Web Engineering

Summer Semester 2023

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TU WIEN Informatics

Web Engineering

Mandatory (Pflichtmodul), 4. Semester:
033 526 **Wirtschaftsinformatik**

Elective (Wahlmodul):
033 532 **Medieninformatik und Visual Computing**
033 534 **Software & Information Engineering**

~~Module „Development of Web Applications“~~
~~(Entwicklung von Web-Anwendungen)~~

Courses

2.0h VU 188.951 Web Engineering

2.0h VU 184.705 Semi-structured Data

~~To successfully complete the module, you have to successfully complete both courses~~

Both Web Engineering and Semi-structured data will be their own modules going forward (with 6 ECTS each).

This semester will be the last iteration with 3 ECTS!

Have a look at the “Übergangsbestimmungen” to see how this may affect you

Course Structure - Theoretical Part

Flipped Classroom

Students watch lectures online and do pre-reading before attending live lectures.

Live lectures will go over “katas” (small examples to deepen understanding)
and answer student questions to theoretical aspects

17.03. HTML/CSS

21.04. JavaScript

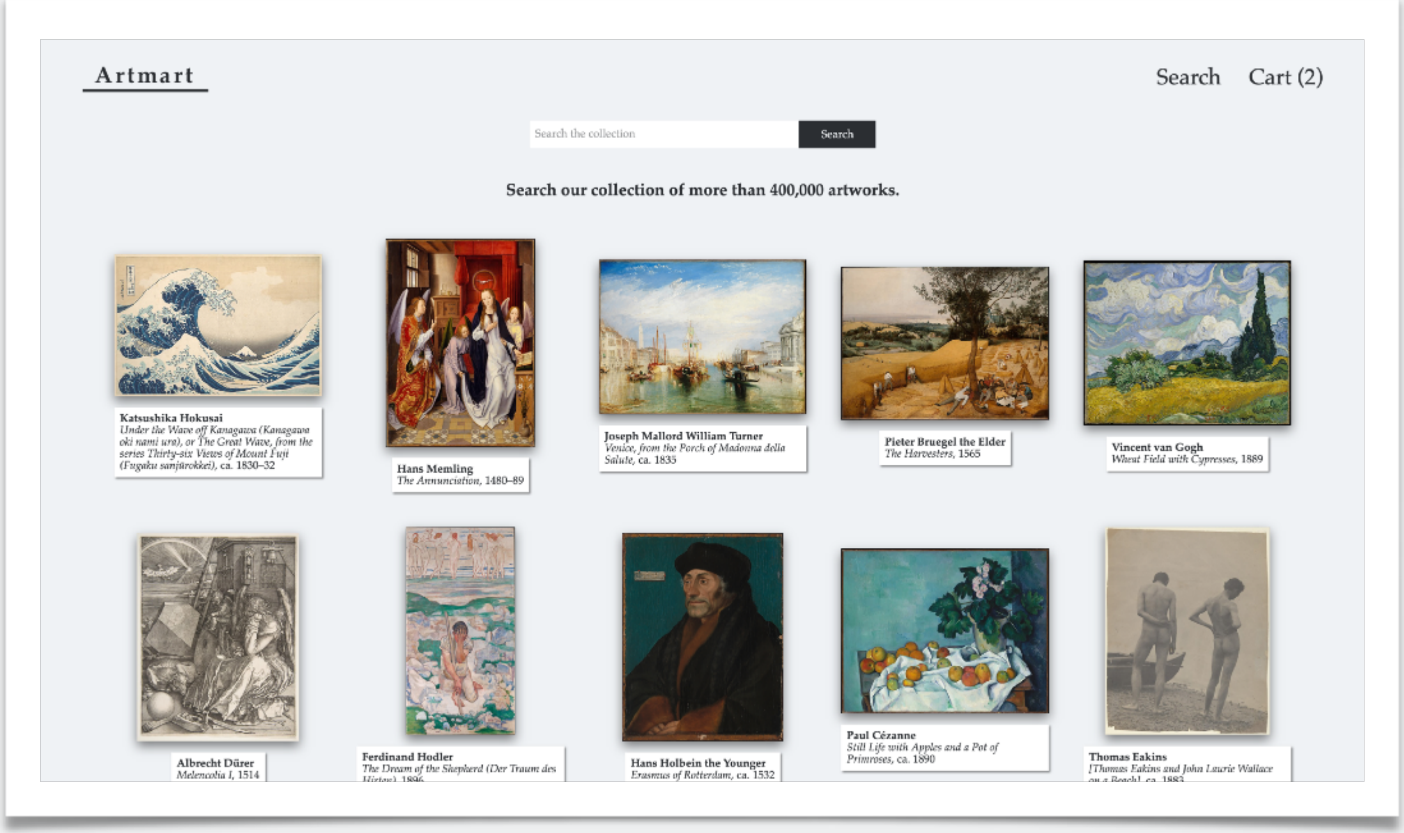
12.05. Backend Abstractions (Node.js)

