https://bit.ly/40nZX6n

Minimal Computing for Digital Research and Publishing

Christopher Ohge
School of Advanced Study, University of London

SCHOOL OF ADVANCED STUDY
UNIVERSITY OF LONDON

The Dilemmas of Digital Publishing

James Cummings: ‘the publishing of a scholarly digital edition is still a needlessly complicated affair’, even for a straightforward TEI project (‘Opening the Book: Data Models and Distractions in Digital Scholarly Editing’, *International Journal of Digital Humanities* (July 2019), 179–93, https://doi.org/10.1007/s42803-019-00016-6.).

… ‘The current model for successful digital editions is to create a bespoke individual publishing system from the ground up, independently of a publisher, and to receive substantial support from grant funding, university IT departments, a supportive academic administration, dedicated staff, and a community of scholars willing to donate their labour’ (Ohge, *Publishing Scholarly Editions: Archives, Computing, and Experience* (Cambridge UP, 2021), p. 109. https://doi.org/10.1017/9781108766739).

As a result of these difficulties, several projects use content management platforms. Others use minimal computing principles.

https://melville.electroniclibrary.org/

MELVILLE ELECTRONIC LIBRARY

a critical archive

HOME ARCHIVE EDITIONS PROJECTS ABOUT US

HOME

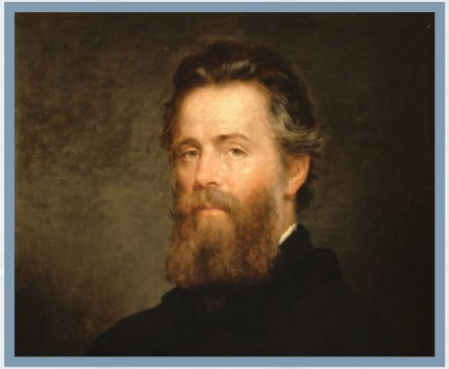
ARCHIVE

BROWSE

EDITIONS

READ

PROJECTS



CREATE

Fluid Text Model Editions released, in beta, c. 2017

MEL EDITIONS

MOBY-DICK

Reading Text | Introduction

BATTLE-PIECES

Reading Text | Introduction

BILLY-BUDD

Reading Text | Introduction

Beginning in 2008, MEL developed its editorial platform, tools, and community in affiliation Hofstra University and Hofstra's Digital Research Center. In 2020, MEL joined the University of Chicago's CEDAR digital initiative and its OCHRE data service.

So far, we have launched three "model" editions: *Versions of Moby-Dick*, *Versions of Battle-Pieces*, and *Versions of Billy Budd*. Given the nature of digital editing, we will be augmenting these editions periodically with new content and updates. Readers can access each edition separately through the Reading Text and Introduction links above.

When fully realized, MEL's "textual core" will consist of a set of integrated scholarly digital editions treating each Melville work as a "fluid text," that is, any written work that exists in multiple versions resulting from authorial, editorial, or adaptive revision. Included in the corpus of a given fluid text are "authorized" works in manuscript, print, and revised editions as well as "non-authorized" adaptive works, such as sources; announced adaptations for stage, film, and opera; children's versions and illustrated editions; translations, and associated art works and music. Each revision or version of a text is a potential opening into the study of Melville's creative process, book history, modern culture, and the interpretation of Melville's writing. For more on MEL's approach, click on Editing Fluid Texts.

INTRODUCTION

- Editing Fluid Texts
- MEL's Model Editions

IN THE WORKS

- *Editing Typee*
- *Editing "Benito Cereno"*
- *Editing "Hawthorne and his Mosses"*
- Editing Melville's Travel Journals
- Melville's Letters and Family Correspondence
- Editing Adaptation and Adaptive Revision

Fluid text editorial theory

Fluid text editing is an attempt to compromise between the major schools of scholarly editing: critical (copy-text) editing, genetic editing, and social(ised) text editing.

- Critical: readers can access a single reading text that does make critical emendations of the ‘base’ version
- Genetic: readers can then examine existing versions as diplomatic texts
- Social: readers also engage with the material aspects of the texts as documents and as books, and, when appropriate, how readers have adapted them

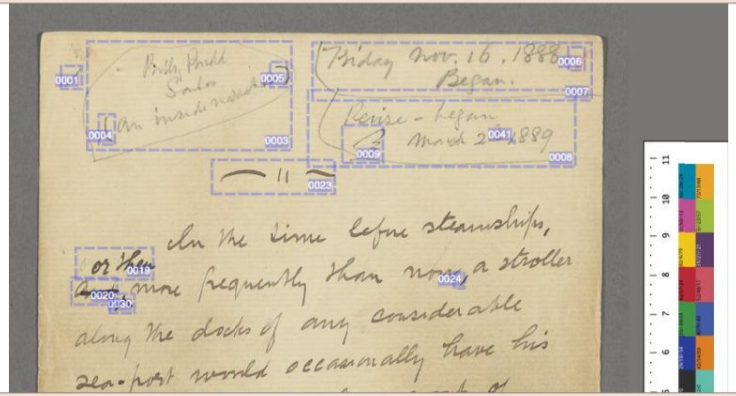
See John Bryant, *The Fluid Text: A Theory of Revision and Editing for Book and Screen* (University of Michigan Press, 2002)

TextLab XML editor

TextLab

signed in as christopherohge • [Log Out] [Admin]

- Versions of BILLY BUDD
  - Dedication
  - Chapter 1
    - leaf 5
    - leaf 7
    - leaf 9
    - leaf 11
    - leaf 13
    - leaf 15
    - leaf 17
    - leaf 19
    - leaf 21
    - leaf 23
    - leaf 25
    - leaf 27
    - leaf 29
    - leaf 31
    - leaf 33
    - leaf 35
    - leaf 37 [DUPLICATE]
    - leaf 39
    - leaf 41
    - leaf 43
    - leaf 45
    - leaf 47
    - leaf 49
    - leaf 51
    - leaf 53
    - leaf 55
    - leaf 57
    - leaf 59 [DUPLICATE]
    - leaf 61



+ New Open

untitled ★ BBImage005JB

Transcription shared by: John Bryant (jbryant)

