

Static Site Generators for Instructional Content

Eamonn de Leastar, WIT

edeleastar@wit.ie

<https://github.com/edeleastar>

<https://wit-hdip-comp-sci-2018.github.io>

TutorStack

1. Instruction Materials



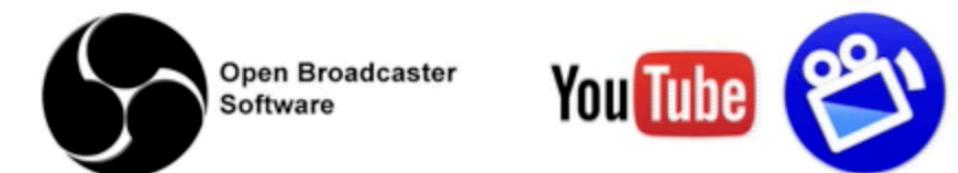
2. Community & screen sharing



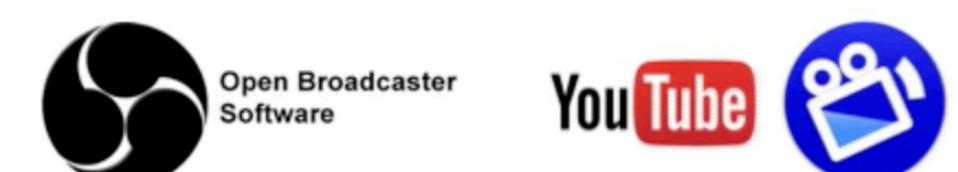
3. Assessment & Feedback



4. Media



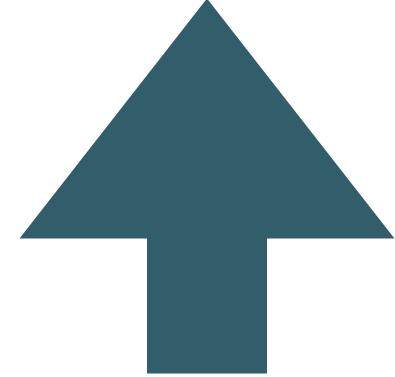
5. Broadcast



TutorStack

1. Instruction Materials

 tutors-ts





At [StaticGen](#), our open-source directory of **static website generators**, we've kept track of more than a hundred generators for more than a year now, and

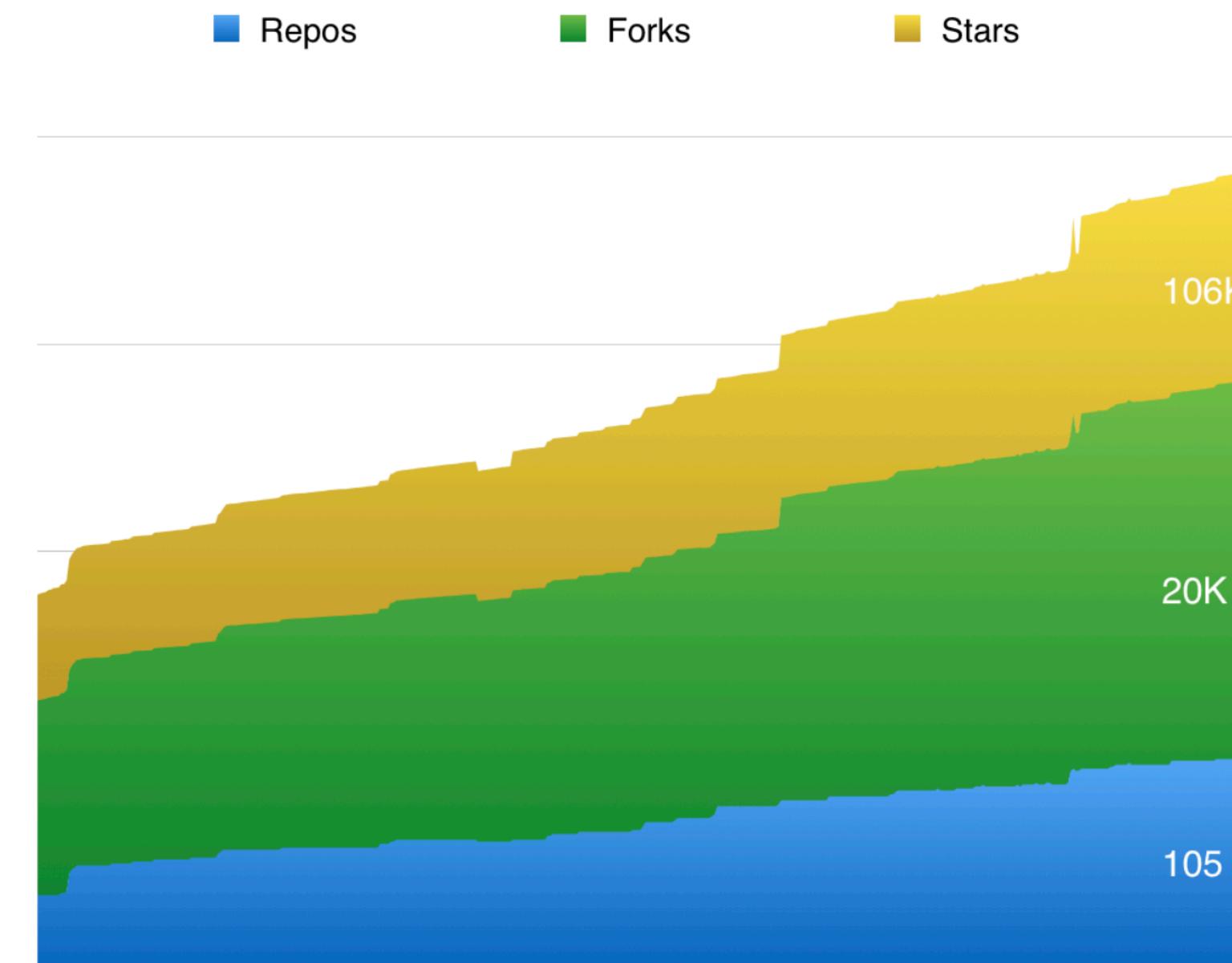
we've seen both the volume and popularity of these projects take off incredibly on GitHub during that time, going from just 50 to more than 100 generators and a total of more than 100,000 stars for static website generator repositories.

Influential design-focused companies such as Nest and MailChimp now use static website generators for their primary websites. [Vox Media](#) has built a [whole publishing system](#) around Middleman. [Carrot](#), a large New York agency and part of the Vice empire, builds websites for some of the world's largest brands with its own open-source generator, [Roots](#). And several of Google's properties, such as "[A Year In Search](#)" and [Web Fundamentals](#), are static.

NOVEMBER 2, 2015 • [99 COMMENTS](#)

Why Static Site Generators Are The Next Big Thing

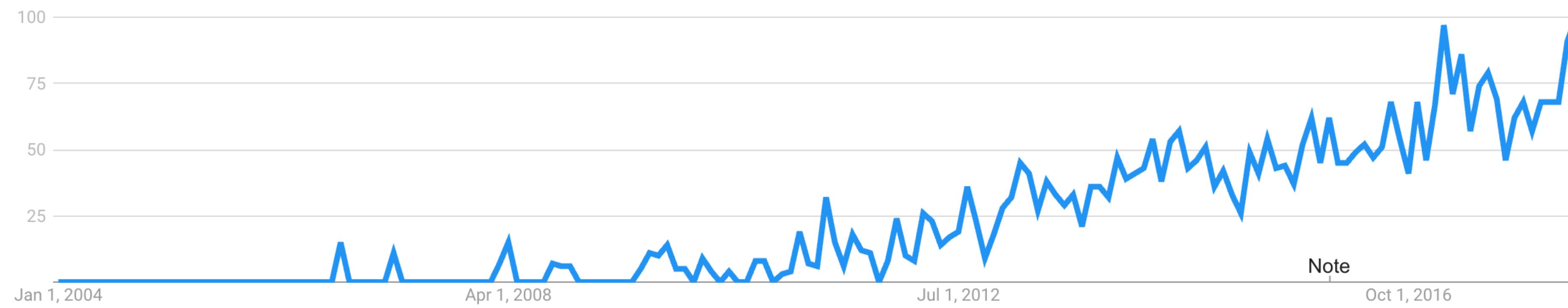
[Coding](#) 587 # [Tools](#) 173 # [Static Generators](#) 9



<https://www.smashingmagazine.com/2015/11/modern-static-website-generators-next-big-thing>

2015!

Static Site Generator



Google Trends

StaticGen

A List of Static Site Generators for JAMstack Sites



About Contribute About JAMstack Need a Static CMS?

Filter

Any Language ▾ Any Template ▾ Any License ▾

Sort

GitHub stars ▾

Jekyll

★ 34352
+163
114
-6
⌚ 7572
+37
变异 6340
+17

A simple, blog-aware, static site generator.

Languages: Ruby

Templates: Liquid

License: MIT

 Deploy to Netlify

Hugo

★ 25860
+405
270
+14
⌚ 3126
+32
变异 3739
+97

A Fast and Flexible Static Site Generator.

Languages: Go

Templates: Go

License: Apache 2.0

 Deploy to Netlify

Next

★ 25537
+513
280
+29
⌚ 2462
+91
变异 N/A

A framework for statically-exported React apps

Languages: JavaScript

Templates: JavaScript

License: MIT

Get started with one click!

For generators with the "Deploy to Netlify" button, you can deploy a new site from a template with one click. Get HTTPS, continuous delivery, and bring a custom domain, free of charge.

Want your own Deploy to Netlify button? [Learn more here](#).

<https://www.staticgen.com>

222 Separate Systems!

Static Site Generator

*“...a hybrid approach to web development that allow you to build a powerful, server-based website locally on your computer but pre-builds the site into static files for deployment”**

*<https://wsvincent.com/what-is-a-static-site-generator>

Tutors

Eamonn de Leastar (edeleastar@wit.ie)



Setup



Setting up and configuring the tools tutors requires, and tutors itself. These are: git, node.js and the sublime text editor.

