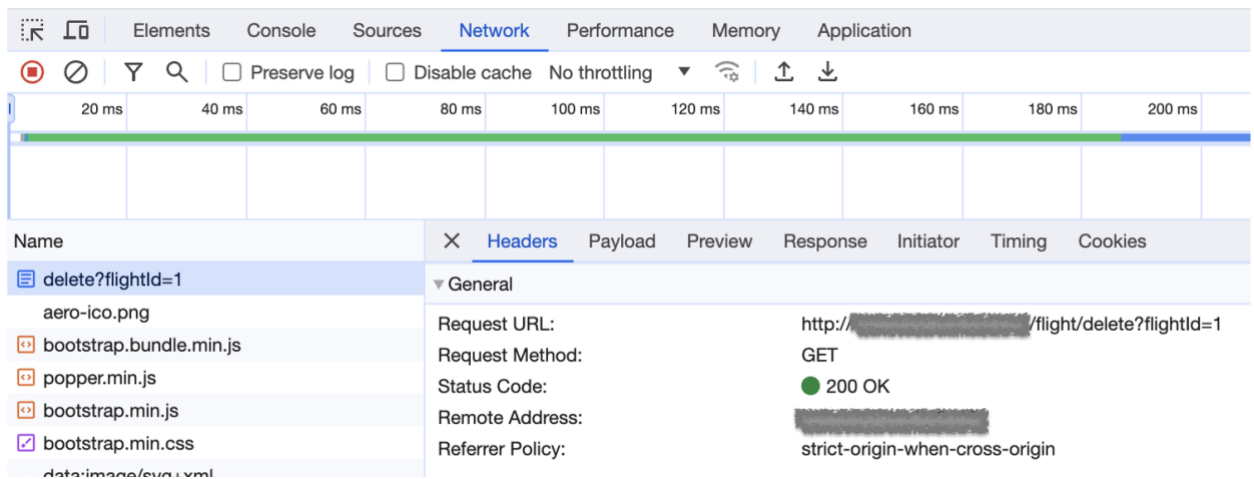
4. DELETE

I tried to delete airport_id = 1

Get the message on the bottom of the page and in the Elements:

```
SOMething went wrong upon deleting flight 8 could not execute
statement; SQL [n/a]; constraint [null]; nested exception is
org.hibernate.exception.ConstraintViolationException: could not
execute statement could not execute statement; SQL [n/a];
constraint [null]; nested exception is
org.hibernate.exception.ConstraintViolationException: could not
execute statement
org.springframework.dao.DataIntegrityViolationException: could
not execute statement; SQL [n/a]; constraint [null]; nested
exception is
org.hibernate.exception.ConstraintViolationException: could not
execute statement
```

Network – successful request:



This is, from the one side, is correct result (according to DB and the UI there are passengers on this flight), we get the message about error, but, I think, the message should be more user friendly.

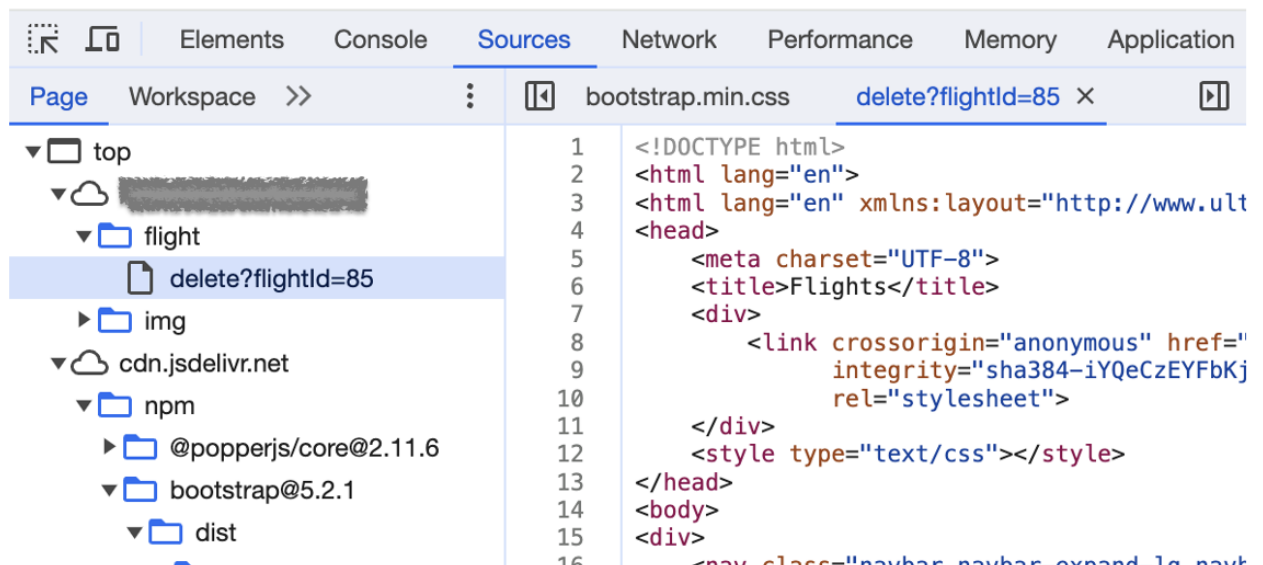
But from the other side, there are no any messages on sources and, console. And in network not correct message.