Copy Relink Preview

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2  <ab>
3  <metamark place="margin(top) margin(left)" function="folio" rend="no-caret _Cg" change="StDa" facs="#img_5-0001" ><add place="inline" rend="no-caret _Cg" hand="#HM" change="StDa"
   facs="#img_5-0001" >1</add></metamark>
4  <metamark place="margin(bottom) margin(left)" function="folio" rend="no-caret _HMp" change="Ht" facs="#img_5-0033" >2</metamark>
5  <metamark facs="#img_5-0003" place="margin(top) margin(left)"><add facs="#img_5-0003" place="above" rend="bubble" hand="#HM">Billy Budd
6  <lb/>Sailor
7  <lb/><add place="inline" rend="no-caret _HMp" hand="#HM" change="StDa" facs="#img_5-0004" >(</add>An inside narrative.<add place="inline" rend="no-caret _HMp" hand="#HM" change="StDa"
   facs="#img_5-0005" >)</add></add></metamark>
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   facs="#img_5-0007" >Friday Nov. 16, 1888.
9  <lb/>Began.</add></metamark>
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   facs="#img_5-0006" >1</add></metamark>
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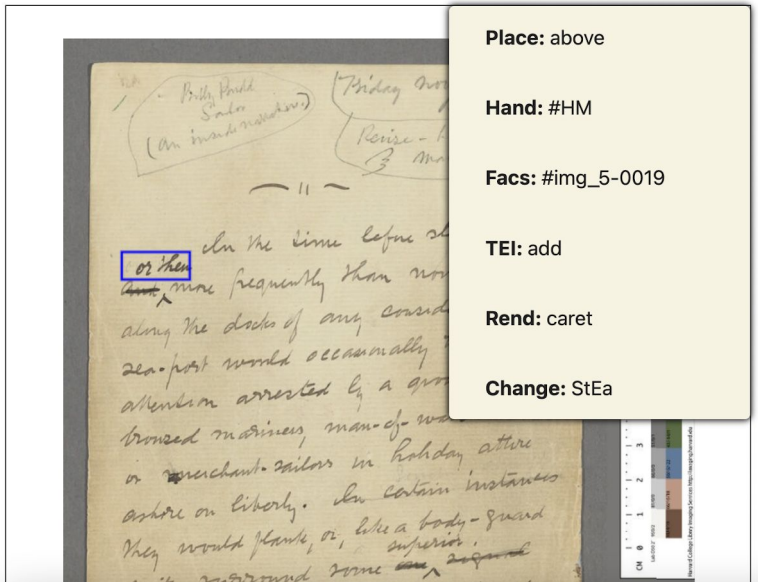
Diplomatic-genetic view

Versions of BILLY BUDD / Chapter 1 / leaf 5

Next Leaf

Diplomatic Base



Place: above

Hand: #HM

Facs: #img_5-0019

TEI: add

Rend: caret

Change: StEa

Altered Text

or then

—//—

In the time before steamships,

or then
~~and~~ ^ more frequently than now , a stroller

along the docks of any considerable

sea-port would occasionally have his

attention arrested by a group of

bronzed mariners, man-of-war's men

Reading Text with revision narrative

Melville Electronic Library

Melville Electronic Library >> Versions of Billy Budd

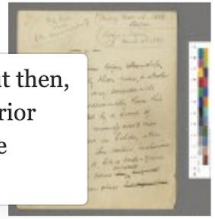
Chapters

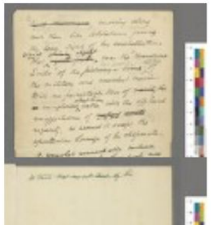
Dedication
Chapter 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Chapter 7
Chapter 8

Chapter 1

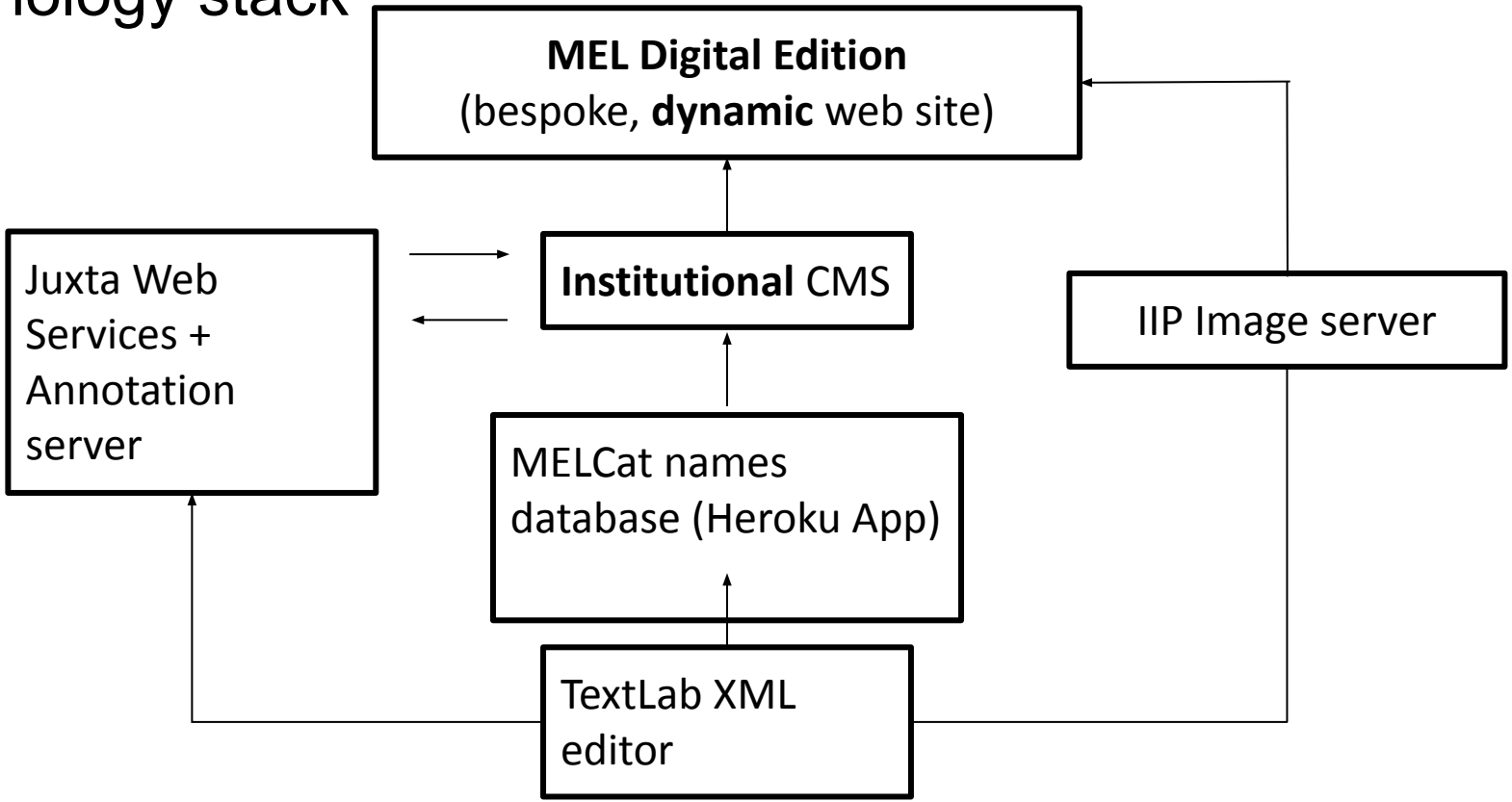
IN THE TIME BEFOR
stroller along the docks c
attention arrested by a gr
merchant-sailors in holid
would flank, or, like a body-guard quite surround some superior figure of their
own class, moving along with them like Aldebaran among the lesser lights of his
constellation. That signal object was the "Handsome Sailor" of the less prosaic
time alike of the military and merchant navies. With no perceptible trace of the
vainglorious about him, rather with the off-hand unaffectedness of natural
regality, he seemed to accept the spontaneous homage of his shipmates.