Composition



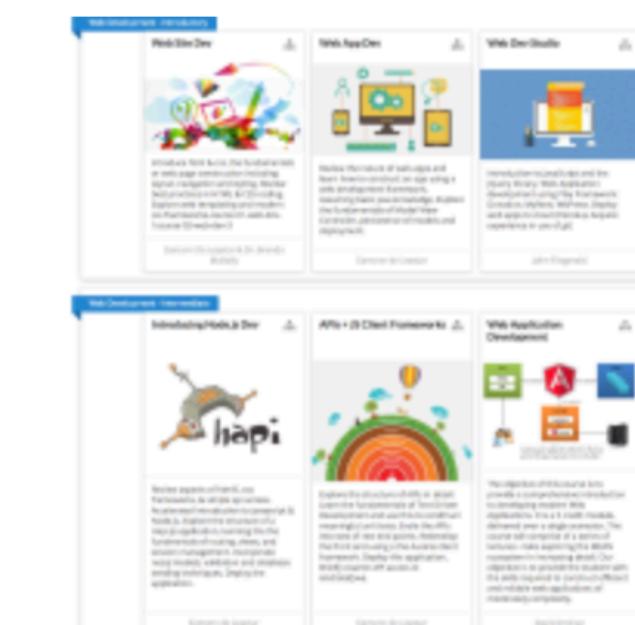
Explore the structure and contents of Labs. Introduce the basics of Markdown and demonstrate the primary features.

Publishing



Publish course to the public Internet using github, and make individual topics available to Moodle.

Portfolios



Aggregating multiple modules into a portfolio.

Example - course with 4 topics

Setup

Eamonn de Leastar (edeleastar@wit.ie)



Introducing Tutors



A quick tour of the purpose, structure and features of a tutors course web site.

Tutors Course Structure



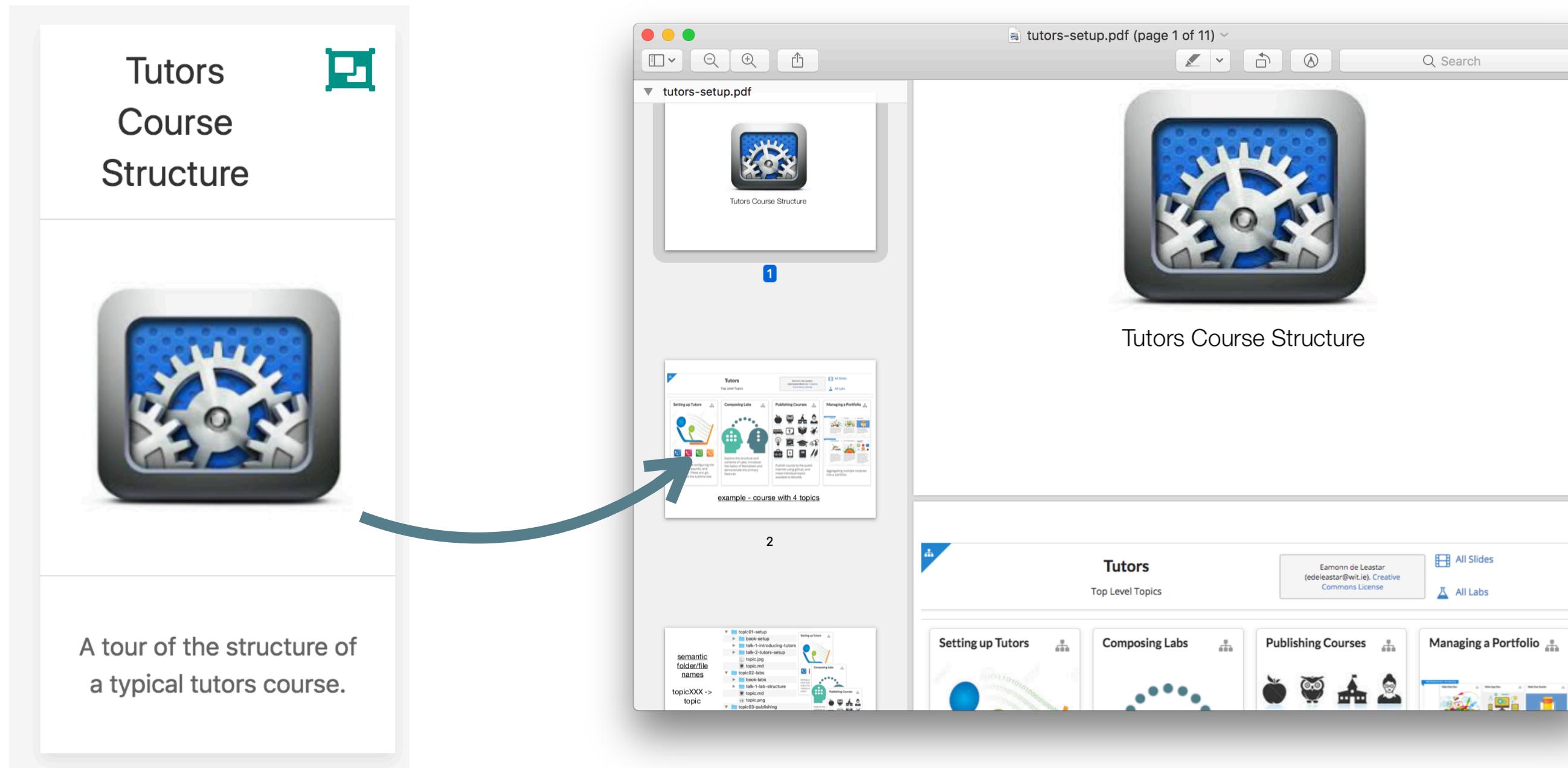
A tour of the structure of a typical tutors course.

Lab-01- Setup



Install the tutors command line application and take for a first spin.

1 topic = slides + lab



Talk (slides)

A screenshot of the "Lab-01-Setup" guide. At the top, there's a navigation bar with tabs: "Setup", "Lab-01-Setup", "01", "02", "03", "04", "05", "06", "07" (which is highlighted), "08", and "Exercises". The main content area is titled "Generate a Course" and contains the following text:

The simplest way to get started with tutors is to use the `new` command to generate a template course:

```
tutors new
```

This should respond with:

```
Creating new template course...
Cloning into 'tutors-starter-0'...
Next steps...
cd into tutors-starter-0 and run "tutors" again
This will generate the course web in "tutors-starter/public-site"
```

The command will have generated a new folder: `tutors-starter-0`, populated with a sample/template course:

A screenshot of a Windows File Explorer window showing the contents of the `tutors-starter-0` folder. The folder structure is as follows:

- File
- Home
- Share
- View
- Local Disk (C:)
- dev
- topic01

Lab (guides)

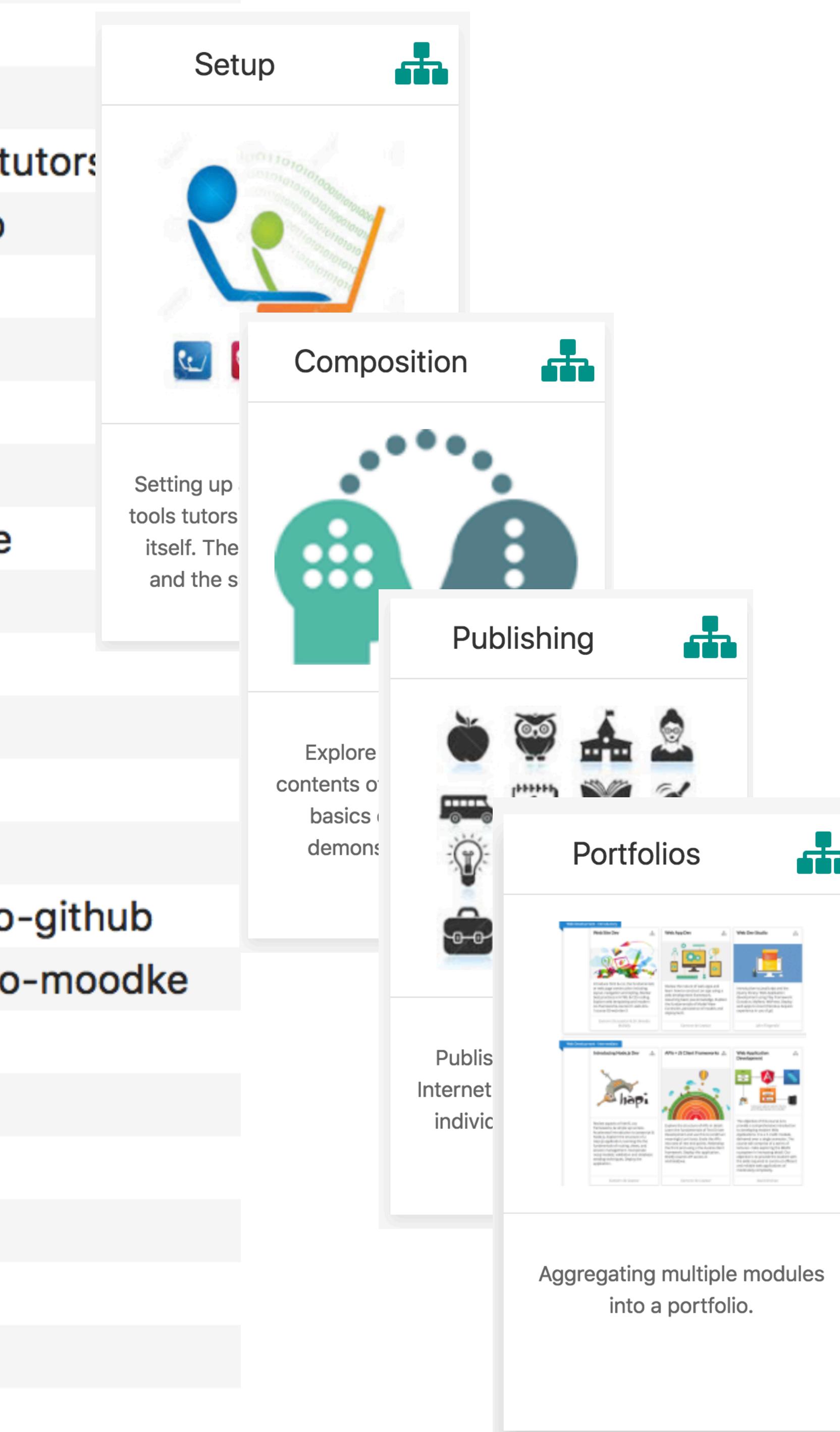
Semantic folder/file names

topicXXX ->
topic

bookXXX ->
lab

talkXXX ->
talk

▼	topic01-setup
►	book-setup
►	talk-1-introducing-tutors
►	talk-2-tutors-setup
	topic.jpg
	topic.md
▼	topic02-labs
►	book-labs
►	talk-1-lab-structure
	topic.md
	topic.png
▼	topic03-publishing
►	book-a-gh-pages
►	book-b-moodle
►	talk-1-publishing-to-github
►	talk-2-publishing-to-moodke
	topic.jpg
	topic.md
▼	topic04-portfolios
►	book-portfolio
►	talk-1-portfolio
	topic.md
	topic.png



