

Web Programming

Prof. D. König

It's about you

*"Every education
must be
self-education."*

Robert Henri (1960)

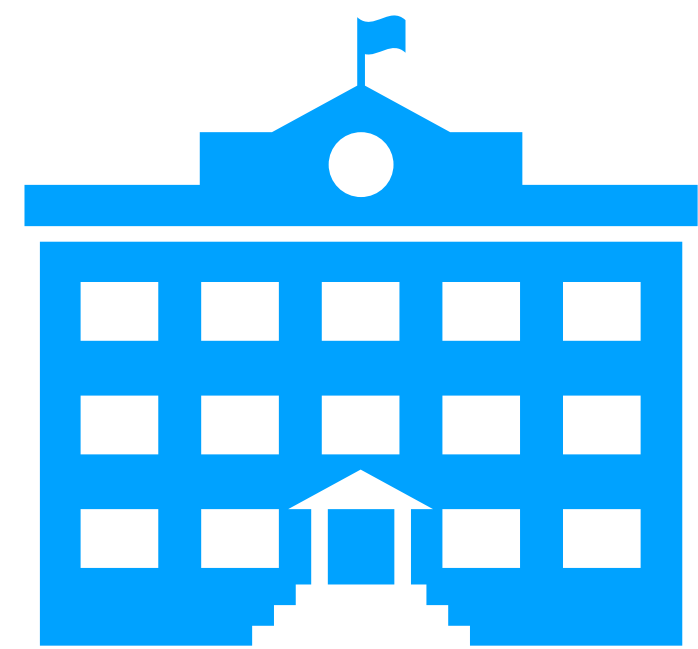
Teams

Recording?

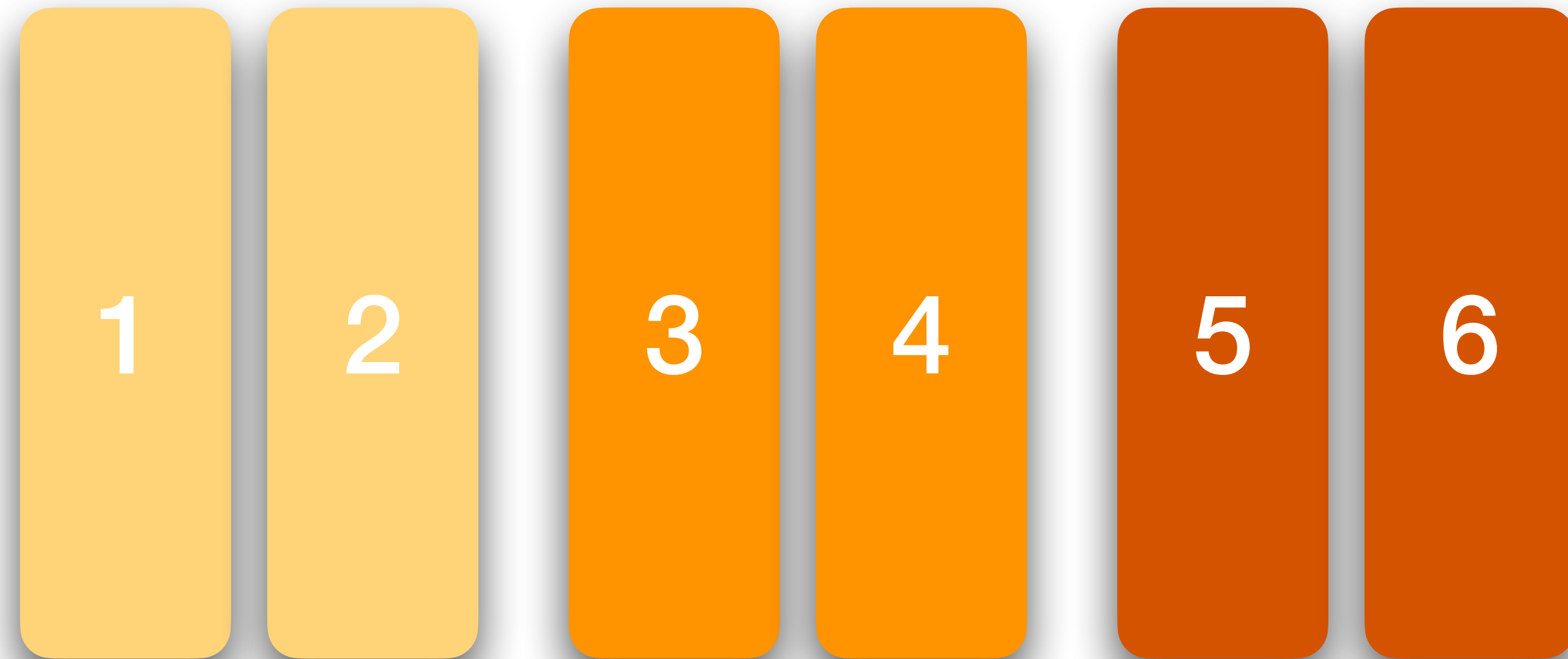
Streaming?

