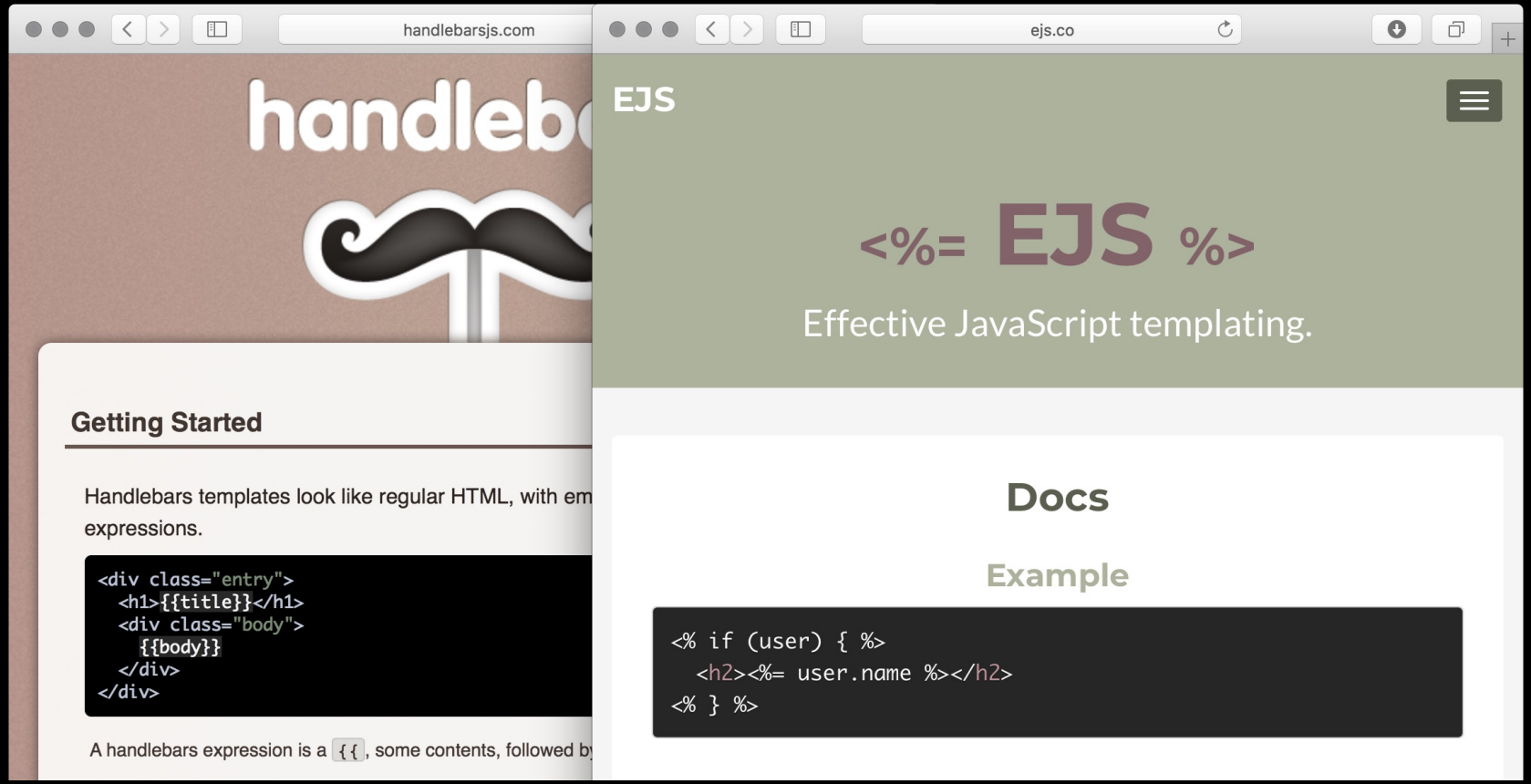
back-end

HTTP & Forms

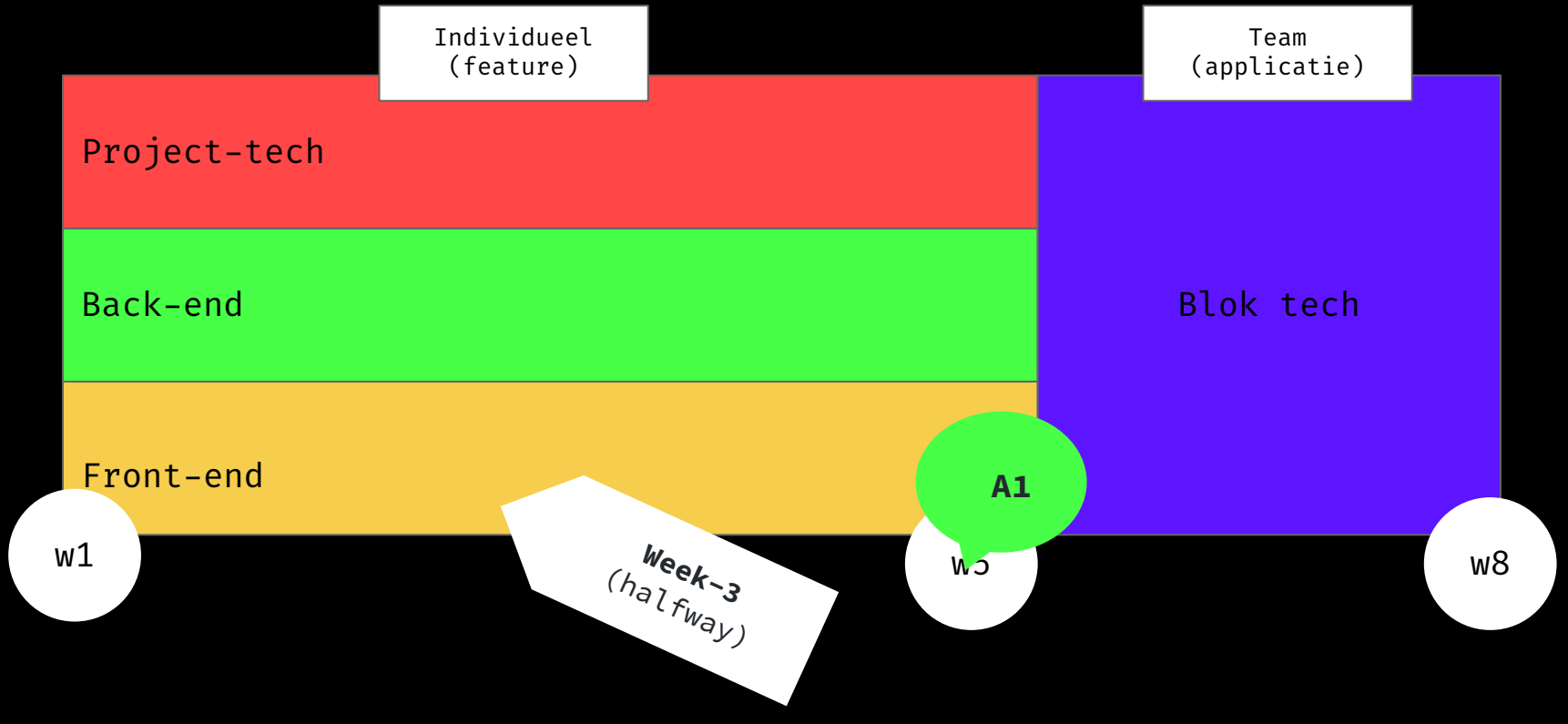
lab 3/8

Stand-up!

Show what you did



Live demo templating


Individueel
(feature)
Team
(applicatie)
Project-tech
Back-end
Front-end
Blok tech
A1
w1
Week-3
(halfway)
w5
w8

today

I. ~~Stand-up~~
II. HTTP
III. Forms (+ files)
IV. Connect

HTTP

http

?