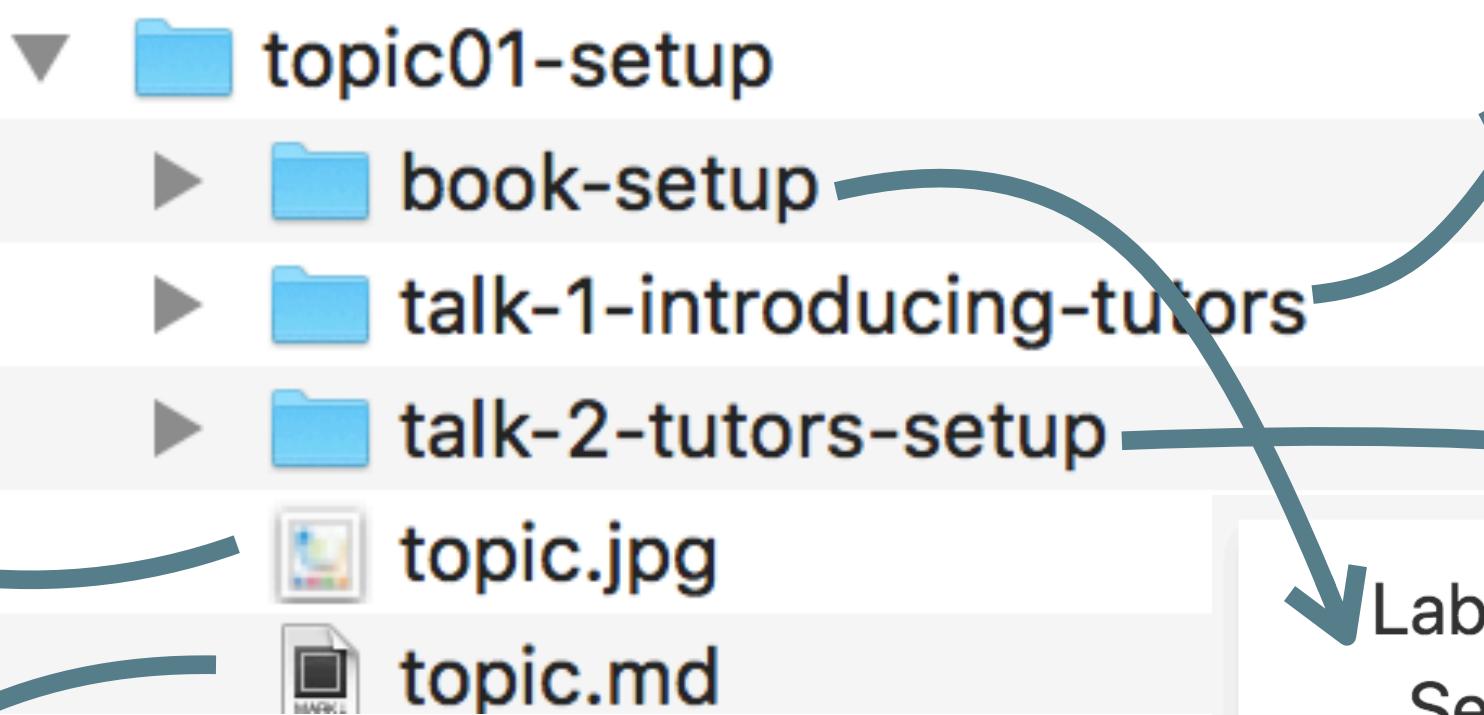
Introducing Tutors



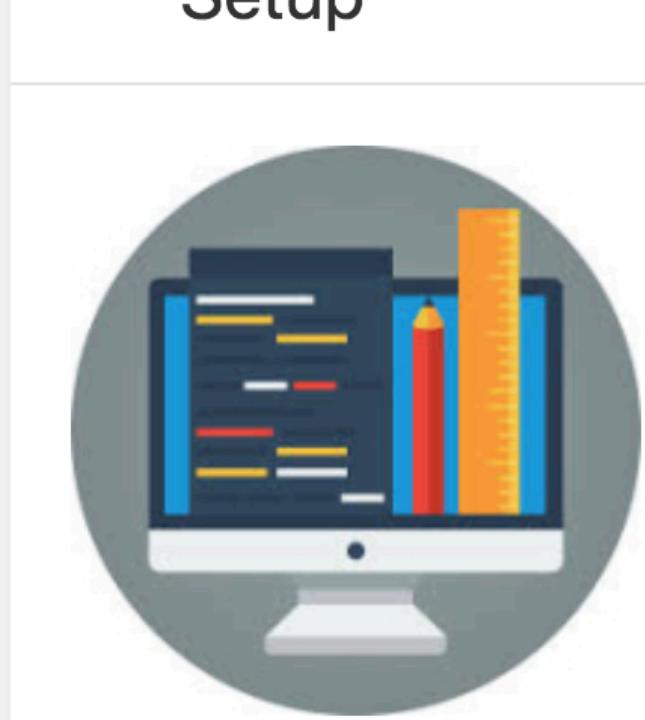
A quick tour of the purpose, structure and features of a course web.

Setup

Setting up and configuring the tools tutors requires, and tutors itself. These are: git, node.js and the sublime text editor.



Lab-01-Setup



Install the tutors command line application and take for a first spin.

Tutors Course Structure



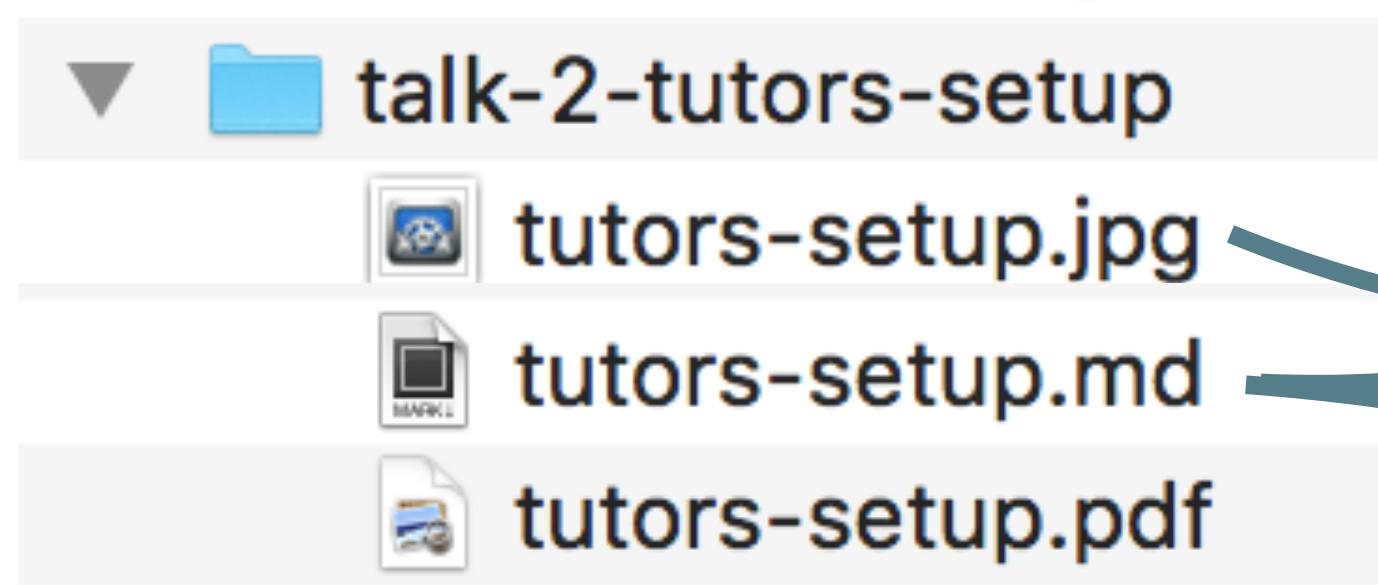
A tour of the structure of a typical tutors course.

Topic structure

Talk structure

all files
same name

- image
- pdf
- markdown



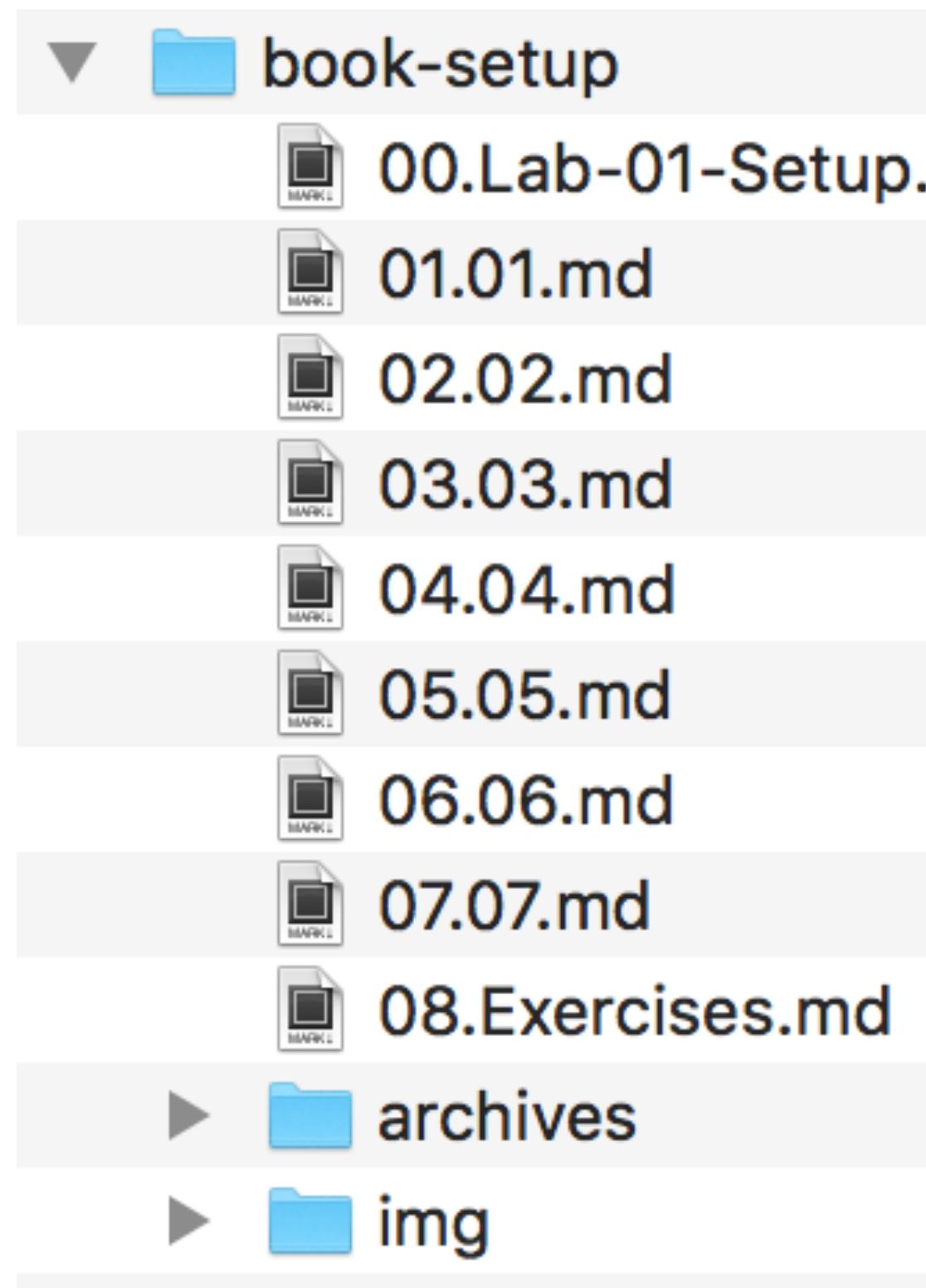
Tutors Course Structure

A tour of the structure of a typical tutors course.