02.06. Frontend Abstractions (Vue.js)

16.06. Guest Lecture (TBD)

Project “Artmart”

You are tasked with building the website for Artmart, a web shop for fine art prints.



Search our collection of more than 400,000 artworks.

Katsushika Hokusai
Under the Wave off Kanagawa (Kanagawa oki nami ura), or The Great Wave, from the series Thirty-six Views of Mount Fuji (Fugaku sanjūrokkei), ca. 1830–32

Hans Memling
The Annunciation, 1480–89

Joseph Mallord William Turner
Venice, from the Porch of Madonna della Salute, ca. 1835

Pieter Bruegel the Elder
The Harvesters, 1565

Vincent van Gogh
Wheat Field with Cypresses, 1889

Albrecht Dürer
Melencolia I, 1514

Ferdinand Hodler
The Dream of the Shepherd (Der Traum des Hirten), 1896

Hans Holbein the Younger
Erasmus of Rotterdam, ca. 1532

Paul Cézanne
Still Life with Apples and a Pot of Primroses, ca. 1890

Thomas Eakins
[Thomas Eakins and John Laurie Wallace on a Beach], ca. 1883

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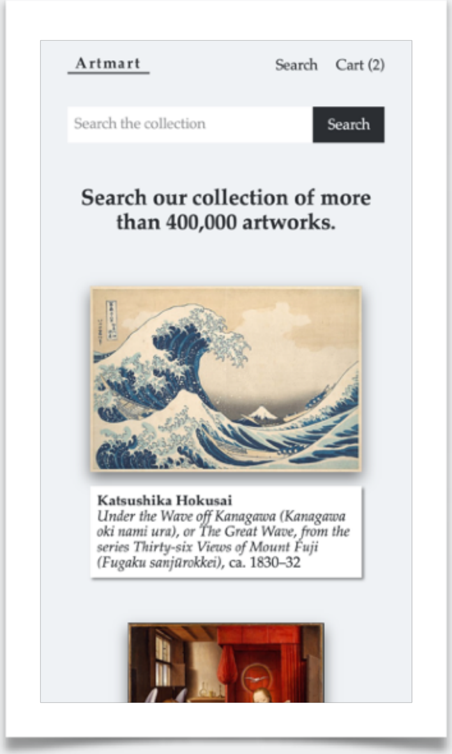

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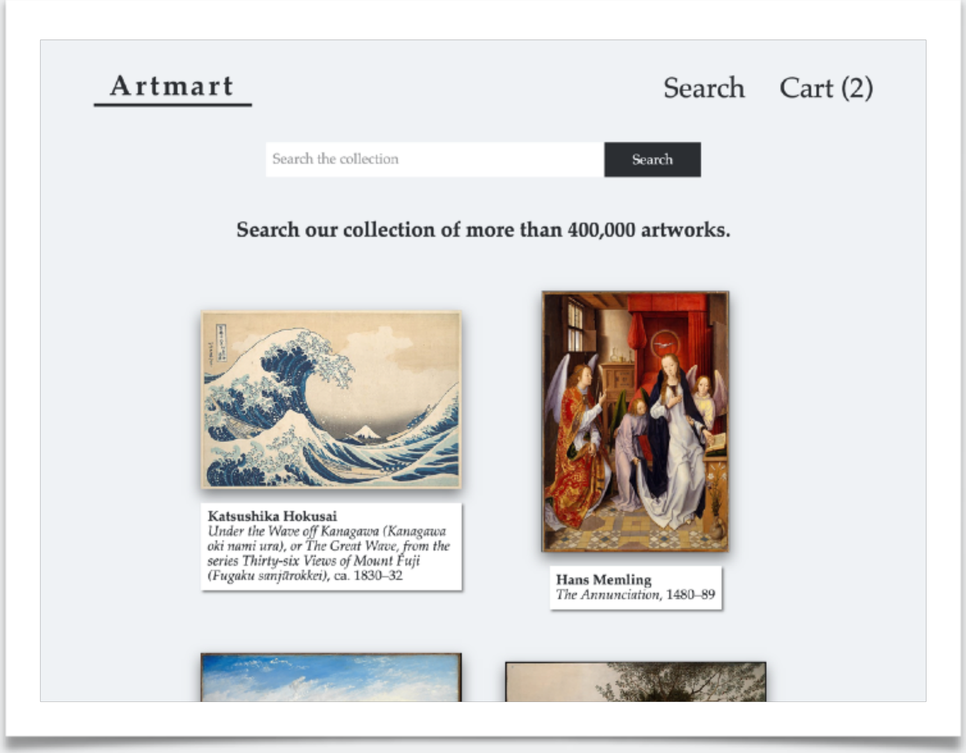
Under the Wave off Kanagawa (Kanagawa oki nami ura), or The Great Wave, from the series Thirty-six Views of Mount Fuji (Fugaku sanjūrokkei), ca. 1830–32