The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed, collaborative, and hypermedia information systems. […]

Hypertext is structured text that uses logical links (hyperlinks) between nodes containing text.

wikipedia.org

http

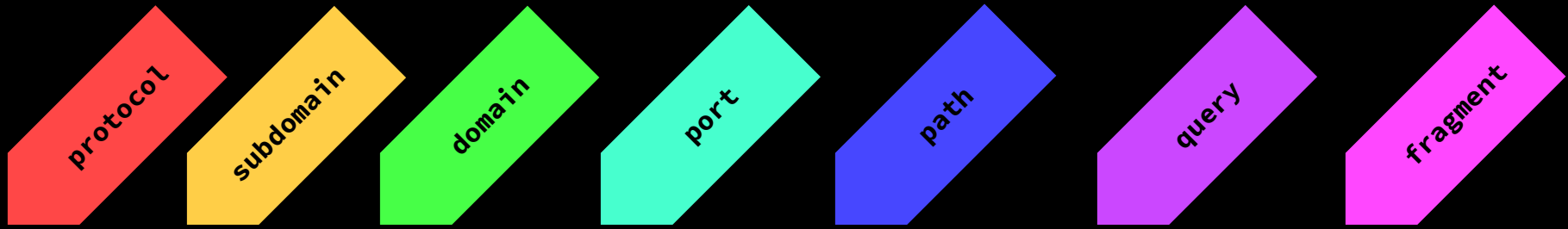
url

A Uniform Resource Locator (URL) […] is a reference to a web resource that specifies its location on a computer network and a mechanism for retrieving it.

wikipedia.org

http

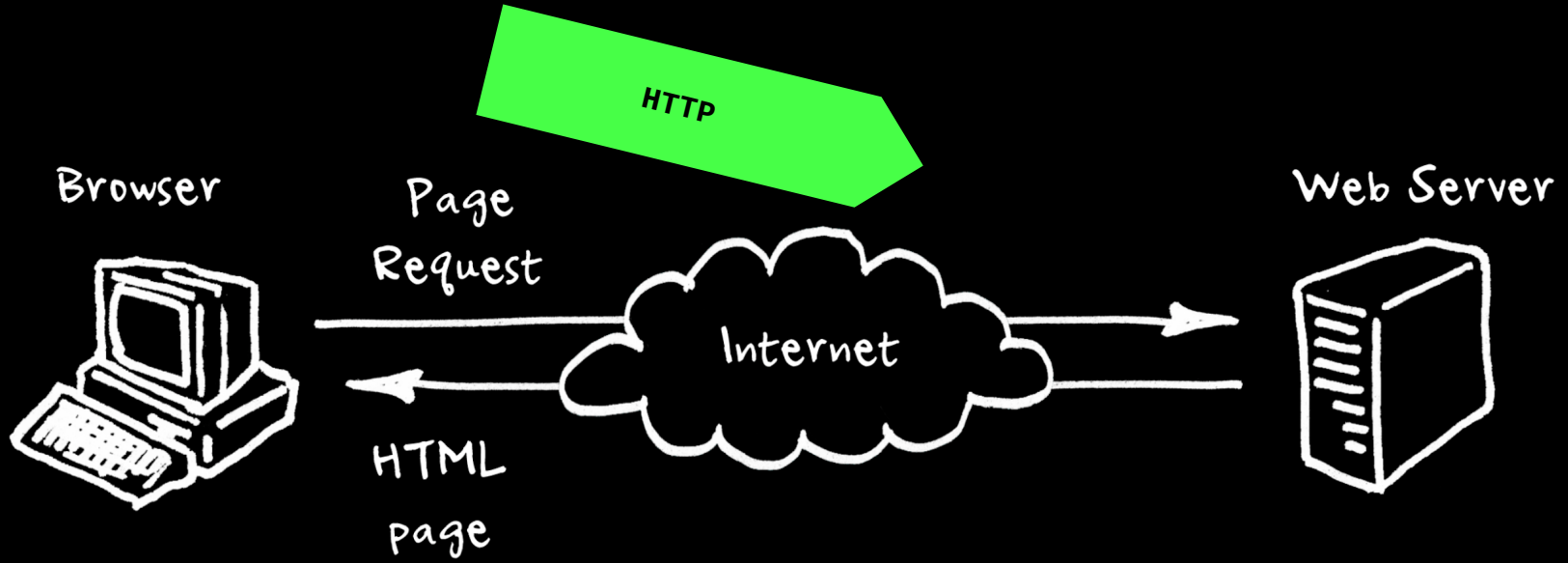
url



http://test.example.com:3000/users/search?q=test&w=all#results

http

req/res



http

response

HTTP/1.1

status code &
status message

Date: Mon, 19 Feb [illegible] GMT

Last-Modified: Tue, 13 Feb 2018 20:18:22 GMT

Content-Length: 29769

Content-Type: text/html

<!DOCTYPE html… (here comes the 29769 bytes of the requested web page)