For flight_id = 85 there are no passengers.

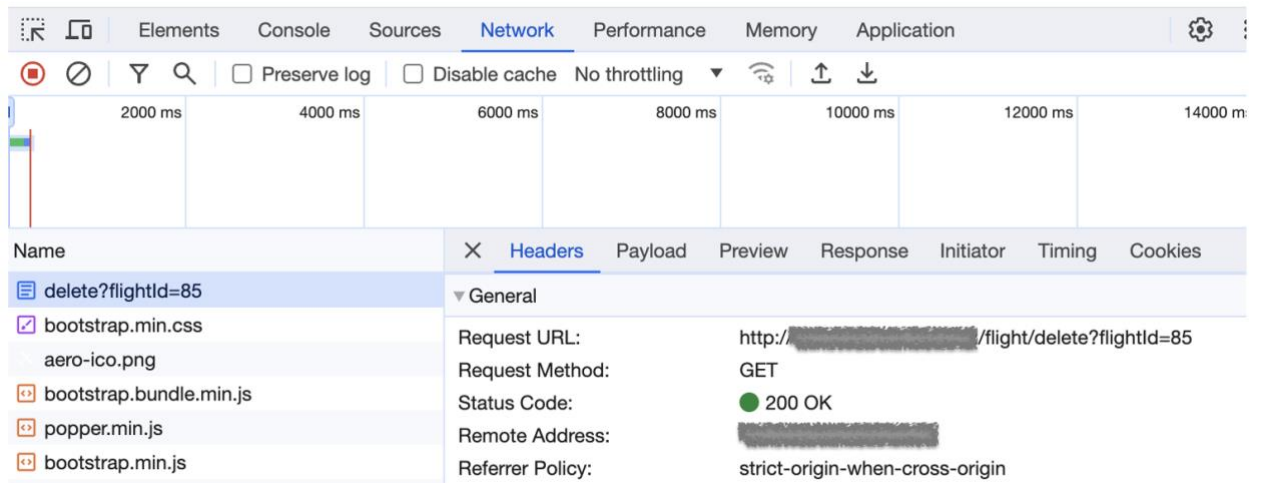
Cancel ->

In Elements we see refreshed Flights list page. The same in HTML.

On the Sources we can see event:



On Network can see the message about deleted flight:



The airport deleted from the UI, and from the DB.

- **What sources are used to form the page? Scripts, images, other?**

To form the **Flight list** page, **Add flight** page or **Cancel** used:

Image (png): aero-ico.png

Scripts:

<https://cdn.jsdelivr.net/npm/bootstrap@5.2.1/dist/js/bootstrap.bundle.min.js>

<https://cdn.jsdelivr.net/npm/@popperjs/core@2.11.6/dist/umd/popper.min.js>

<https://cdn.jsdelivr.net/npm/bootstrap@5.2.1/dist/js/bootstrap.min.js>

stylesheet: <https://cdn.jsdelivr.net/npm/bootstrap@5.2.1/dist/css/bootstrap.min.css>

svg + xml: data:image/svg+xml,%3csvg xmlns='http://www.w3.org/2000/svg' viewBox='0 0 30 30'%3e%3cpath stroke='rgba%28255, 255, 255, 0.55%29' stroke-linecap='round' stroke-miterlimit='10' stroke-width='2' d='M4 7h22M4 15h22M4 23h22'/%3e%3c/svg%3e

- **Are there any requests going from WebUI to the server?**

API requests:

GET /login – open form login

GET /flight/new – open form for adding a new flight.