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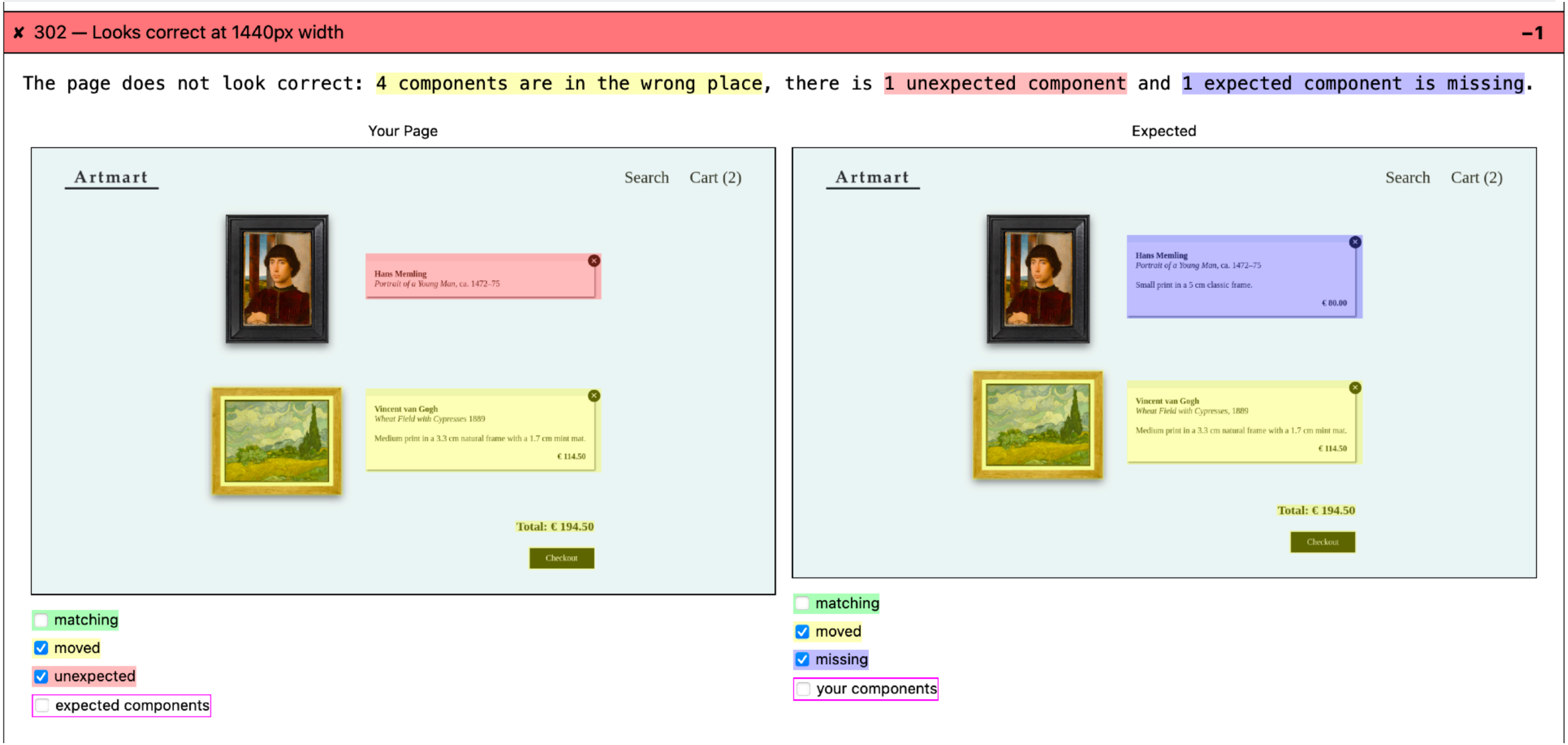
Hans Memling
The Annunciation, 1480–89