http status

Category	Range	Example
Information	**1••**	101 Switching Protocols
Success	**2••**	200 OK, 201 Created
Redirect	**3••**	301 Moved Permanently
Client error	**4••**	400 Bad Request, 404 Not Found
Server Error	**5••**	500 Internal Server Error

http

methods

- **Create:** PUT, POST
- **Read:** GET
- **Update:** PATCH
- **Delete:** DELETE

http

get

```
>     /users/1 HTTP/1.1
> Host: example.com
>
< HTTP/1.1 200 OK
<
< {"id":1,"name":"Anna","age":22}
```

Request a resource

http

post

```
>       /users HTTP/1.1
> Host: example.com
>
> {"name":"Bisma","age":19}
>
< HTTP/1.1 201 Created
< Location: /users/2
<
< {"id":2,"name":"Bisma","age":19}
```

Submit a resource

http

get/post

http

post

- **Text** text/plain, text/html, text/javascript, …
- **Image** image/jpeg, image/png, …
- **Audio** audio/webm, audio/ogg, …
- **Video** video/webm, video/ogg, …
- **Application** application/pdf, application/octet-stream,…

Forms


localhost:8000/add
Add a new movie
Title
Plot
Description
add
Add a movie
Express

view/add.ejs

```
<% include head.ejs %>
<title>Add a movie - My movie website</title>
<h1>Add a new movie</h1>
<form action=/add-movie method=post>
  <label>Title <inpu  e=title></lab
  <label>
    Plot (short)
    <input name=plot>
  </label>
  <label>
    Description (long)
    <textarea
      name=description
      rows=5
    ></textarea>
  </label>
  <input type=submit value=Add>
</form>
```

The **ACTION** is the URL to receive the request

Send a **POST** request…

Express

index.js

```
const express = require('express')

…

express()
  .use(express.static('static'))
  .use(express.urlencoded({extended: true}))
  .set('view engine', 'ejs')
  .set('views', 'view')
  .get('/', movies)
  .get('/:id', movie)
  .get('/add', form)
  .post('/add-movie', add)
.listen(8000)

…
```

Middleware: parses form data

Handle a **post** request to **/add-movie**

Express

index.js

```
express()
  .use(express.urlencoded({extended: true}))

…

function add(req, res) {
  var id = slug(req.body.title).toLowerCase()

  data.push({
    id: id,
    title: req.body.title,
    plot: req.body.plot,
    description: req.body.description
  })

  res.redirect('/' + id)
}

…
```

Parsed form data is stored in **req.body**

Express

form

slug

```
// Files
express-server/
├─ node_modules/
├─ static/
│  └─ index.css
├─ view/
│  ├─ add.ejs
│  ├─ detail.ejs
│  ├─ head.ejs
│  ├─ list.ejs
│  └─ not-found.ejs
├─ index.js
└─ package.json
```