some superior figure] Originally, HM wrote "some one signal figure" but then, in coordination with revisions at "signal object" below, revised to "superior figure." Click on the associated MS leaf thumbnail, and then click on the Revision Narratives explaining Melville's revisions at this site.

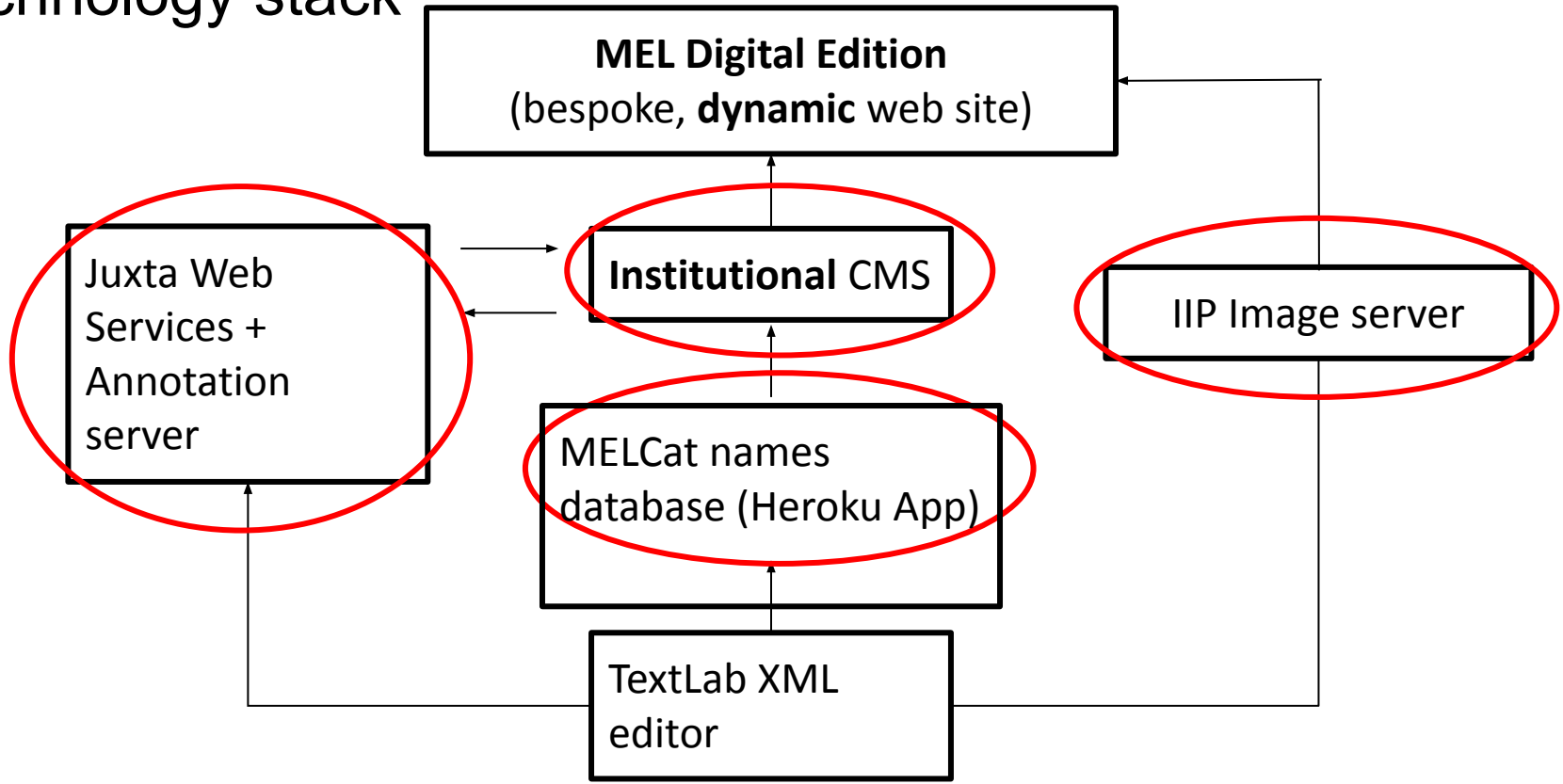




MEL phase 1 (the grant funded phase): technology stack



MEL phase 1 (the grant funded phase): technology stack

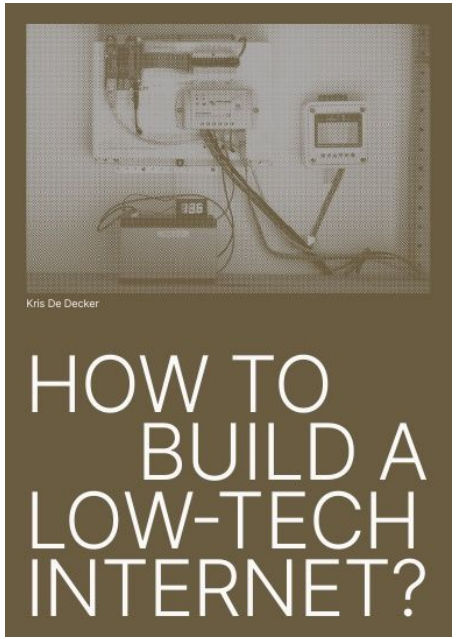


How sustainable is this? Minimal Computing and ‘Low-tech’ publishing

LOW←TECH MAGAZINE

This is a solar-powered website, which means it sometimes goes offline

About | Low-tech Solutions | High-tech Problems | Obsolete Technology | Offline Reading | Archive | Donate | NTM



ROTUNDA

digital humanities climate coalition

Minimal Computing

> *‘We use “minimal computing” to refer to computing done under some set of significant constraints of hardware, software, education, network capacity, power, **or other factors**.’*
>
> GO:DH Minimal Computing group

This section introduces you to minimal computing principles. Minimal computing is a set of principles and practices that aim to reduce both environmental impact and barriers to access and engagement. It offers an important set of thinking tools to make responsible, frugal, and nuanced digital decisions.