Assignment 1:

Static HTML/CSS

- HTML5
- WAI
- CSS3
- Responsive Design

Automated Grading A1 — Component Differencing



✘ 302 — Looks correct at 1440px width −1

```
The page does not look correct: 4 components are in the wrong place, there is 1 unexpected component and 1 expected component is missing.
```

Your Page

Artmart
Search
Cart (2)
Hans Memling
Portrait of a Young Man, ca. 1472–75
Vincent van Gogh
Wheat Field with Cypresses 1889
Medium print in a 3.3 cm natural frame with a 1.7 cm mint mat.
€ 114.50
Total: € 194.50
Checkout

□ matching
☑ moved
☑ unexpected
□ expected components

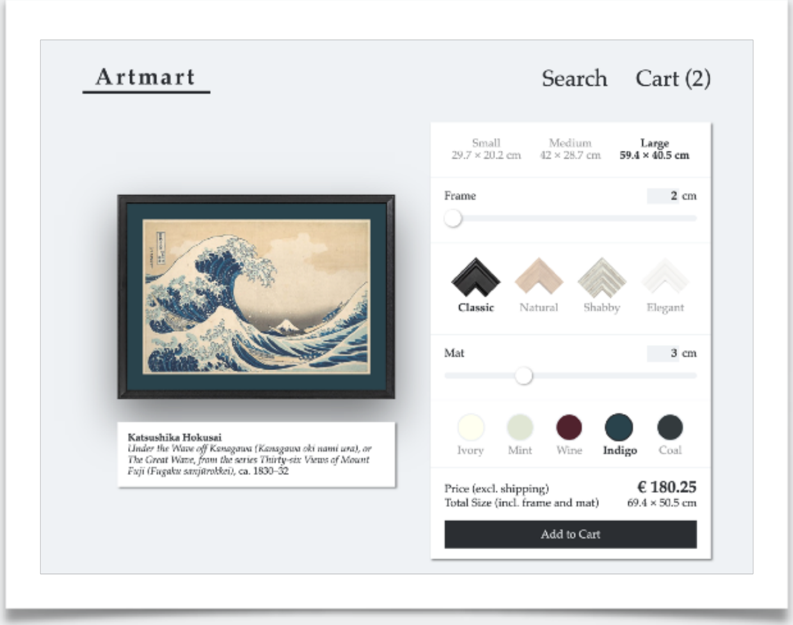
Expected

Artmart
Search
Cart (2)
Hans Memling
Portrait of a Young Man, ca. 1472–75
Small print in a 5 cm classic frame.
€ 80.00
Vincent van Gogh
Wheat Field with Cypresses, 1889
Medium print in a 3.3 cm natural frame with a 1.7 cm mint mat.
€ 114.50
Total: € 194.50
Checkout

□ matching
☑ moved
☑ missing
□ your components

Project “Artmart”

You are tasked with building the website for Artmart, a web shop for fine art prints.