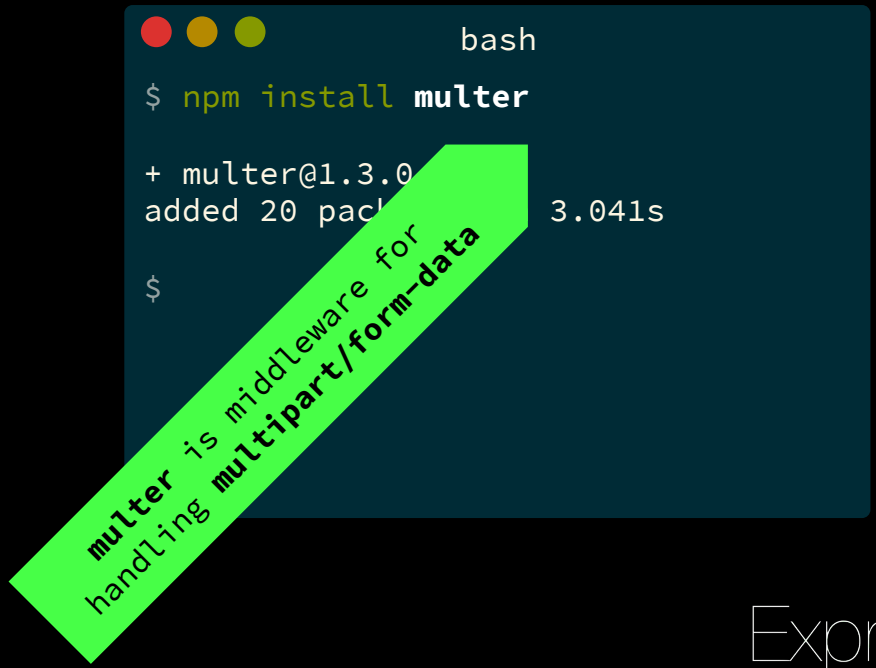
Express

Files

files

multer

```
// Files
express-server/
├─ node_modules/
├─ static/
│  ├─ index.css
│  ├─ index.js
│
├─ view/
│  ├─ add.ejs
│  ├─ detail.ejs
│  ├─ head.ejs
│  ├─ list.ejs
│  ├─ not-found.ejs
│  └─ tail.ejs
├─ index.js
└─ package.json
```



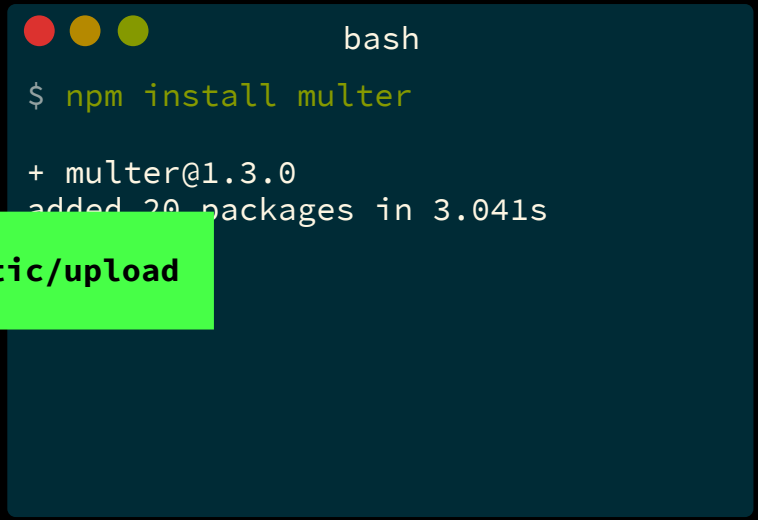
Express

files

folder

```
// Files
express-server/
├─ node_modules/
├─ static/
│  ├─ index.css
│  ├─ index.js
│  └─ upload/
├─ view/
│  ├─ add.ejs
│  ├─ detail.ejs
│  ├─ head.ejs
│  ├─ list.ejs
│  ├─ not-found.ejs
│  └─ tail.ejs
├─ index.js
└─ package.json
```

We'll upload files to **static/upload**



Express

view/add.ejs

```
<% include head.ejs %>
<title>Add a movie - My movie website</title>
<h1>Add a new movie</h1>
<form
  action=/add-movie
  method=post
  enctype=multipart/form-data
>
  <label>Title <input name=title></label>
  <label>
    Cover
    <input name=cover type=file accept=image/*>
  </label>
  <label>
    Plot (short)
    <input name=plot>
  </label>
  …
 <input type=submit value=Add>
</form>
<% include tail.ejs %>
```

Accept only images

Express

index.js

```
…
const multer = require('multer')

const upload = multer({dest: 'static/upload/'})

express()
  …
  .post('/add-movie', upload.single('cover'), add)
  …

function add(req, res) {
  …
  data.push({
    …
    cover: req.file ? req.file.filename : null,
    …
  })
}

…
```

multer sets **req.file**

Express


localhost:8000/add
Add a new movie
Wonder Woman
Diana, an Amazonian warrior…
Cover
wonder-woman.jpg
When a pilot crashes and tells of conflict in the outside world, Diana, an Amazonian warrior in training, leaves home …
We can add files!