Key Recommendations

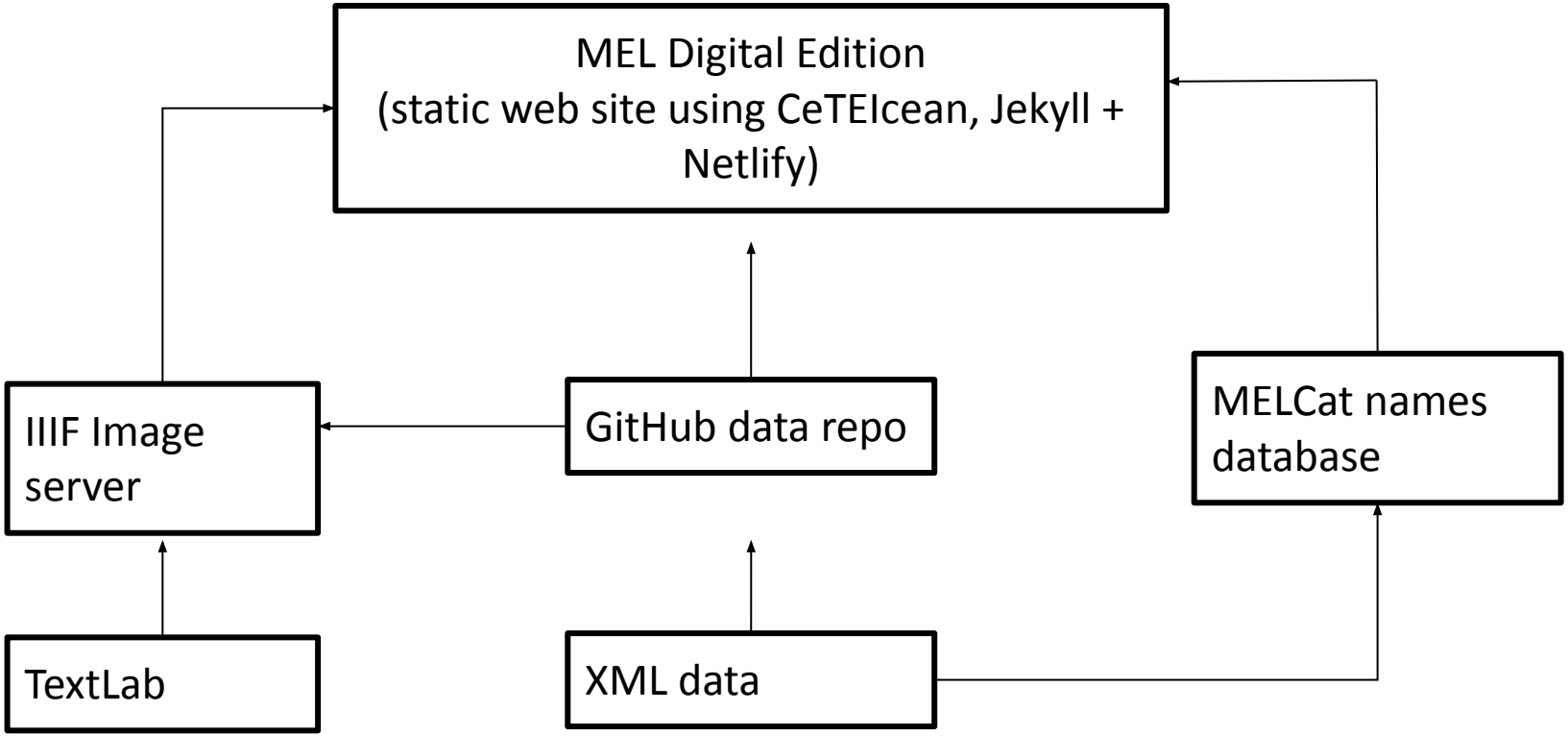
- Consider ways to reduce digital dependencies (software stacks), and in particular whether static websites and minimalist content management systems are appropriate for your project.
- When building and editing websites, use minimal web design principles and try to reduce client-side dynamic features.
- Evaluate green web hosting options.

The Making and Knowing Project

Secrets of Craft and Nature

A Digital Critical Edition of BnF Ms. Fr. 640

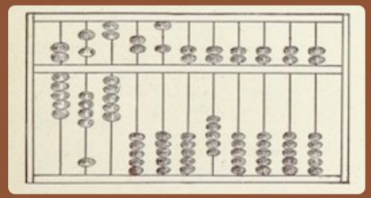
MEL phase 2.1: the first minimal computing stack (c. 2019)



Principles of Minimal Computing

http://go-dh.github.io/mincomp/thoughts/2016/10/03/tldr/

Minimal Computing



a working group of GO::DH

About
News & Announcements
Thought Pieces
Links & Resources
Mailing List
People

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Home

Minimal Definitions (tl;dr version)

by Jentery Sayers - 03 Oct 2016

I've been researching the various uses and implications of "minimal computing." What does it mean? According to whom? For whom? Under what assumptions? Yesterday, I wrote a rather unpolished thought piece on the topic, but below is the tl;dr version of my observations.

Minimal computing appears to prompt these fundamental questions about choice and necessity: "What do we need?" (see Gil) "What don't we need?" "What do we want?" "What don't we want?"

The brief definitions/perspectives below point to some interesting overlaps and tensions between the multiple aims (stated or not) of minimal computing. For now, tho, I'm listing them here without synthesis, analysis, or any assumption that the list is complete. Soon, I'll add some questions that may emerge from each definition. Feedback is welcome in the meantime. Thank you!

Principles of Minimal Computing (Jentery Sayers)

1. Minimal **commitments**
    a. Learning curve
    b. To increase access and accessibility
2. Minimal **technology stacks**
    a. Design constraint
    b. Dependencies
    c. Obsolescence
3. Minimal **carbon footprint**

This does not mean, however, *minimal labour*!