Small 29.7 × 20.2 cm | Medium 42 × 28.7 cm | **Large 59.4 × 40.5 cm**

Frame 2 cm

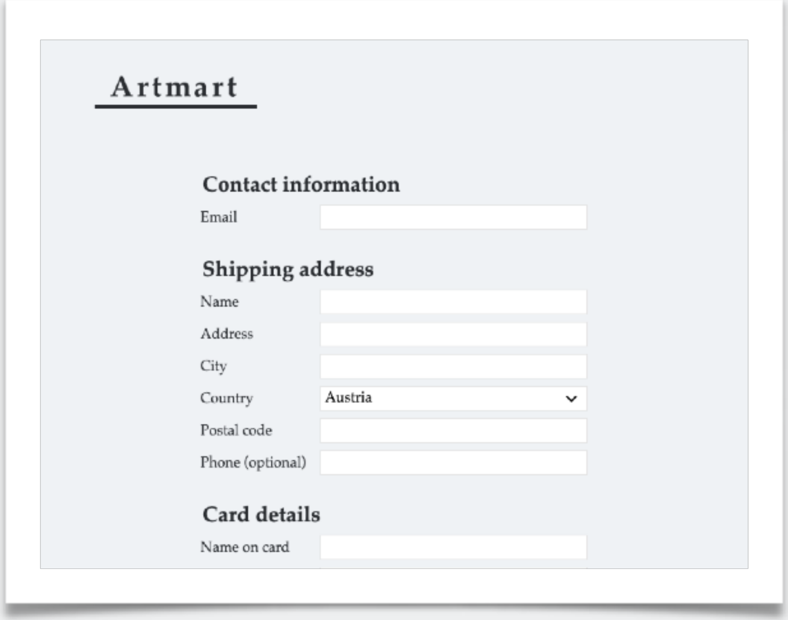
Classic Natural Shabby Elegant

Mat 3 cm

Ivory Mint Wine **Indigo** Coal

Price (excl. shipping) **€ 180.25**
Total Size (incl. frame and mat) 69.4 × 50.5 cm

Katsushika Hokusai
Under the Wave off Kanagawa (Kanagawa oki nami ura), or The Great Wave, from the series Thirty-six Views of Mount Fuji (Fugaku sanjūrokkei), ca. 1830–32



Contact information

Email

Shipping address

Name
Address
City
Country Austria
Postal code
Phone (optional)

Card details

Name on card

Assignment 2:
Web Interactivity

- JavaScript/DOM
- Service Interaction (Metropolitan Museum)