Tutors Setup

Installing the tools needed for tutors. Taking it for a spin.

Lab structure



img

- images used in lab

archives

- zipped archive linked to in labs

One *md* file per step

The terminal window shows the following output:

```
Setup Lab-01-Setup 01 02 03 04 05 06 07 08 Exercises
```

Generate a Course

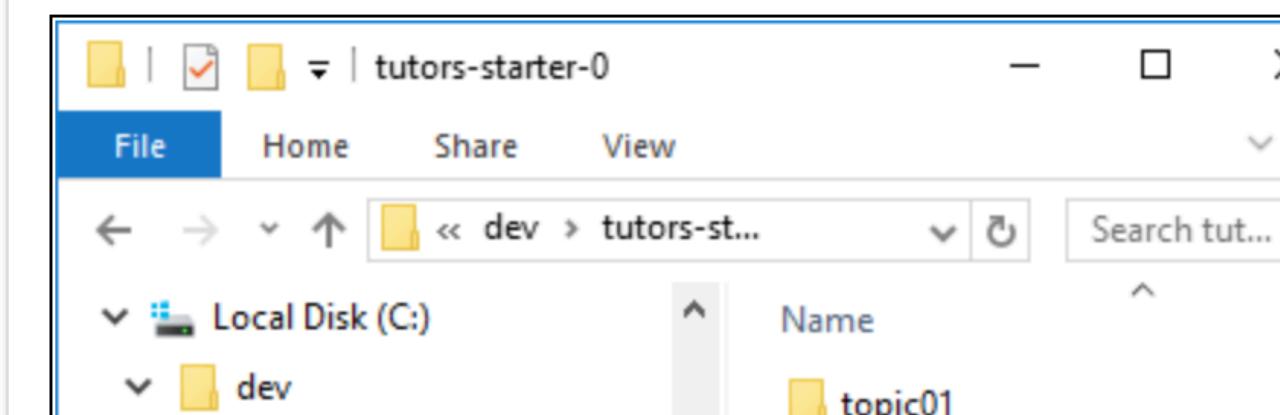
The simplest way to get started with tutors is to use the `new` command to generate a template course:

```
tutors new
```

This should respond with:

```
Creating new template course...
Cloning into 'tutors-starter-0'...
Next steps...
cd into tutors-starter-0 and run "tutors" again
This will generate the course web in "tutors-starter/public-site"
```

The command will have generated a new folder: `tutors-starter-0`, populated with a sample/template course:



Generate a Course

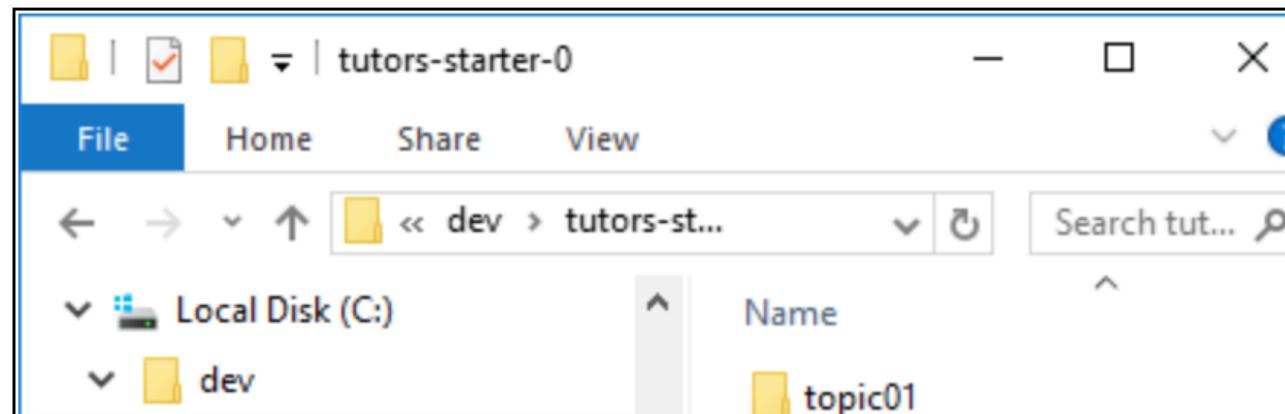
The simplest way to get started with tutors is to use the `new` command to generate a template course:

```
tutors new
```

This should respond with:

```
Creating new template course...
Cloning into 'tutors-starter-0'...
Next steps...
cd into tutors-starter-0 and run "tutors" again
This will generate the course web in "tutors-starter/public-site"
```

The command will have generated a new folder: `tutors-starter-0`, populated with a sample course:



Each Lab written in Markdown

Generate a Course

The simplest way to get started with tutors is to use the `new` command to generate a template course:

~~~

```
tutors new
```

~~~

This should respond with:

~~~

```
Creating new template course...
```

```
Cloning into 'tutors-starter-0'...
```

Next steps...

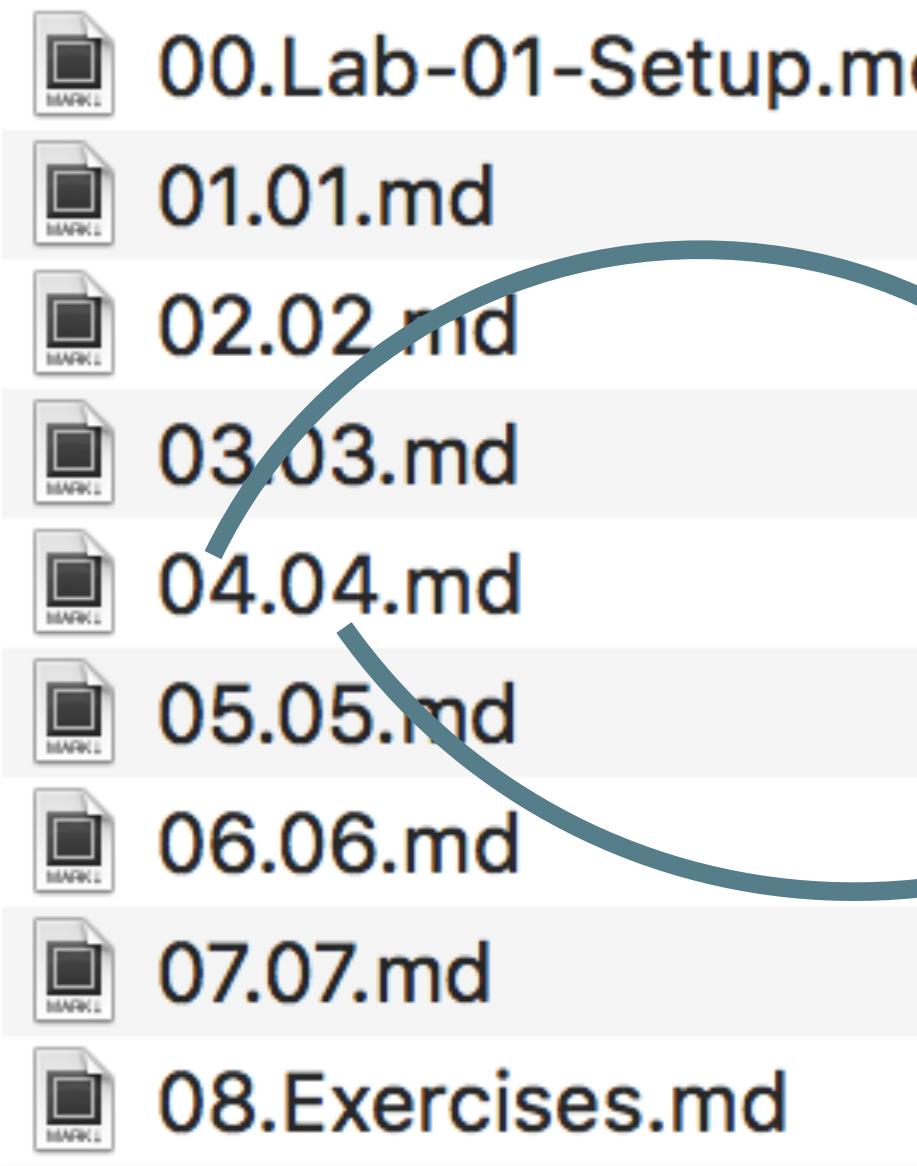
```
cd into tutors-starter-0 and run "tutors" again
```