Principles of Minimal Computing

Alex Gil: the cost of maintenance ‘continues to be one of the main reasons web projects fall by the wayside, or the reason you may be having a hard time getting your library to “support” you in the creation and maintenance of your digital humanities project. These complex systems also demand more computation, increasing our collective carbon footprint [and] … makes these websites slower to access in areas of the world with low-bandwith’.

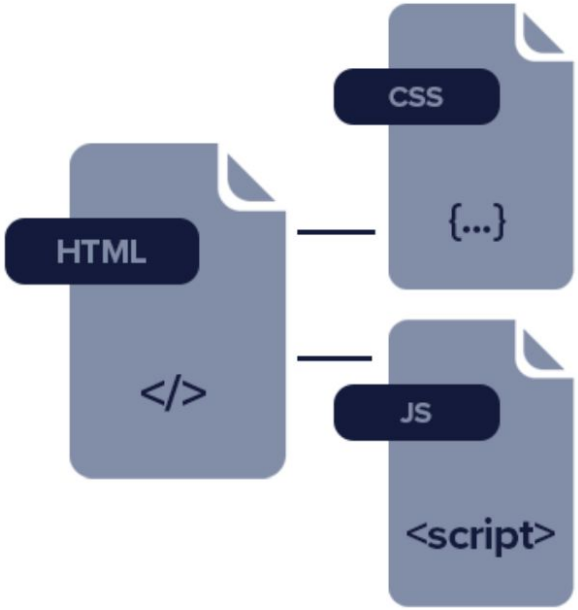
(‘How (and Why) to Generate a Static Website Using Jekyll’, *Chronicle of Higher Education*, 31 August 2015 https://www.chronicle.com/blogs/profhacker/jekyll1/60913)

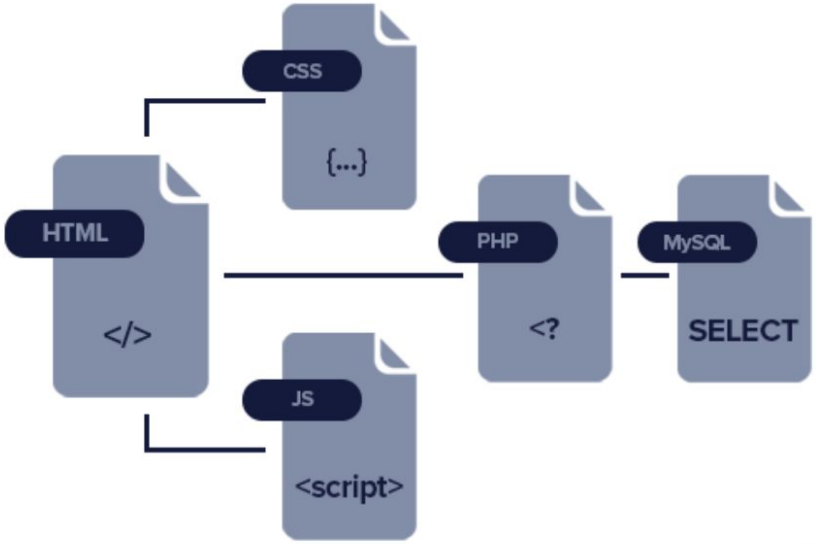
DYNAMIC SITES

- Many pieces/points of failure
- Security vulnerabilities
- Resource heavy ($$ hosting)
- Maintenance
- Performance

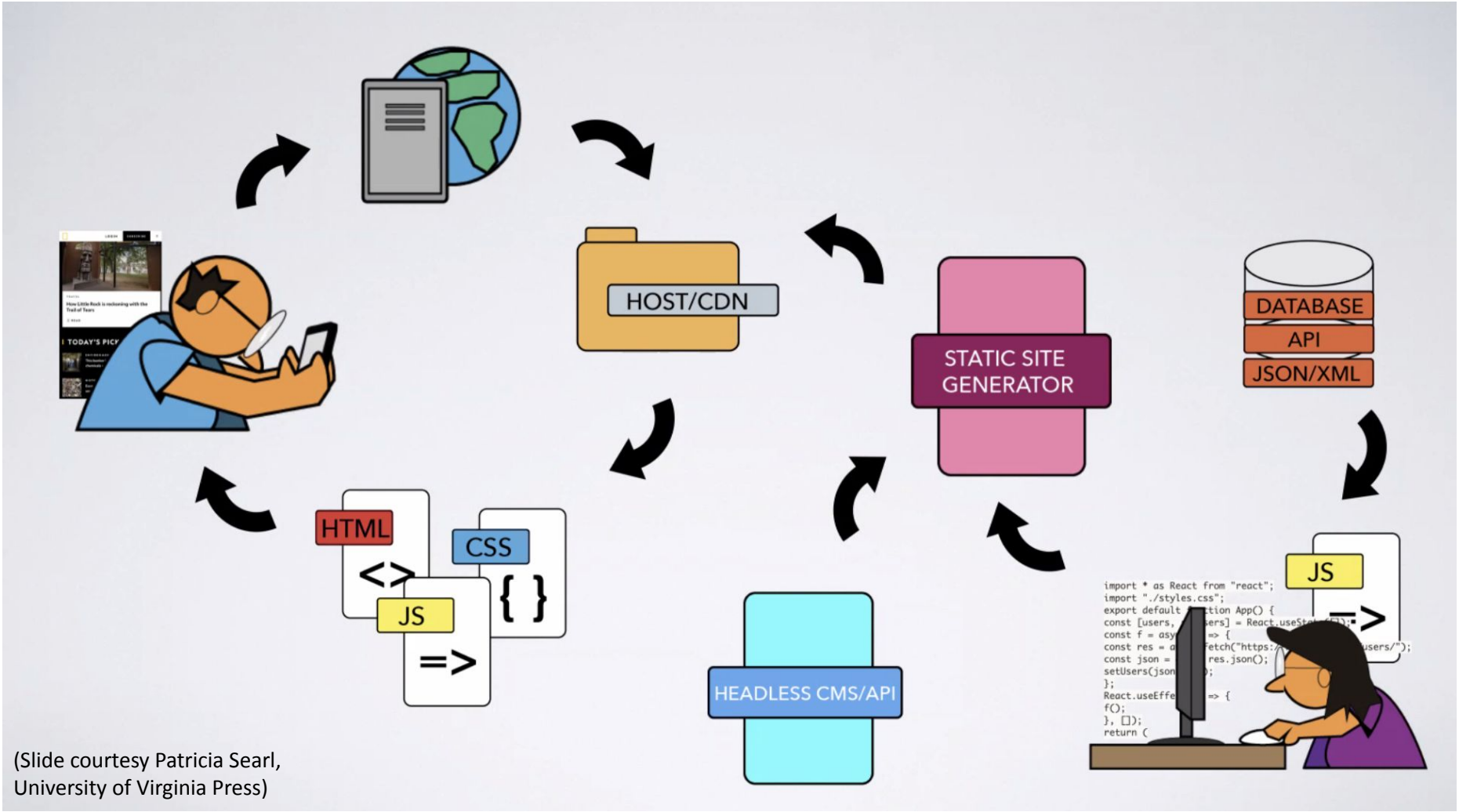
(Slide courtesy Patricia Searl, University of Virginia Press)