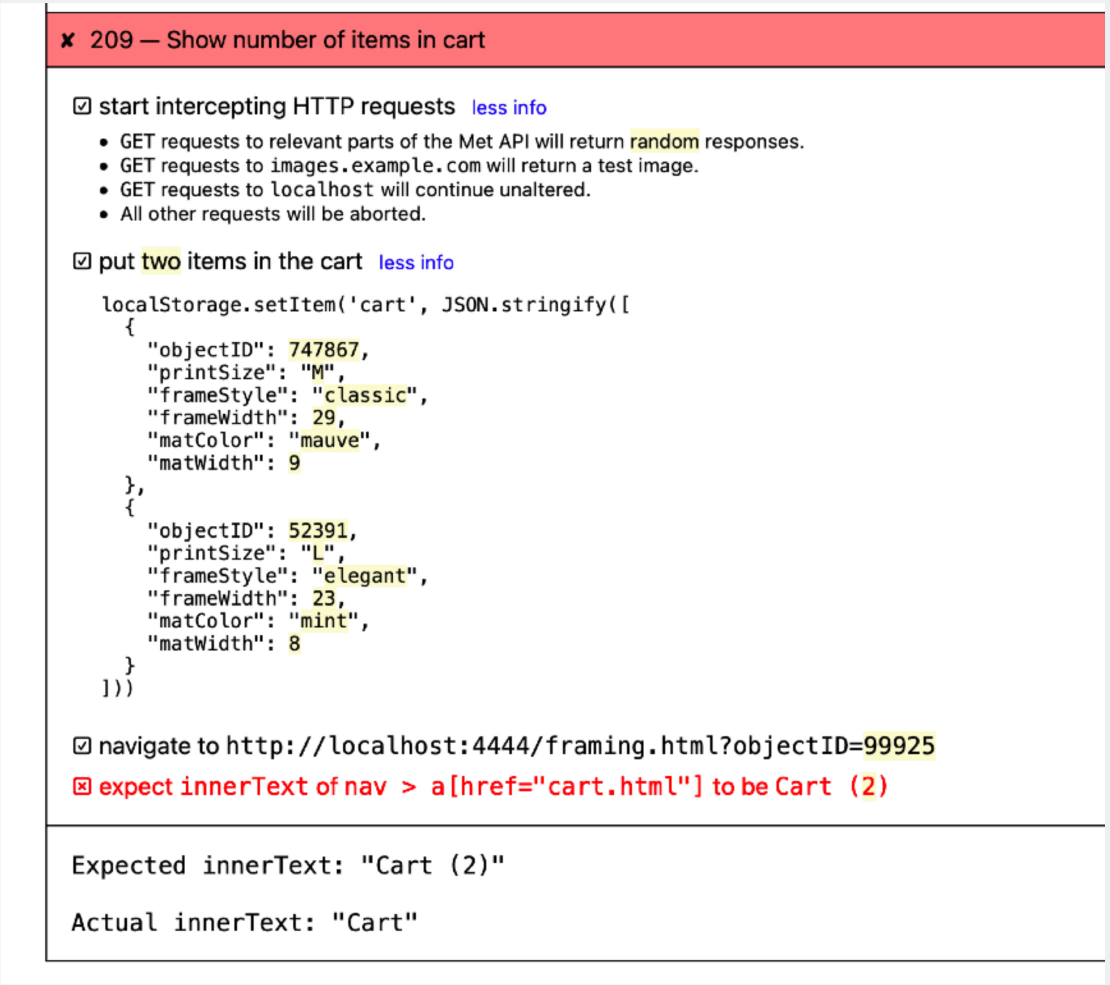
Assignment 3:
Backend

- Node.js
- REST API

Assignment 4:
Frontend Abstraction

- Vue.js

Automated Grading A2-A4 — Integration Testing



✘ 209 — Show number of items in cart

☑ start intercepting HTTP requests less info

- GET requests to relevant parts of the Met API will return random responses.
- GET requests to `images.example.com` will return a test image.
- GET requests to `localhost` will continue unaltered.
- All other requests will be aborted.

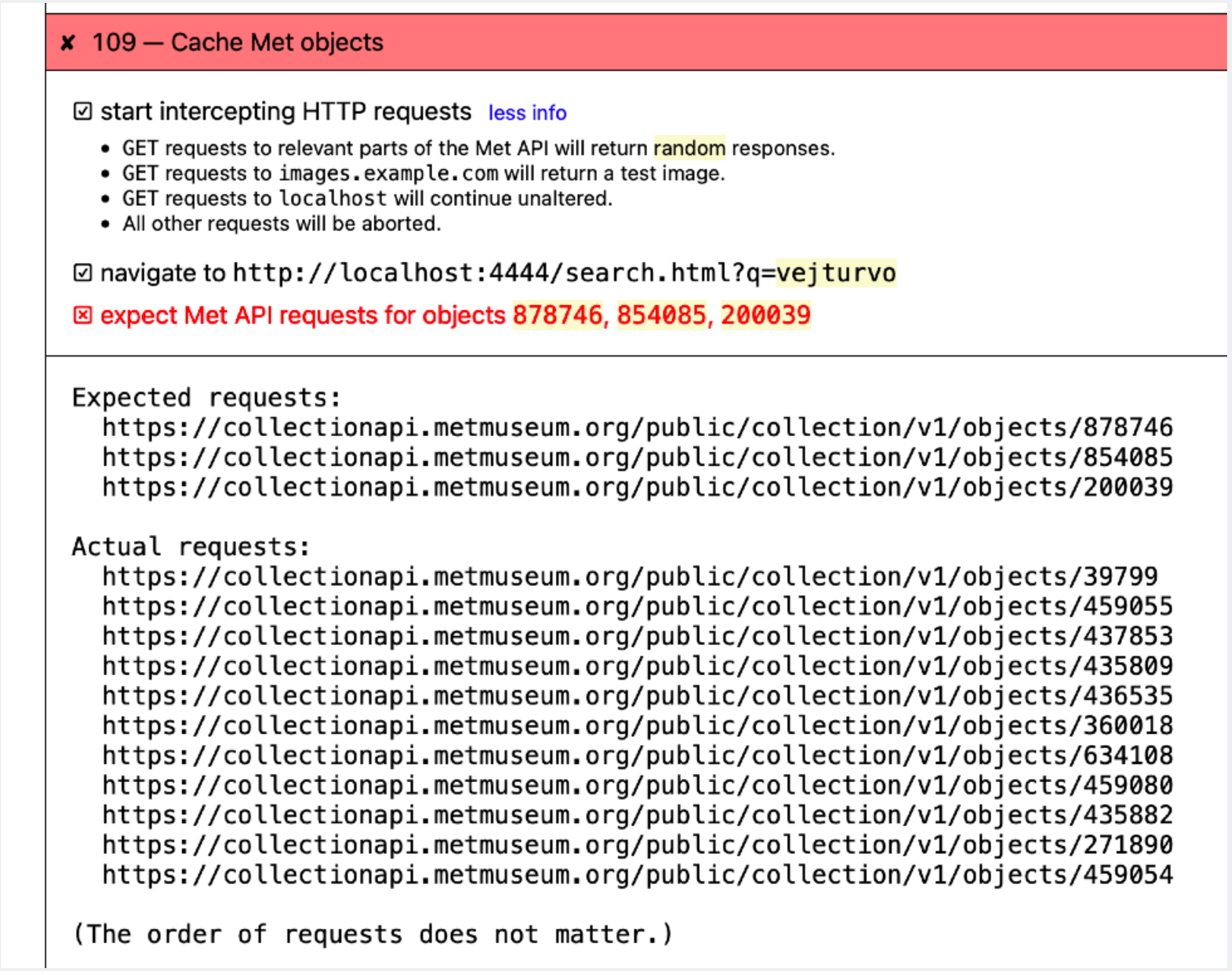
☑ put two items in the cart less info

```
localStorage.setItem('cart', JSON.stringify([
  {
    "objectID": 747867,
    "printSize": "M",
    "frameStyle": "classic",
    "frameWidth": 29,
    "matColor": "mauve",
    "matWidth": 9
  },
  {
    "objectID": 52391,
    "printSize": "L",
    "frameStyle": "elegant",
    "frameWidth": 23,
    "matColor": "mint",
    "matWidth": 8
  }
]))
```