```
This will generate the course web in "tutors-
starter/public-site"
```

~~~

The command will have generated a new folder: `'tutors-starter-0'`, populated with a sample/template course:

lab menu bar



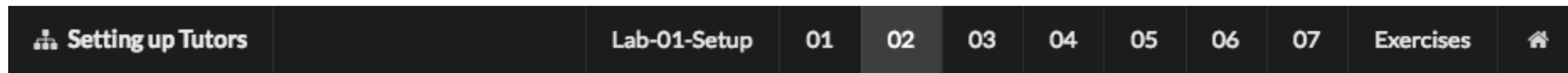
XX.YY.md

XX

- must be a 2 digit number

YY

- can be any string
- .md
- must me .md



Link to
TOC of
all labs

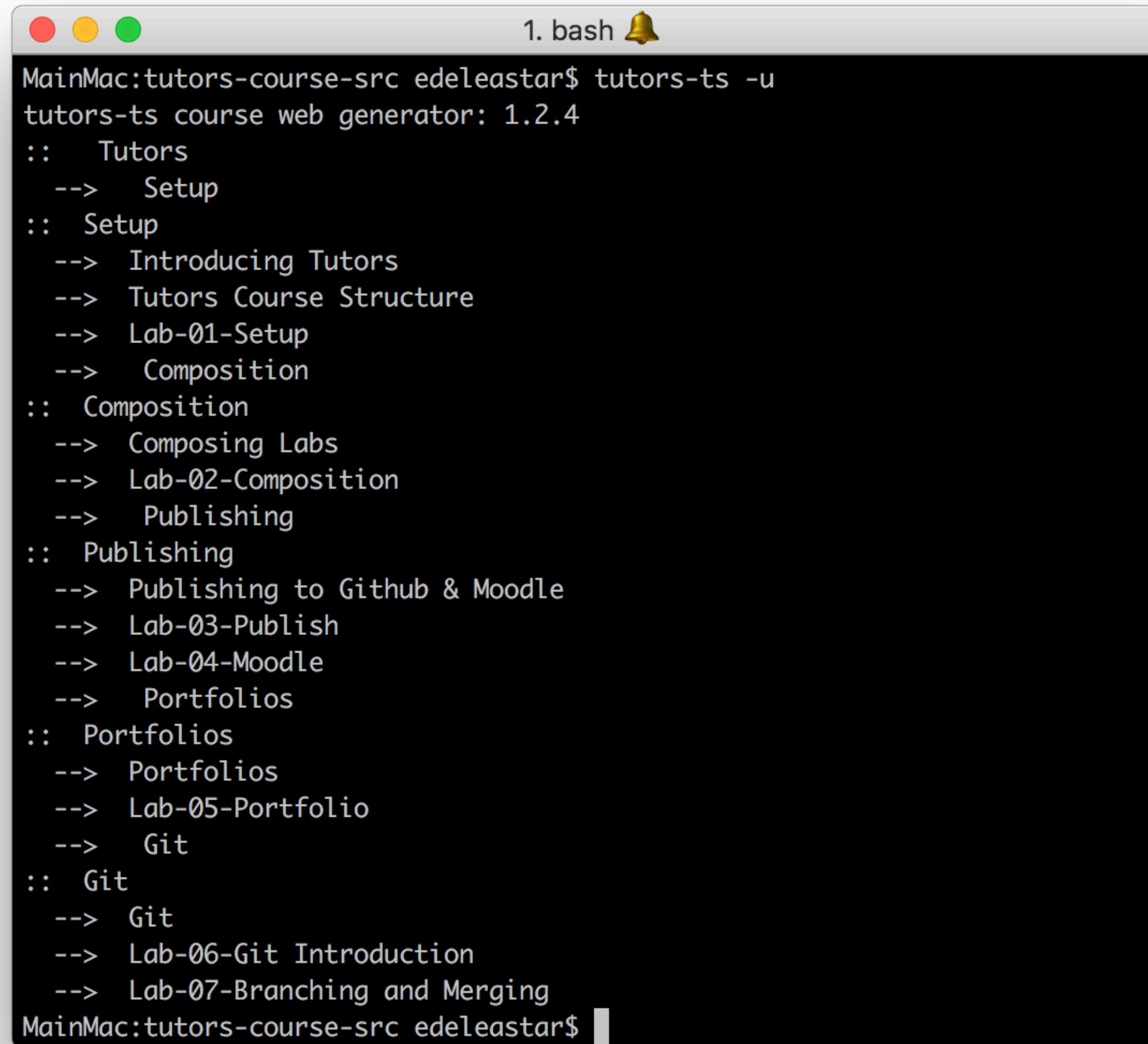
Link to
Parent
Topic

First step,
includes
lab name

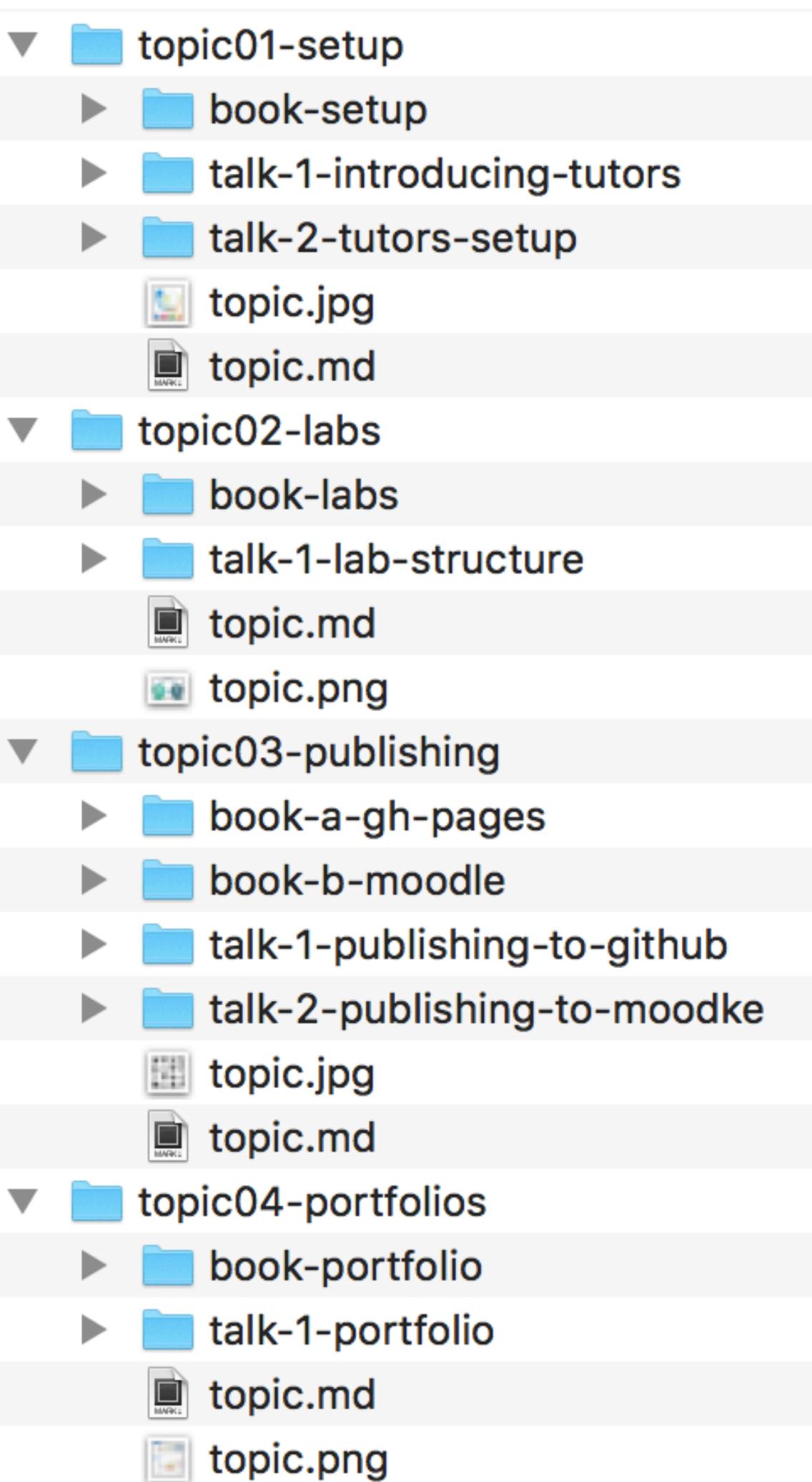
YY is used as
step name in
the menubar

Link to
course
home page

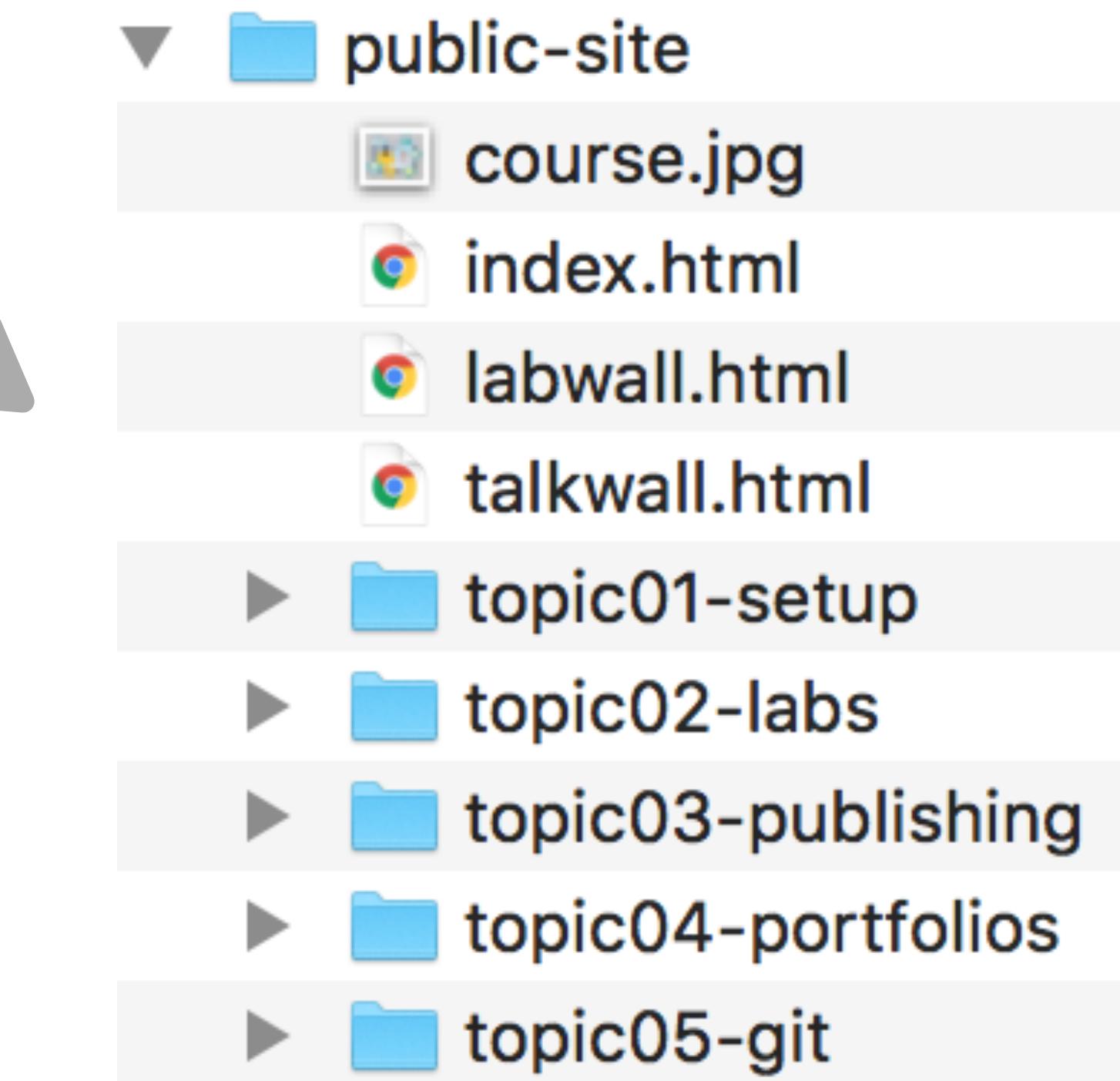
‘tutors’ command generates to ‘public-site’ folder