GET / flights – open 1st page of Flights list.

GET /flights{pageNo} - open specified page of Flights list.

GET /flight/delete/{flightId} – delete flight

POST /login – entering in a system.

POST /flight/new- adding a new flight to DB.

POST /flight/book/new – adding a passenger on a flight and in the DB (in case of new passenger).

- **Clear browser data (cash and cookies). What has been changed?**

Data before clearing:

The screenshot shows the Chrome DevTools Network tab with the 'Cookies' sub-tab selected. The left sidebar lists resources including 'bootstrap.min.css' and 'aero-ico.png'. The main panel displays 'Request Cookies' for a selected resource. A table shows the 'JSESSIONID' cookie with its value and other attributes.

Name	Value	D.	P...	Exp...	Size	Http...	Se
JSESSIONID	BC872D004D408F3B3C9769B49A...	1...	/	Ses...	42	✓	

After clearing browser data the user logged out. Login form appeared.

After starting entering login changed cookies value:

The screenshot shows the Chrome DevTools Network tab with the 'Cookies' sub-tab selected. The left sidebar lists resources including 'bootstrap.min.css'. The main panel displays 'Request Cookies' for a selected resource. A table shows the 'JSESSIONID' cookie with its updated value and other attributes.

Name	Value	D.	P...	Exp...	Size	Http...	Se...	Sa...	Pa...
JSESSIONID	1D355148C762CF308E34D2D0AD...	1...	/	Ses...	42	✓			

Successfully opened form of login (logged in user **john**).

After entering in a system opened the last page from where I've initiated a clearing site data (new booking, user **mike**).



[403 FORBIDDEN]

Date	Wed Dec 27 19:41:47 UTC 2023
Path	/flight/book/new
Error	Forbidden
Status	403
Message	Forbidden
Exception	
Trace	

GET http://***.***.***.***.***:/flight/book/new 403 (Forbidden).

This is the right message – john has no rights to book a flight. But I’ve expected to see a start page after logging in with another user:

Here we can see here that the initiator – login.

Name	Status	Type	Initiator	Size	Time	Waterfall
login	302	docum...	Other	438 B	182 ms	
new	403	document	login	2.4 kB	67 ms	
bootstrap.min.css	200	stylesheet	new:9	(memor...	0 ms	

In login we can see 2 cookies values:

GET	http://***.*.*.*.*.*.*.*.*./flights?pageNo=63	***.*.*.*.*.*.*.*.	08:48:52.060	open 63 page of Flights list
GET	http://***.*.*.*.*.*.*.*.*./flights?pageNo=64	***.*.*.*.*.*.*.*.	08:48:56.552	open 64 page of Flights list
GET	http://***.*.*.*.*.*.*.*.*./flights?pageNo=66	***.*.*.*.*.*.*.*.	08:49:01.599	open 66 page of Flights list
GET	http://***.*.*.*.*.*.*.*.*./flights?pageNo=65	***.*.*.*.*.*.*.*.	08:49:04.835	open 65 page of Flights list
GET	http://***.*.*.*.*.*.*.*.*./flights?pageNo=67	***.*.*.*.*.*.*.*.	08:49:10.311	open 67 page of Flights list
GET	http://***.*.*.*.*.*.*.*.*./flights?pageNo=66	***.*.*.*.*.*.*.*.	08:49:13.437	open 66 page of Flights list
GET	http://***.*.*.*.*.*.*.*.*./flights?pageNo=65	***.*.*.*.*.*.*.*.	08:49:18.236	open 65 page of Flights list
GET	http://***.*.*.*.*.*.*.*.*./flights?pageNo=64	***.*.*.*.*.*.*.*.	08:49:22.210	open 64 page of Flights list
GET	http://***.*.*.*.*.*.*.*.*./flights?pageNo=63	***.*.*.*.*.*.*.*.	08:49:26.192	open 63 page of Flights list
GET	http://***.*.*.*.*.*.*.*.*./flights?pageNo=62	***.*.*.*.*.*.*.*.	08:49:30.326	open 62 page of Flights list
GET	http://***.*.*.*.*.*.*.*.*./flights?pageNo=61	***.*.*.*.*.*.*.*.	08:49:45.037	open 61 page of Flights list
GET	http://***.*.*.*.*.*.*.*.*./passengers?flightId=5754	***.*.*.*.*.*.*.*.	08:49:49.907	open list of passengers on flight_Id=5754
GET	http://***.*.*.*.*.*.*.*.*./flights?pageNo=61	***.*.*.*.*.*.*.*.	08:49:57.879	open 61 page of Flights list
GET	http://***.*.*.*.*.*.*.*.*./logout	***.*.*.*.*.*.*.*.	08:50:06.548	logout from the system
GET	http://***.*.*.*.*.*.*.*.*./login?logout	***.*.*.*.*.*.*.*.	08:50:06.630	open form login / logout
POST	http://***.*.*.*.*.*.*.*.*./login	***.*.*.*.*.*.*.*.	08:50:12.533	entering in a system
GET	http://***.*.*.*.*.*.*.*.*./	***.*.*.*.*.*.*.*.	08:50:12.673	open main page
GET	http://***.*.*.*.*.*.*.*.*./flight/book	***.*.*.*.*.*.*.*.	08:50:15.424	open a page for booking a flight
POST	http://***.*.*.*.*.*.*.*.*./flight/book	***.*.*.*.*.*.*.*.	08:50:25.316	adding a new passenger to DB or updating flight info
GET	http://***.*.*.*.*.*.*.*.*./flight/book/new?flightId=5754	***.*.*.*.*.*.*.*.	08:50:27.702	open confirmation of booking for flight_Id=5754
POST	http://***.*.*.*.*.*.*.*.*./flight/book/new	***.*.*.*.*.*.*.*.	08:51:01.097	adding a new passenger to DB or updating flight info
GET	http://***.*.*.*.*.*.*.*.*./logout	***.*.*.*.*.*.*.*.	08:51:28.882	logout from the system
GET	http://***.*.*.*.*.*.*.*.*./login?logout	***.*.*.*.*.*.*.*.	08:51:28.968	open form login / logout
POST	http://***.*.*.*.*.*.*.*.*./login	***.*.*.*.*.*.*.*.	08:51:35.673	entering in a system
GET	http://***.*.*.*.*.*.*.*.*./	***.*.*.*.*.*.*.*.	08:51:35.803	open main page
GET	http://***.*.*.*.*.*.*.*.*./flight/search	***.*.*.*.*.*.*.*.	08:51:41.575	Open a page flight search
POST	http://***.*.*.*.*.*.*.*.*./flight/search	***.*.*.*.*.*.*.*.	08:51:52.559	Received information about chosen flight. <i>It is not obviously, I just remember</i>
GET	http://***.*.*.*.*.*.*.*.*./flights	***.*.*.*.*.*.*.*.	08:51:57.791	open 1 st page of Flights list

GET	http://***.***.***.*/flight/delete?flightId=1	***.***.***.***.	08:52:01.682	delete flight, flight_id=1 <i>(unsuccessful) here I get some info about incorrect deleting</i>
GET	http://***.***.***.*/flights?pageNo=22	***.***.***.***.	08:52:13.966	open 22 page of Flights list
GET	http://***.***.***.*/flights?pageNo=27	***.***.***.***.	08:52:17.197	open 27 page of Flights list
GET	http://***.***.***.*/flight/delete?flightId=161	***.***.***.***.	08:52:24.638	delete flight, flight_id=161 <i>(successful) here I expected to get some info about successful deleting</i>
GET	http://***.***.***.*/flights	***.***.***.***.	08:52:33.886	open 1 st page of Flights list