Static Website

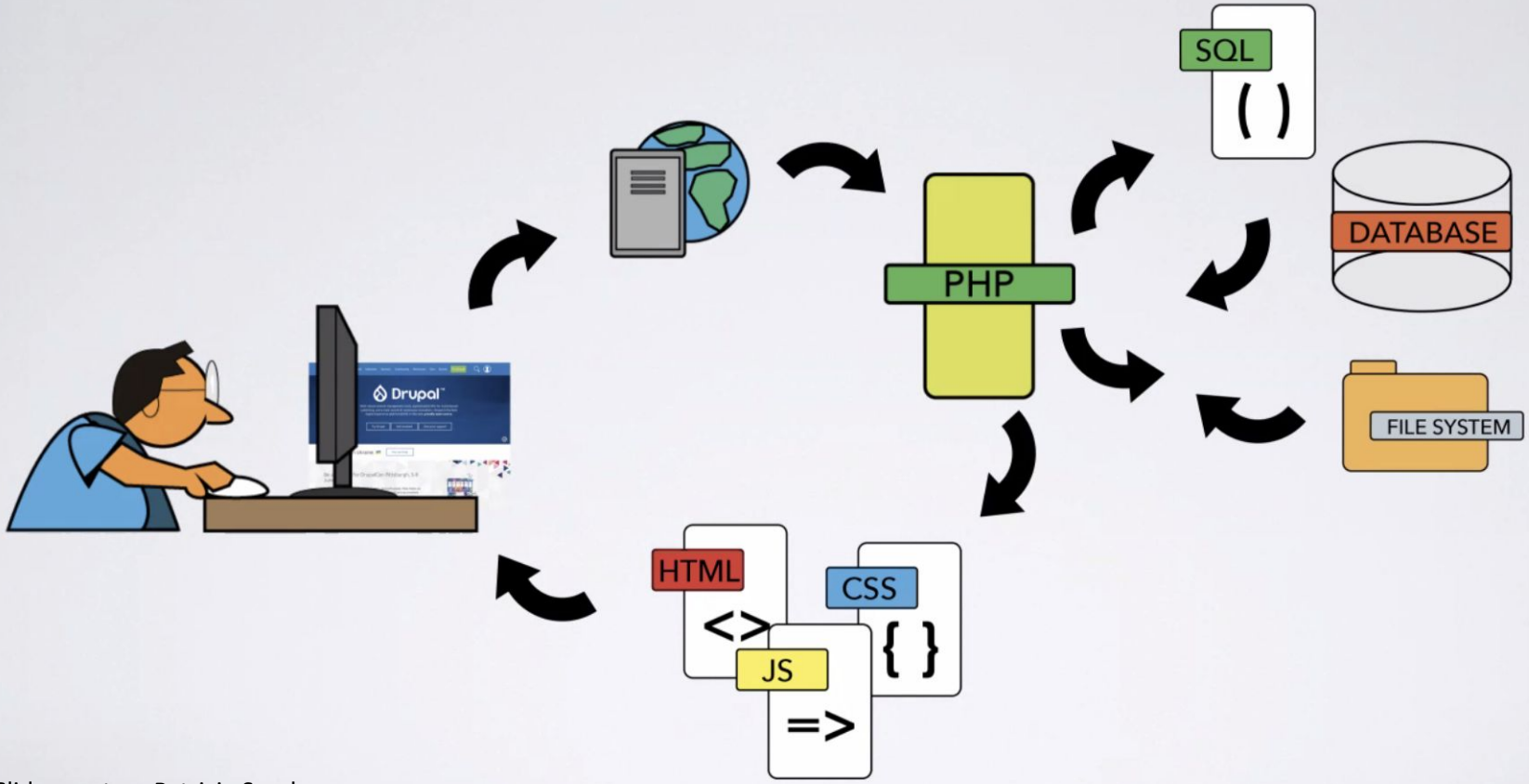




Dynamic Website



(Slide courtesy Patricia Searl, University of Virginia Press)



(Slide courtesy Patricia Searl,
University of Virginia Press)

CODE

Static

Content is hard-coded on the page

Dynamic

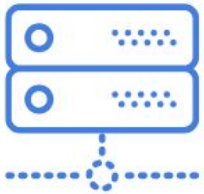
Dynamic references to content that are controlled externally with a CMS or database

DELIVERY

Static

Deliver static code that is pre-rendered (usually via a Content Delivery Network)

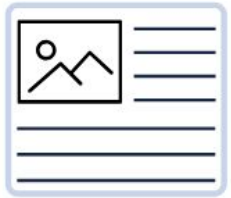
Dynamic



Code is rendered in real time by the server

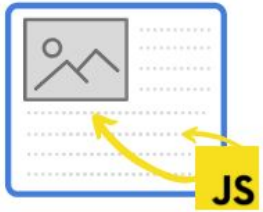
CLIENT BROWSER

Static



Page doesn't change; remains static for all who access it

Dynamic



Use JavaScript to change page content, animation, etc. in realtime

Register for Jamstack Conf! Join us in San Francisco or online, November 7-8.

Jamstack

- Home
- Jamstack Conf 2022
- Glossary
- Women of Jamstack
- Jamstack TV
- Site Generators
- Headless CMS
- Community
- Community Survey
  - Demographics
  - Jamstack adoption
  - Workflows
  - Technology choices
  - Conclusion

Connect with us

HUGO NEXT.JS Gatsby

What is Jamstack?