Express

Expert tip 0

multer

Don’t use multer’s upload for forms without a file <input> - things will break!

```
// upload.single()
```

Expert tip 1

multer

Multer will store uploaded files for us on the webserver in the folder we specify, so we don’t need to worry about that. We just need to remember the filename.

```
req.file.filename
```

recap

Question: what is the difference between …?

Break!

Questions:

Where will you use a form in your assigment?

What will be the ‘method’ in your form?

What will happen with the user input on the backend?

What will the user see after sending the form?

Input

input

> Receive input from users on the server and manipulate that data for your own feature using HTTP request methods.

Synopsis

- **Time**: 10:00h
- **Goals**: subgoal 4, subgoal 5, subgoal 6
- **Due**: before week 4

Description

So far we only send data (response) to the client with our server. A one-sided conversation. Now the fun starts, it's time to actually start receiving data from users. For example; users can enter something into an input field or submit whole forms with file uploads.

The description of this assignment is quite vague since the end result will be very specific to your Job Story. Make sure you at least spend the

work on input and connect

Input

input

> Receive input from users on the server and manipulate that data for your own feature using HTTP request methods.

Synopsis

- **Time**: 10:00h
- **Goals**: subgoal 4, subgoal 5, subgoal 6
- **Due**: before week 4

Description

Note: *Input* is quite a **‘large’** and **‘vague’** assignment since the end result will be very specific to your Job Story.

Break!

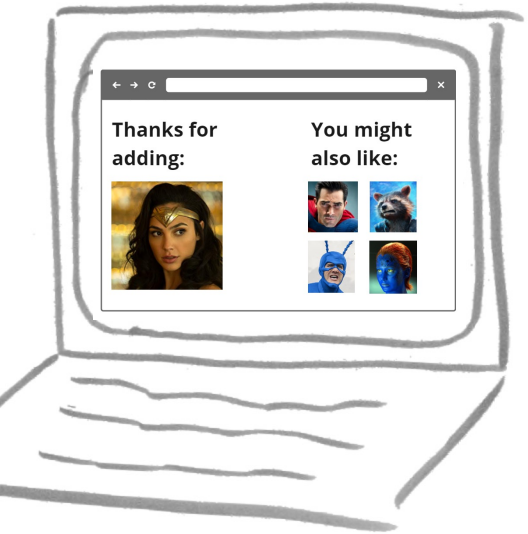
Connect

Storing data in db

Client
(browser)

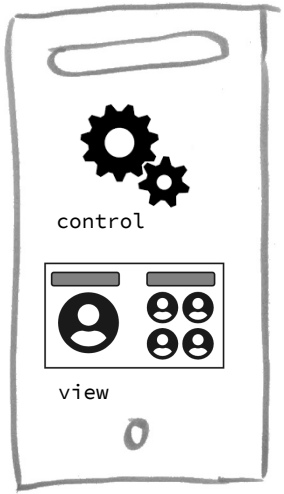
Server
(Webserver met Node.js)

Database
(MongoDB)



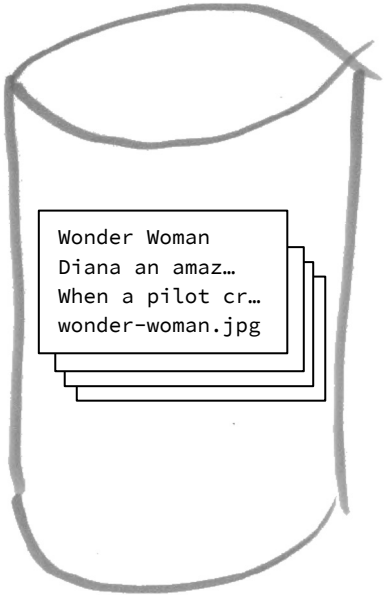
1. Browser: here's form data about a new movie