MainMac:tutors-course-src edeleastar\$ tutors-ts -u
tutors-ts course web generator: 1.2.4
:: Tutors
--> Setup
:: Setup
--> Introducing Tutors
--> Tutors Course Structure
--> Lab-01-Setup
--> Composition
:: Composition
--> Composing Labs
--> Lab-02-Composition
--> Publishing
:: Publishing
--> Publishing to Github & Moodle
--> Lab-03-Publish
--> Lab-04-Moodle
--> Portfolios
:: Portfolios
--> Portfolios
--> Lab-05-Portfolio
--> Git
:: Git
--> Git
--> Lab-06-Git Introduction
--> Lab-07-Branching and Merging
MainMac:tutors-course-src edeleastar\$



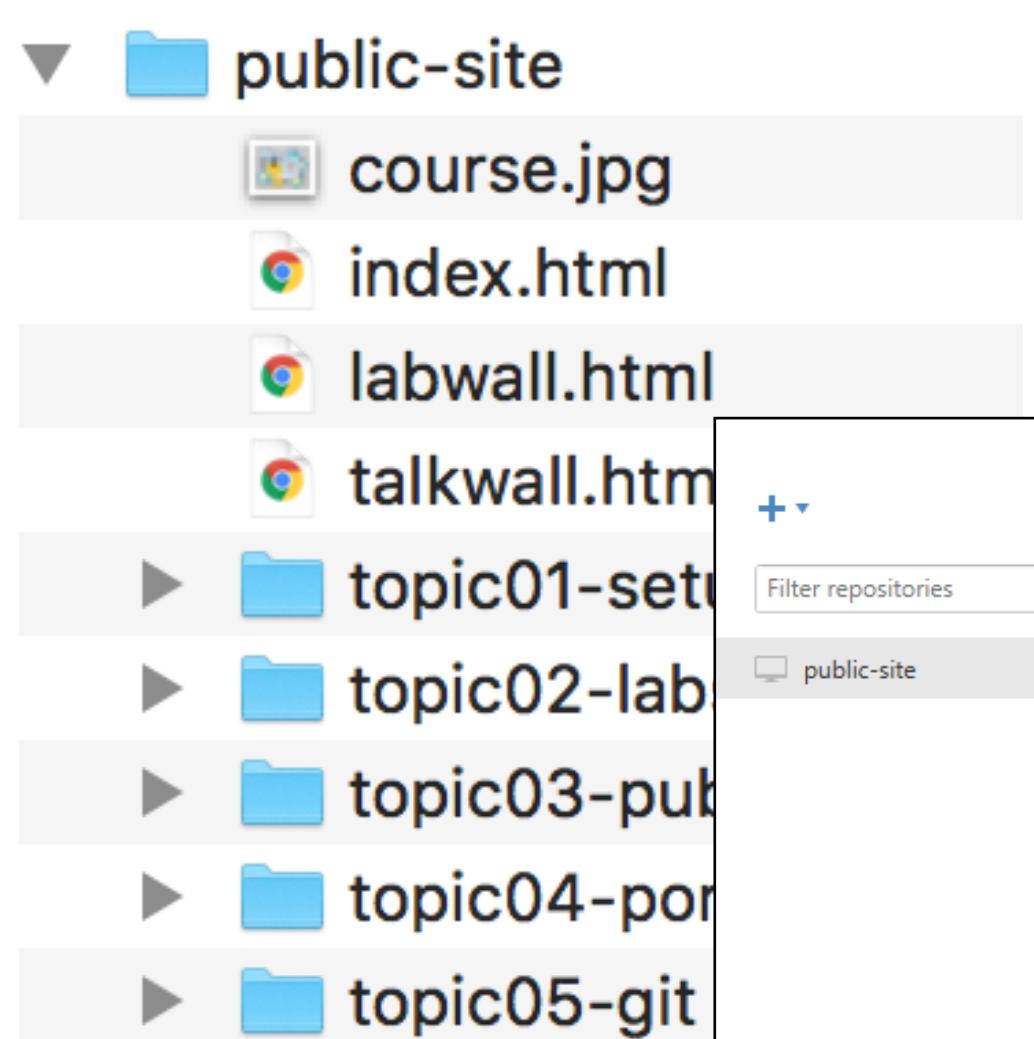
tutors
command



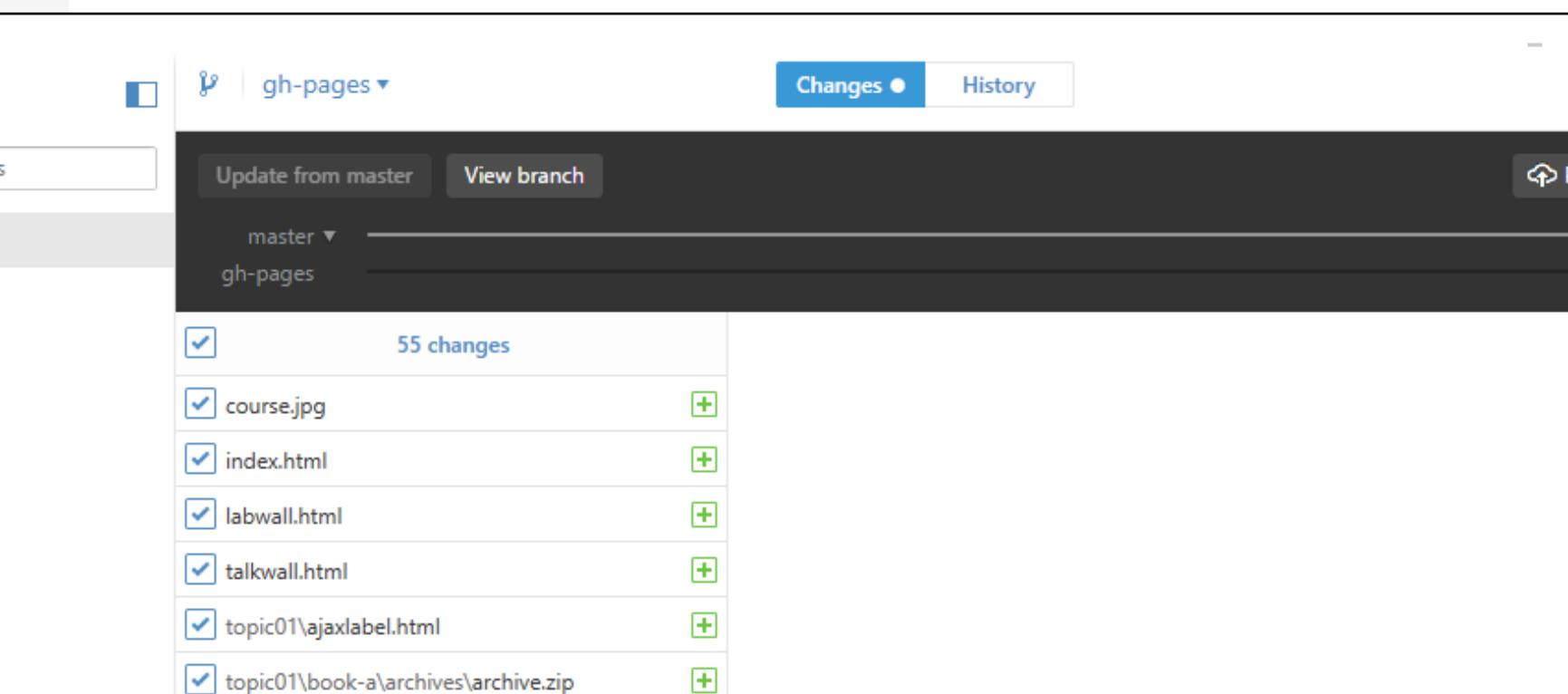
public-site is a ‘static’ web site

easier to publish as it does not require a
Content Management System

Publishing



folder



git desktop

The image displays a grid of four cards, each representing a different aspect of the course setup:

- Tutors**: Eamonn de Leastar (edeleastar@wit.ie)
- Setup**: Set up and configuring the tools tutors requires, and tutors itself. These are: git, node.js and the sublime text editor.
- Composition**: Explore the structure and contents of Labs. Introduce the basics of Markdown and demonstrate the primary features.
- Publishing**: Publish course to the public Internet using github, and make individual topics available to Moodle.
- Portfolios**: Aggregating multiple modules into a portfolio.

github pages public site

Key Advantages of Static Site Generators

No Requirement for Content Management System

—> Deploy to low cost/free services

Fast, Reliable & Secure

—> Simplified server infrastructure

Version Control for Content

—> Evolve content independently

Enhanced UX

—> Evolve style independently

Simple Integration

—> Outsource community, assessment and media to external best of breed services



Complete Programme Example

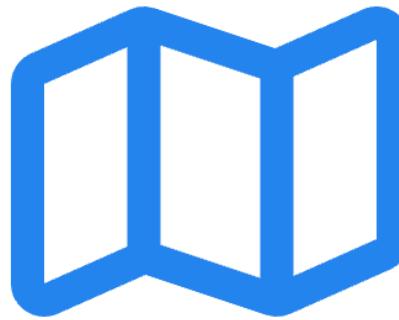
See:

<https://wit-hdip-comp-sci-2018.github.io>

Semester 1

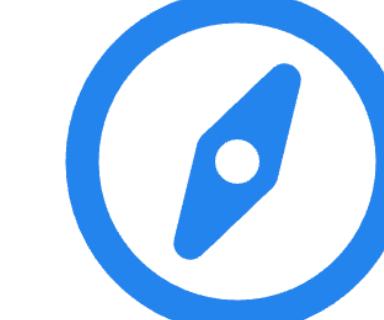
Comprehensive static site in action

Programme
Introduction



structure · philosophy ·
materials · module
introductions

Schedules &
Handbooks



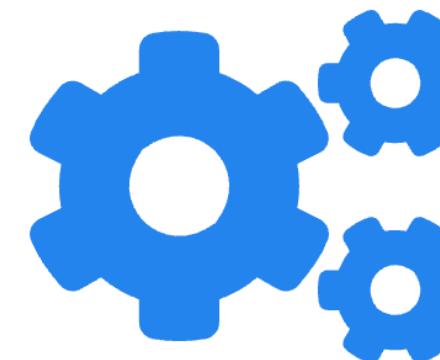
timetables · assessment
schedules · programme
handbooks