Interactions...

Overview



School



Profession

Personal Responsibility

Web Modules

Workshop Web *

Web Clients

Code Kitchen

Web Programming

Web Frameworks

Web Engineering

Code Kitchen

Mondays, 15:15 - 18:00

5.2B53 (and else)

Join by mail to me.

Work on code, get extra credit

Paradigms

Scripting

Object-Oriented Programming

Functional Programming

Continuing Concerns

Computer Science perspective

Cross-technology

Web for fun and profit

Didactics

Refresher, Q&A, JS Goodie

Live-Coding, Exercises

Quiz

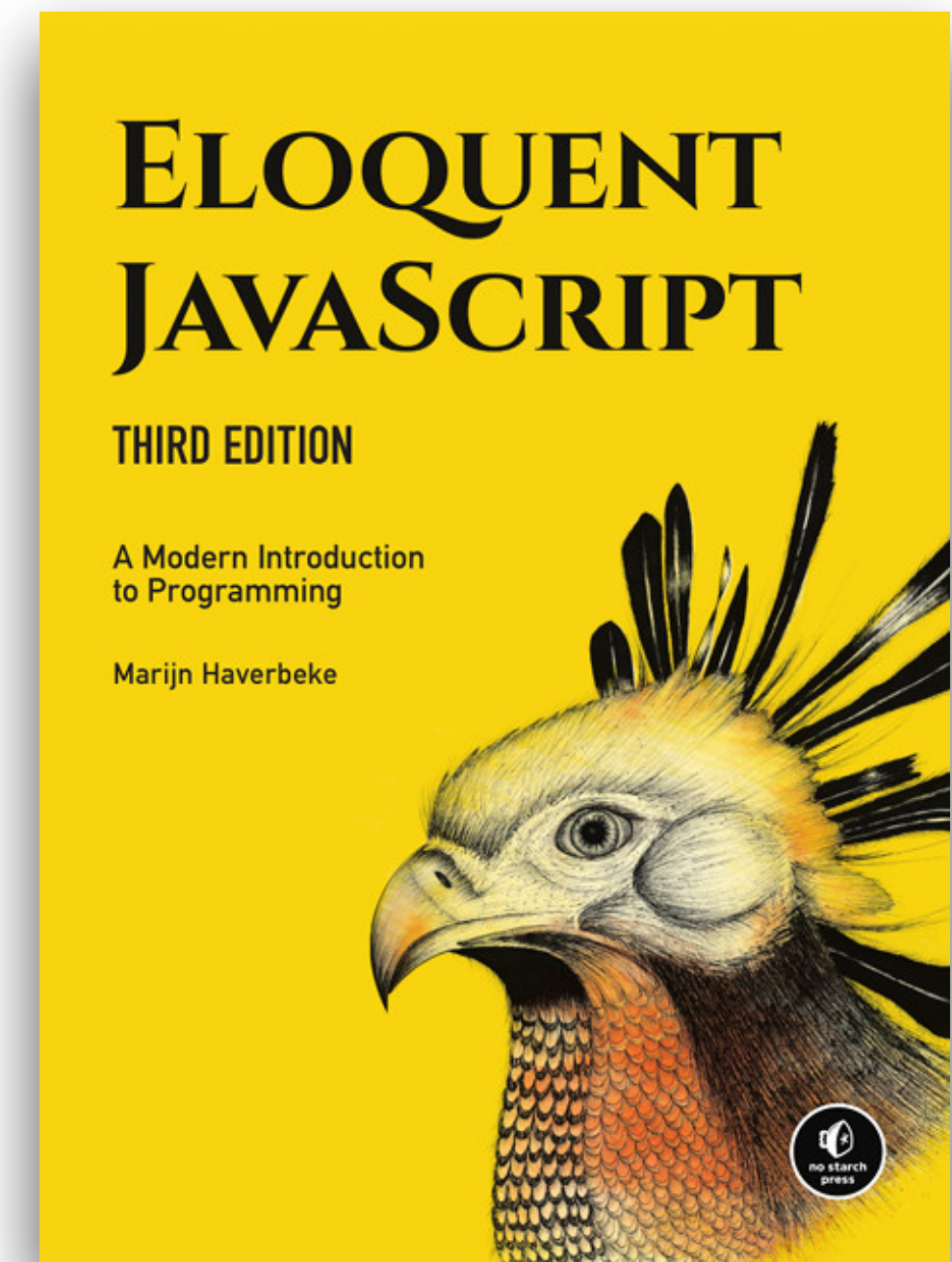
Recommended Reading

<https://go.oreilly.com/fachhochschule-nordwestschweiz>



Script/Textbook
Eloquent JavaScript
You don't know JS

Minimum Level: ES6



Grading

Continuous Assessment Grade

bases on acquired experience &
continued effort

Quiz: collecting points

<http://86.119.43.169:9090>

Matrikel Nr & key

Plan: 11 points per week

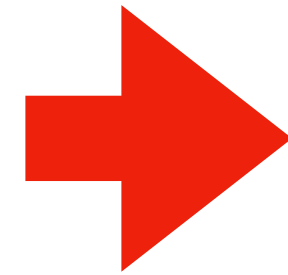