☑ navigate to `http://localhost:4444/framing.html?objectID=99925`

☒ expect `innerText` of `nav > a[href="cart.html"]` to be `Cart (2)`

```
Expected innerText: "Cart (2)"

Actual innerText: "Cart"
```



✘ 109 — Cache Met objects

☑ start intercepting HTTP requests less info

- GET requests to relevant parts of the Met API will return random responses.
- GET requests to `images.example.com` will return a test image.
- GET requests to `localhost` will continue unaltered.
- All other requests will be aborted.

☑ navigate to `http://localhost:4444/search.html?q=vejturvo`

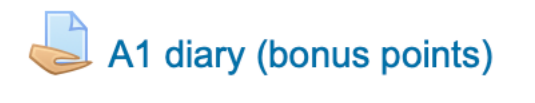
☒ expect Met API requests for objects `878746`, `854085`, `200039`

```
Expected requests:
  https://collectionapi.metmuseum.org/public/collection/v1/objects/878746
  https://collectionapi.metmuseum.org/public/collection/v1/objects/854085
  https://collectionapi.metmuseum.org/public/collection/v1/objects/200039

Actual requests:
  https://collectionapi.metmuseum.org/public/collection/v1/objects/39799
  https://collectionapi.metmuseum.org/public/collection/v1/objects/459055
  https://collectionapi.metmuseum.org/public/collection/v1/objects/437853
  https://collectionapi.metmuseum.org/public/collection/v1/objects/435809
  https://collectionapi.metmuseum.org/public/collection/v1/objects/436535
  https://collectionapi.metmuseum.org/public/collection/v1/objects/360018
  https://collectionapi.metmuseum.org/public/collection/v1/objects/634108
  https://collectionapi.metmuseum.org/public/collection/v1/objects/459080
  https://collectionapi.metmuseum.org/public/collection/v1/objects/435882
  https://collectionapi.metmuseum.org/public/collection/v1/objects/271890
  https://collectionapi.metmuseum.org/public/collection/v1/objects/459054

(The order of requests does not matter.)
```

Web Engineering Diary Study — Bonus Points

- for each assignment, **upload a short diary of your experience** solving it
- we are interested in the use of **external sources and tools**
  - AI assistants: GitHub Copilot, ChatGPT, Bing AI chat, LLaMA,…
  - Q&A sites and discussion forums: StackOverflow, TUWEL, Discord,…
- you can get **up to 2 bonus points per assignment**
  - be as detailed as possible — screenshots are welcome!
  - contents of diaries do not affect the grading of your assignment

- more information in TUWEL



A1 diary (bonus points)