Learning to
Learn Online



learning resources · guides ·
tools · howtos

Programming
Fundamentals



algorithms · data structures ·
processing · java · classes ·
libraries

10 Credits

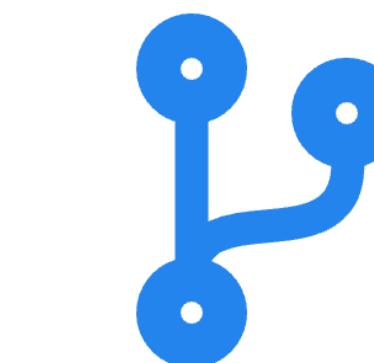
Web
Development



html · css · layout · web apps ·
web frameworks · deployment

5 Credits

ICT Skills



javascript · node · express · git
· github · glitch

5 Credits

Lab-1.1: Editing HTML

editor · files · text · tags · browser · reference

Lab-1.2: HTML Structure

Welcome to the App Bundle Store

This store brings you great app bundles every week. We select the best power user apps from a broad range of categories. Whether you are interested in gaming or graphic design, software development or media production - we have the others, delivering you an exciting take on a theme.

Favourites:

- Desktop UI
- Mac OS X
- Windows
- Linux
- iPhone
- iPad
- Kindle
- Mac OS X
- Windows
- Linux
- iPhone
- iPad
- Kindle

Lab-2 CSS Intro

index.html

```
<!DOCTYPE html>
<html>
  <head>
    <title>Starbucks Coffee</title>
    <link href="style.css" type="text/css" rel="stylesheet"/>
  </head>
  <body>
    <h1>Starbucks Coffee</h1>
    <ul>
      <li>Latte, $1.45</li>
      <li>Espresso, $1.25</li>
      <li>Cappuccino, $1.45</li>
      <li>Tea, $1.25</li>
      <li>Hot Chocolate, $1.25</li>
      <li>Smoothie, $1.25</li>
      <li>Smoothie with black tea, spices, milk and honey, $1.75</li>
    </ul>
  </body>
</html>
```

Lab-3a Layout

Welcome to the App Bundle Store

This store brings you great app bundles every week. We select the best power user apps from a broad range of categories. Whether you are interested in gaming or graphic design, software development or media production - we have the others, delivering you an exciting take on a theme.

Favourites:

- Desktop UI
- Mac OS X
- Windows
- Linux
- iPhone
- iPad
- Kindle
- Mac OS X
- Windows
- Linux
- iPhone
- iPad
- Kindle

Lab-3b Multicolumn

Lab-4a Navigation

header · maincontent · navigation · footer · primary · secondary

Lab-5b Templating

Rebuild the IoT web site from thee last lab using templating. This version of the site will aim to significantly reduce the

Lab-5c Templating Nav

Rework the tabbed site from lab 0 using templating.

Module Review

html · css · layout · navigation · templates · apps · mvc · forms · sessions · deployment

Project 1 Specification

Specification for Assignment 1

Project 2 Specification

Specification for Assignment 2

The Nature of the Web

elements · attributes · paths · absolute · relative · nesting · block · inline · labs

HTML Basics

elements · attributes · paths · absolute · relative · nesting · block · inline · labs

HTML Elements

structural elements · head elements · text elements · list elements · image elements · shared attributes

CSS Rules

combining rules · combining selectors · class · id · div

CSS Cascade

rules · class · elements · explicit · inheritance · default · most specific · order

Web Standards Evolution

standards · w3c · whatwg · sgml · xhtml · html5 ·

3: Box Model

HTML5

Taxonomy & Status on January 20, 2013

- W3C Recommendation
- Proposed Recommendation
- Candidate Recommendation
- Last Call
- Working Draft
- Non-W3C Specifications
- Deprecated

Kill WHATWG HTML5 specification

by Sergey Mavrody · BY-SA

1:28:01

4: Navigation, Semantics & Style Guides

Document Type

Use HTML5.

HTML5 (HTML syntax) is preferred for all HTML documents: <!DOCTYPE html>

1:23:25

5: HTML Templates & Deployment

Hosting Company

- To get your pages on the Web, you need a server that actually lives on the Web full-time.
- Find a hosting company and let them worry about the details of keeping a server running.

1:29:54

6: CSS Frameworks

Popular Frameworks

Bootstrap

PureCSS

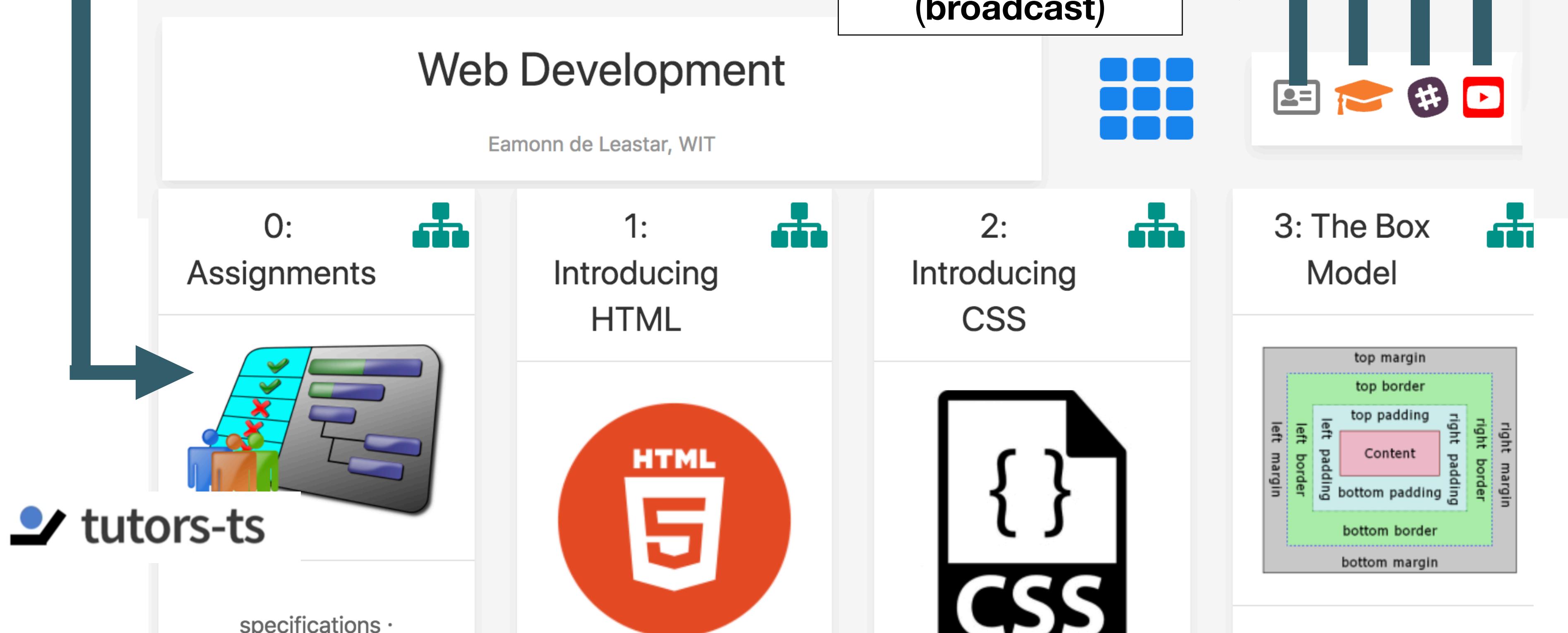
Foundation

http://www.sitepoint.com/5-most-popular-front-end-frameworks-compared/

1:10:10

TutorStack

Statically generated
Instructional Content + Learning Support Services →



Youtube Channel
(media)

Slack
(community &
screensharing)

Moodle
(assessment &
feedback)

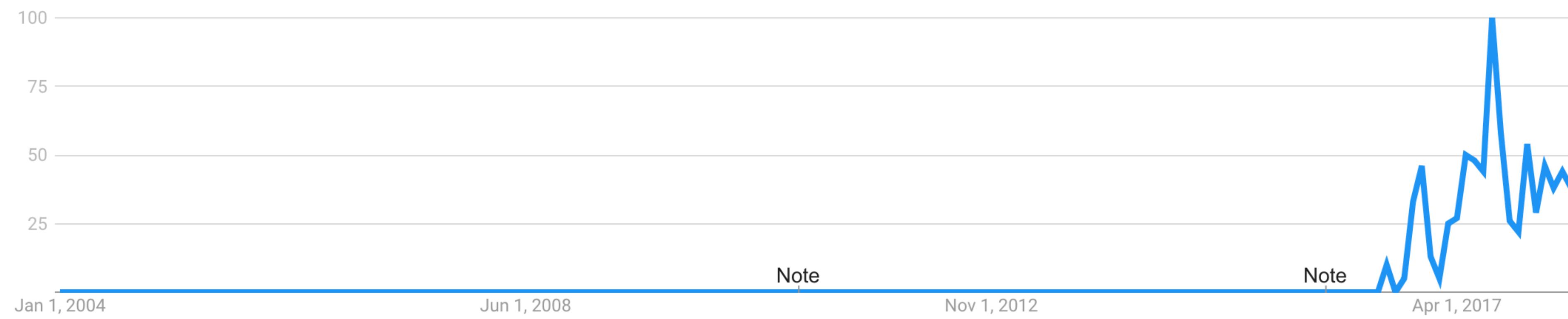
Youtube Live
(broadcast)