HTTP POST request



2. Server: please store this info

3. Database: I did!



4. Server: now get me some related movies

5. Database: here are the details

Server: here's a new page

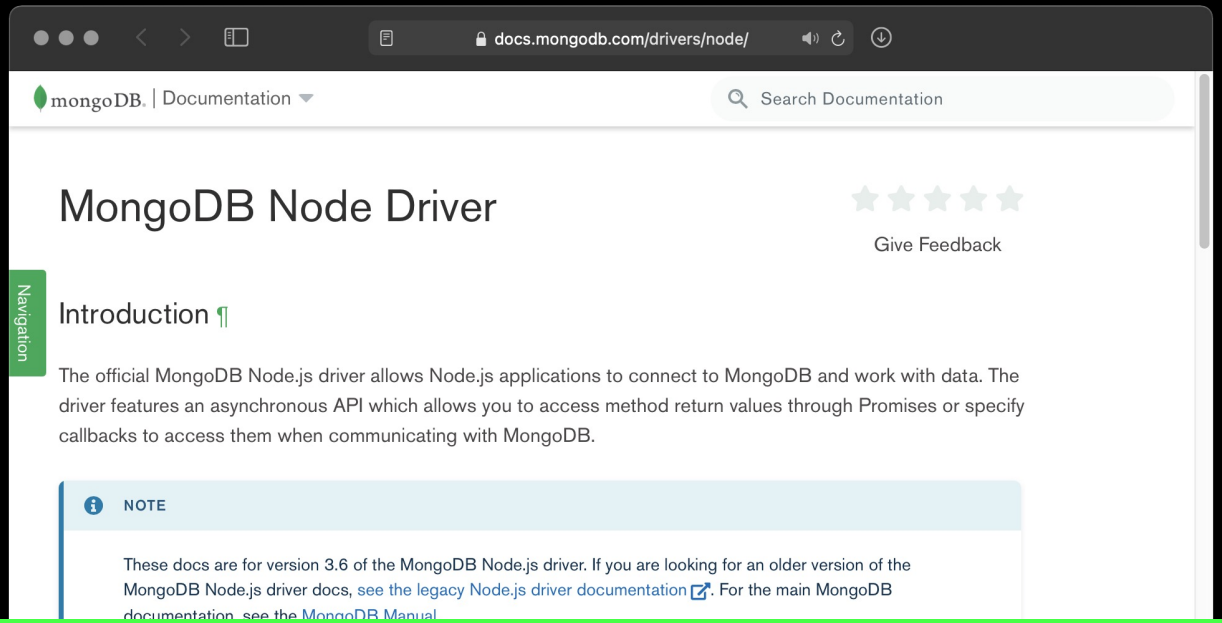
6. HTTP response

connect

mongodb

MongoDB (from hu**mong**ous) is a free and open-source cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with schemas. MongoDB is developed by MongoDB Inc. […]

wikipedia.org



Note: there are a lot of small steps involved. Read the Mongo guides very carefully. If you miss a step everything will be broken.

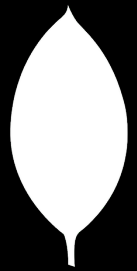
connect

.env

```
// Files
mongodb-server/
├─ node_modules/
├─ static/
│  ├─ index.css
│  ├─ index.js
│  └─ upload/
├─ view/
│  ├─ add.ejs
│  ├─ detail.ejs
│  ├─ head.ejs
│  ├─ list.ejs
│  ├─ not-found.ejs
│  └─ tail.ejs
├─ .env
├─ index.js
└─ package.json
```

.env

```
DB_HOST=localhost
DB_PORT=27017
DB_NAME=mymoviewebsite
DB_USERNAME=dandevri
```



connect

.env

```
// Files
mongodb-server/
├─ node_modules/
├─ static/
│  ├─ index.css
│  ├─ index.js
│  └─ upload/
├─ view/
│  ├─ add.ejs
│  ├─ detail.ejs
│  ├─ head.ejs
│  ├─ list.ejs
│  ├─ not-found.ejs
│  └─ tail.ejs
```

Note: Never ever put your **host and password in code or on GitHub**! People will be able to access your database!

connect

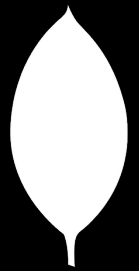
.gitignore

```
// Files
mongodb-server/
├─ node_modules/
├─ static/
│  ├─ index.css
│  ├─ index.js
│  └─ upload/
├─ view/
│  ├─ add.ejs
│  ├─ detail.ejs
│  ├─ head.ejs
│  ├─ list.ejs
│  ├─ not-found.ejs
│  └─ tail.ejs
├─ .env

├─ index.js
└─ package.json
```

.gitignore

```
node_modules/
.DS_Store
.env
```



exit;

see you in lab-4!