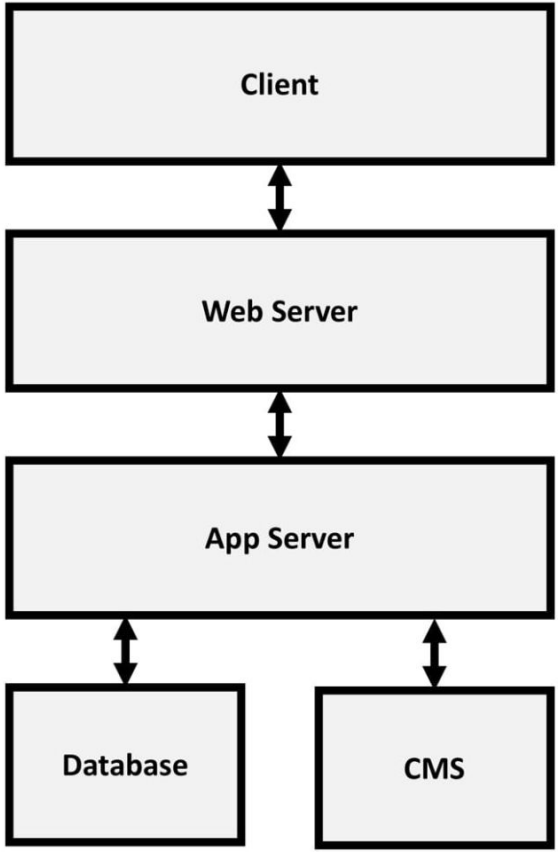
Jamstack is an architectural approach that decouples the web experience layer from data and business logic, improving flexibility, scalability, performance, and maintainability.

Jamstack removes the need for business logic to dictate the web experience.

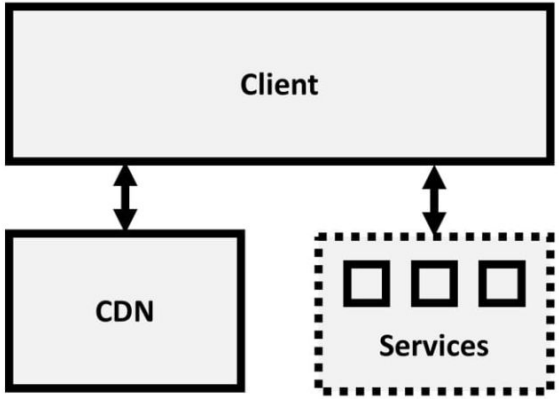
It enables a composable architecture for the web where custom logic and 3rd party services are consumed through APIs.