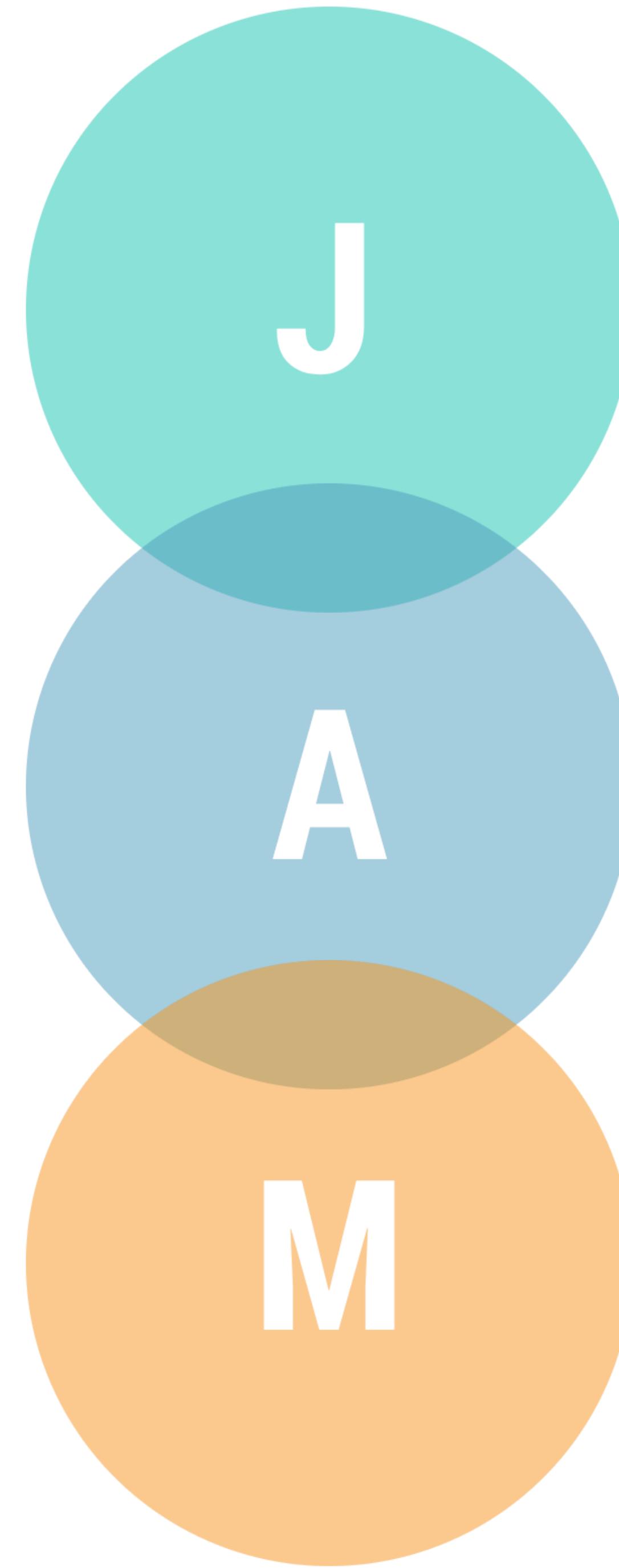
Next Steps....

From Static Site Generators to...

JAMStack
(google it!)

JAMStack





JavaScript

Any dynamic programming during the request/response cycle is handled by JavaScript, running entirely on the client. This could be any frontend framework, library, or even vanilla JavaScript.

APIs

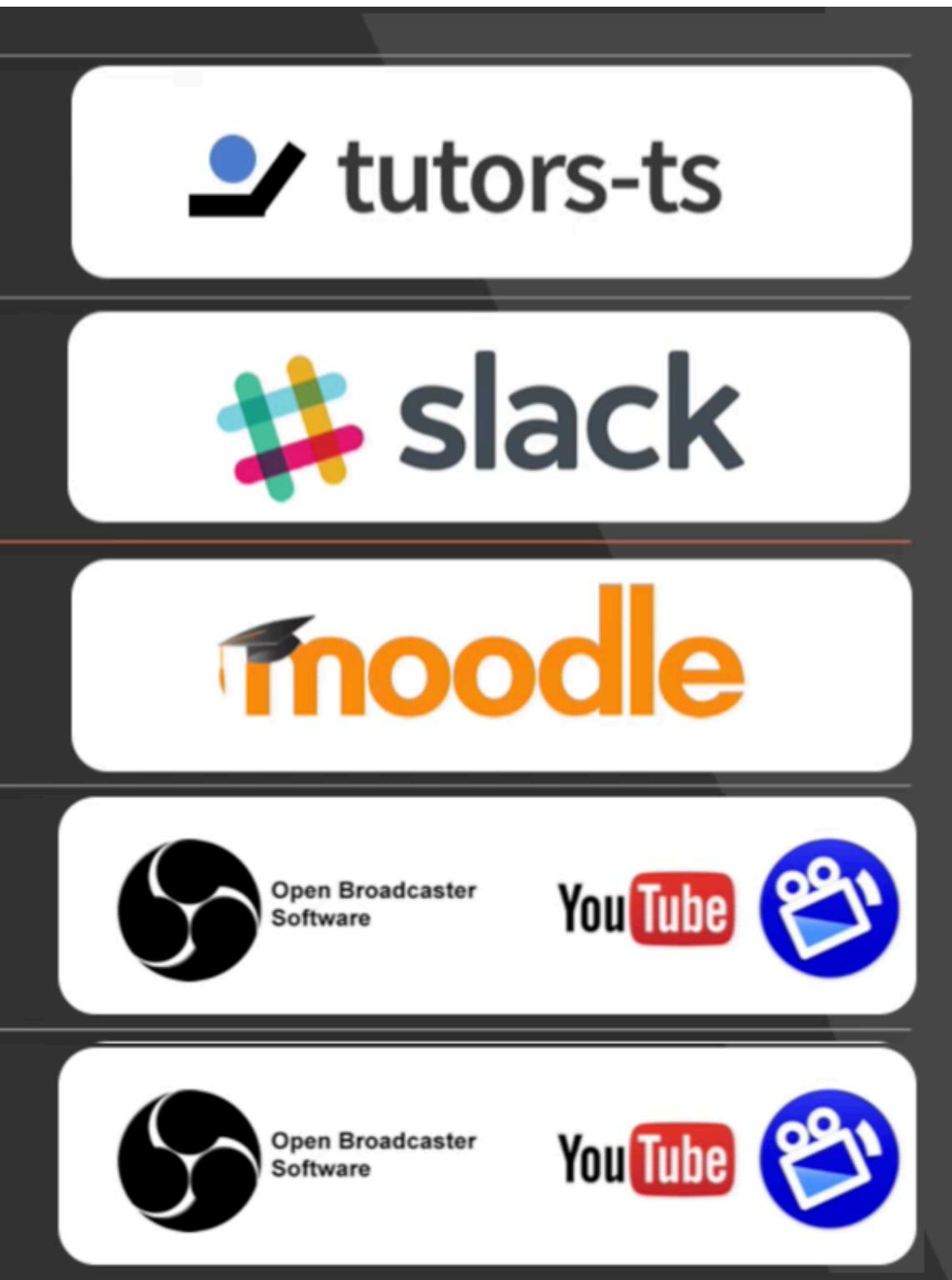
All server-side processes or database actions are abstracted into reusable APIs, accessed over HTTP with JavaScript. These can be custom-built or leverage third-party services.

Markup

Templated markup should be prebuilt at deploy time, usually using a site generator for content sites, or a build tool for web apps.

<https://jamstack.org/>

Custom JAMStack client
to simplify/integrate
TutorStack services

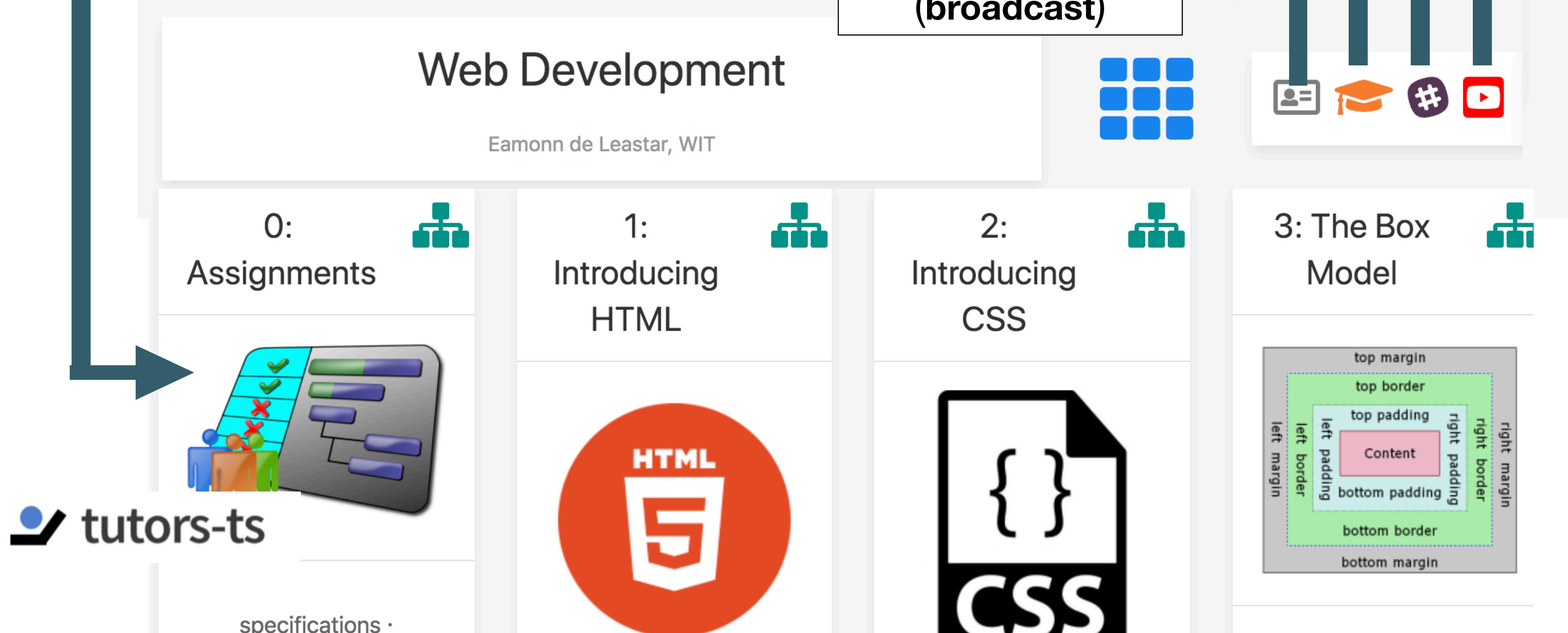


JAM^{STACK}

JAMstack: noun \ˈjam-stak\ Modern web development architecture based on client-side JavaScript, reusable APIs, and prebuilt Markup.

TutorStack

Statically generated
Instructional Content + Learning Support Services →



Youtube Channel
(media)

Slack
(community &
screensharing)

Moodle
(assessment &
feedback)

Youtube Live
(broadcast)