Passing threshold: 60%



Extra Points

max. 10 extra points
for self-made toolbox

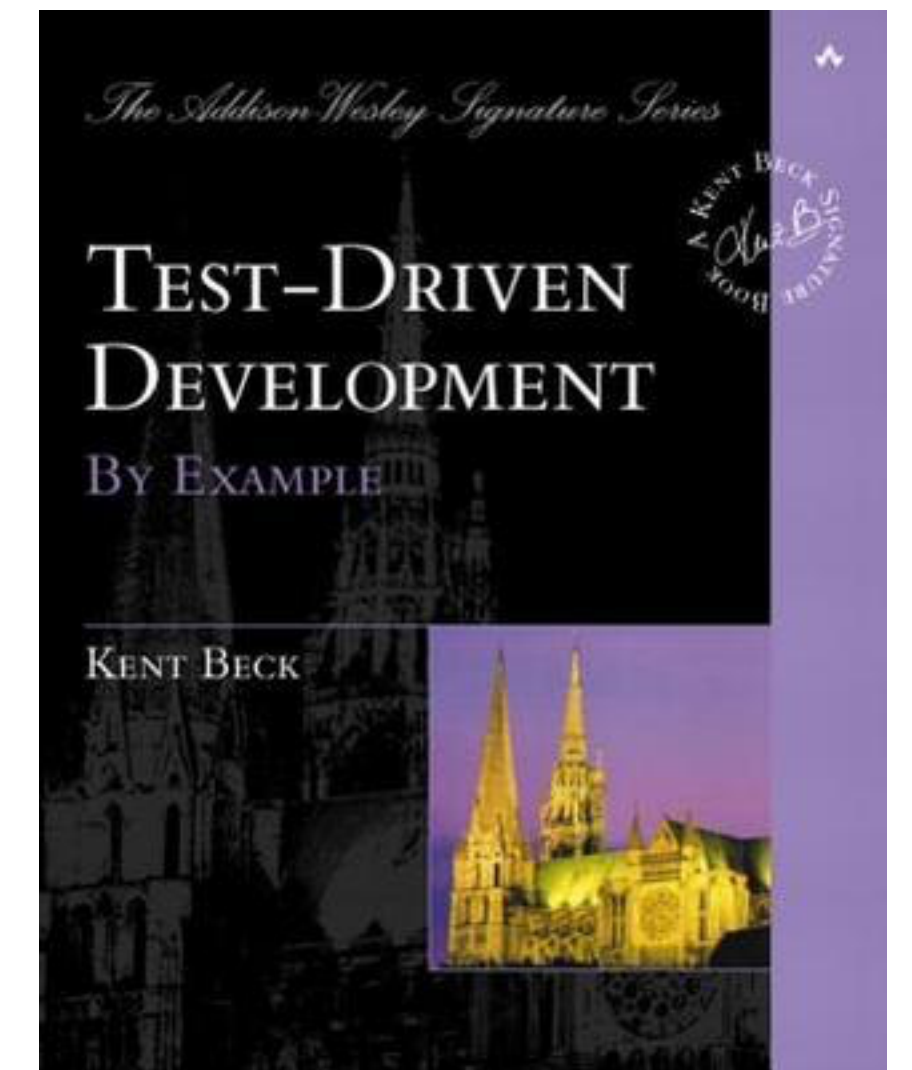
Storybook (initial)



Drehbuch, Intro, Functions
 Scientific foundations
 Algebraic Data Types, Snake
 Applied Science
 Scripting, PWA, Plotter, Excel
 Objects
 Classes
 JS Types, JsDoc
 Async Programming
 Modules
 Data Flow, Excel improved
 Iterator Protocol, Sequences
 Moves, User Interfaces
 Crazy JS

Language Acquisition

Validate assumptions
Capture knowledge
in code as a **unit test**



Approach

You only understood,
what you can build yourself
=> no dependencies

Live Coding

[https://github.com/
WebEngineering-FHNW/
webpr-hs24](https://github.com/WebEngineering-FHNW/webpr-hs24)

JavaScript functions

function keyword

named functions

function references

calling functions

too many, too few arguments

when to return, missing returns

statements vs. expressions

Lambda expressions

=> syntax

high-order functions

returning functions

nested lambda expressions

calling curried functions/lambdas

() vs {}

Canvas

```
const canvas = document.getElementById("canvas");  
const context = canvas.getContext("2d");  
  
context.fillStyle = "black";  
context.fillRect(0, 0, canvas.width, canvas.height);
```

Key events

```
const rightArrow = 39;  
const leftArrow  = 37;  
window.onkeydown = evt => {  
    (evt.keyCode === rightArrow) ? ... : ... ;  
};
```

Game loop

```
setInterval( () => {  
    nextBoard();  
    display(context);  
}, 1000 / 5);
```

Practice

Programming the Snake game

week1: replace /* fill here */ until tests are ok

Homework

watch Gabriel Lebec (~1:40)

Fundamentals of Lambda Calculus &
Functional Programming in JavaScript,
Parts I and II.

[https://www.youtube.com/watch?
v=3VQ382QG-y4](https://www.youtube.com/watch?v=3VQ382QG-y4)

Collect first points

<http://86.119.43.169:9090>

Student id number & key