https://jamstack.org/

Traditional Web

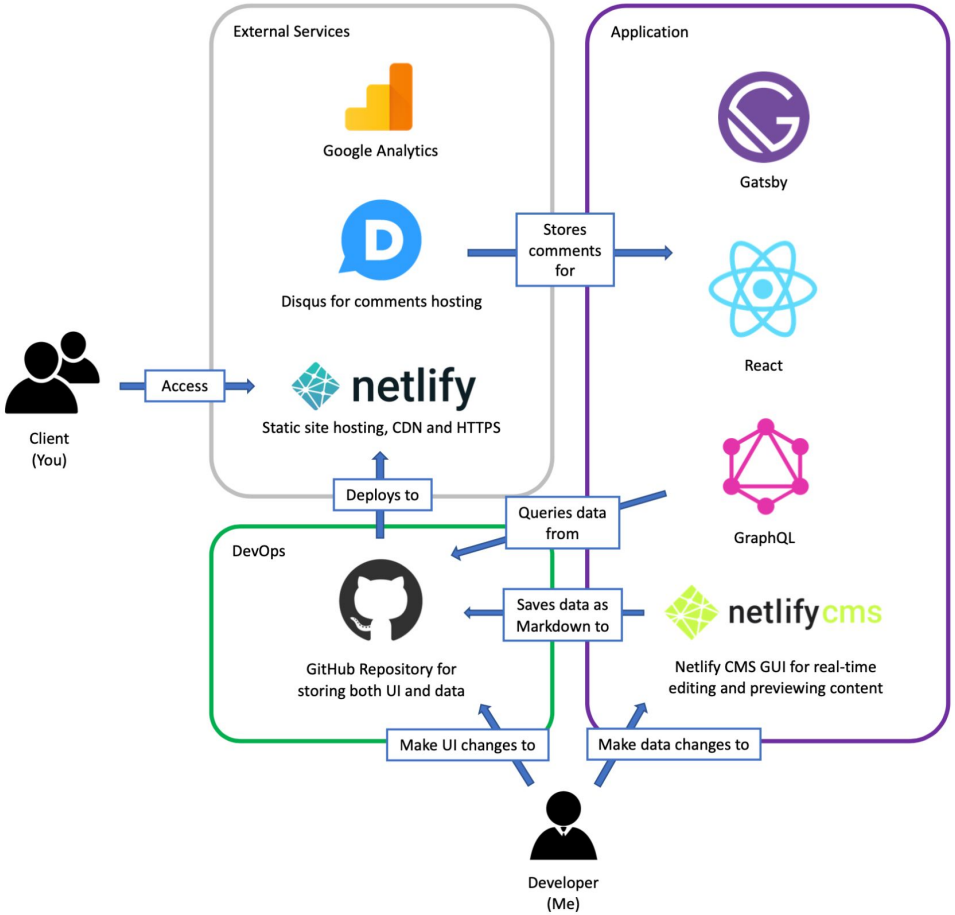


JAMstack



J	**Javascript**
A	**APIs**
M	**Markup**
Stack	

https://www.tiuweehan.com/blog/2020-09-06-this-website-is-built-on-the-jamstack/



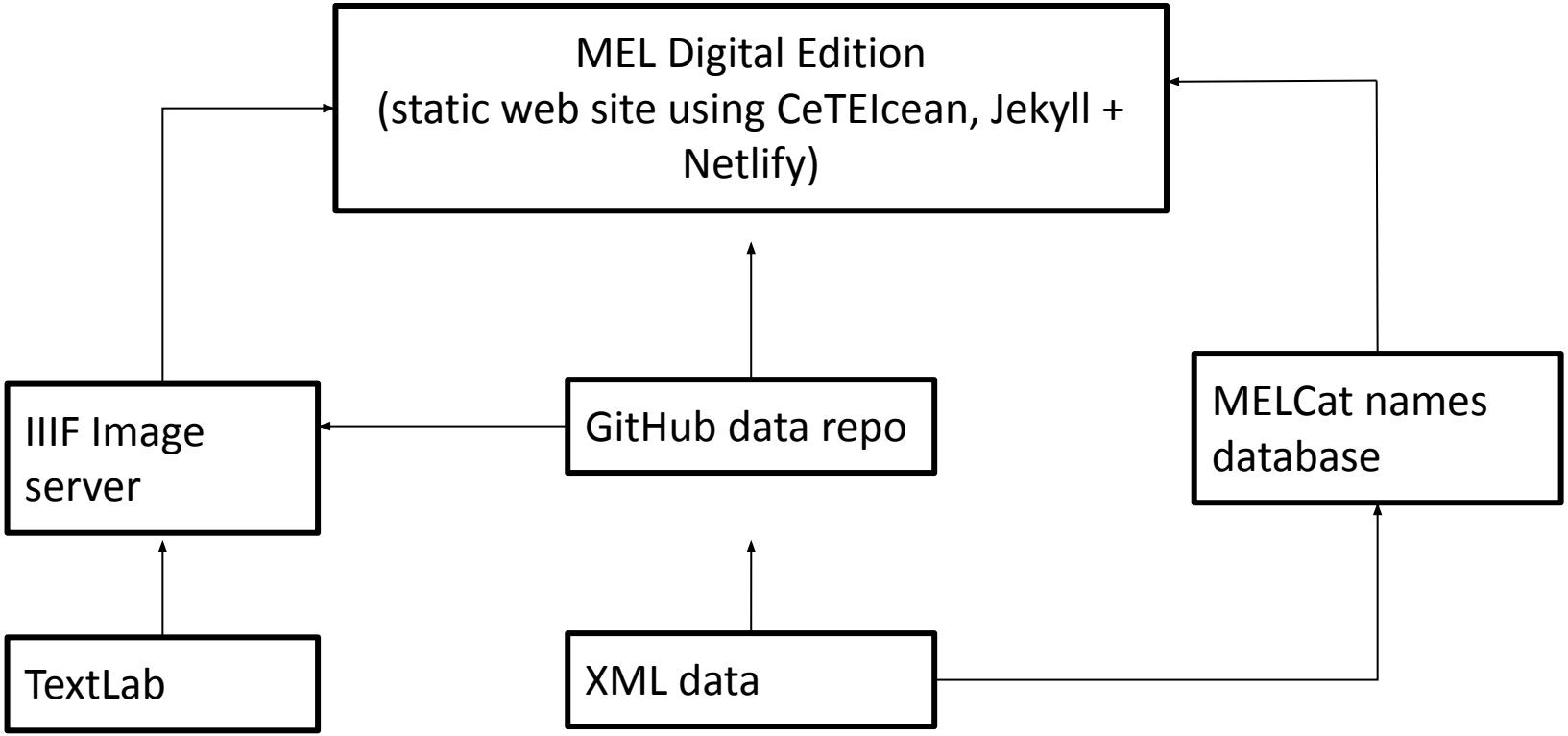
Minimal workflow

GitHub repository:

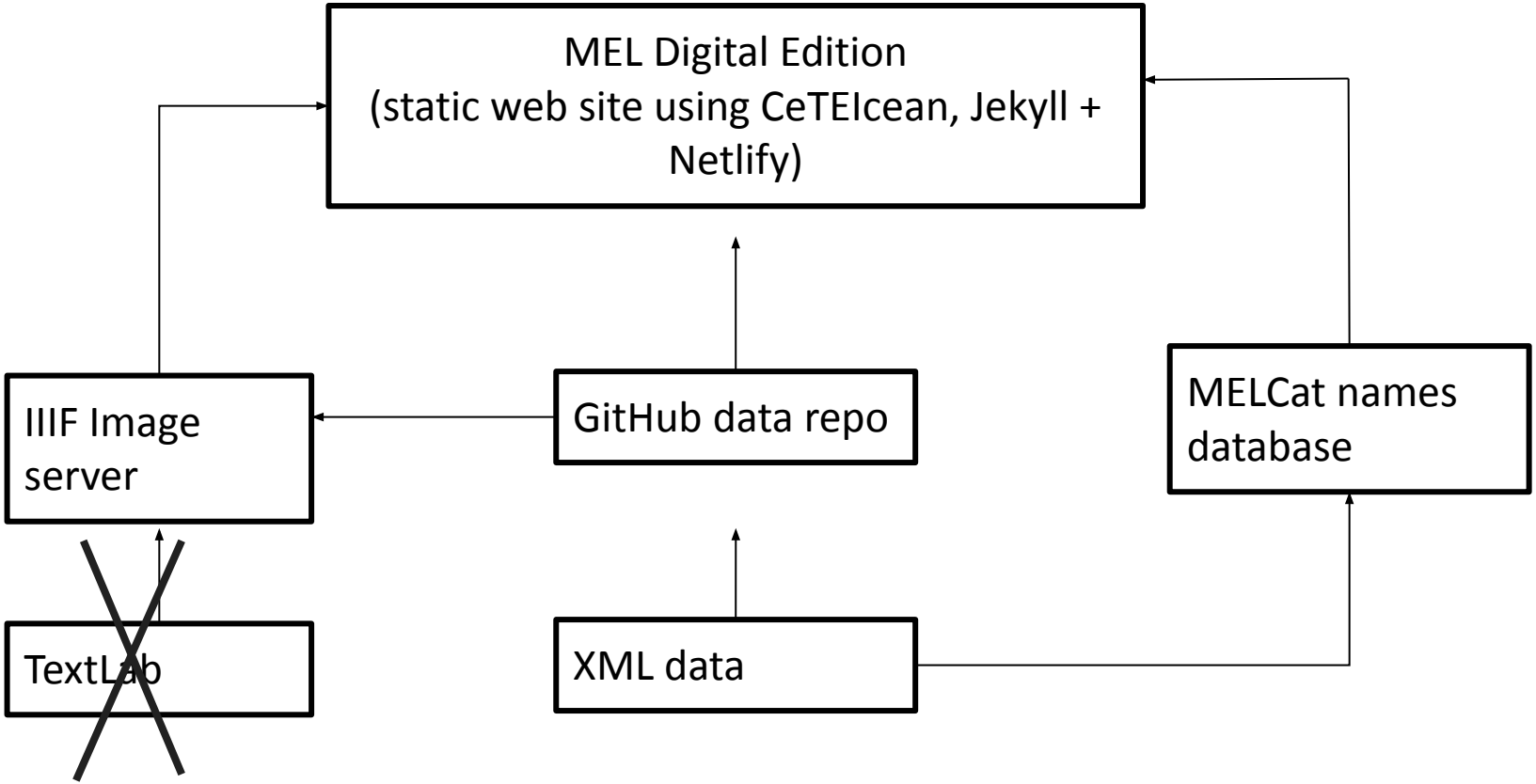
- All edition source data in TEI XML
- Some images (others are in IIIF manifests)
- Markdown and HTML files for web pages
- CeTEIcean scripts for processing TEI in the browser
- Jeyll-specific site directories

Data in GitHub is bundled into static assets using Jekyll, and that is served on Netflify CMS through GitHub Actions.

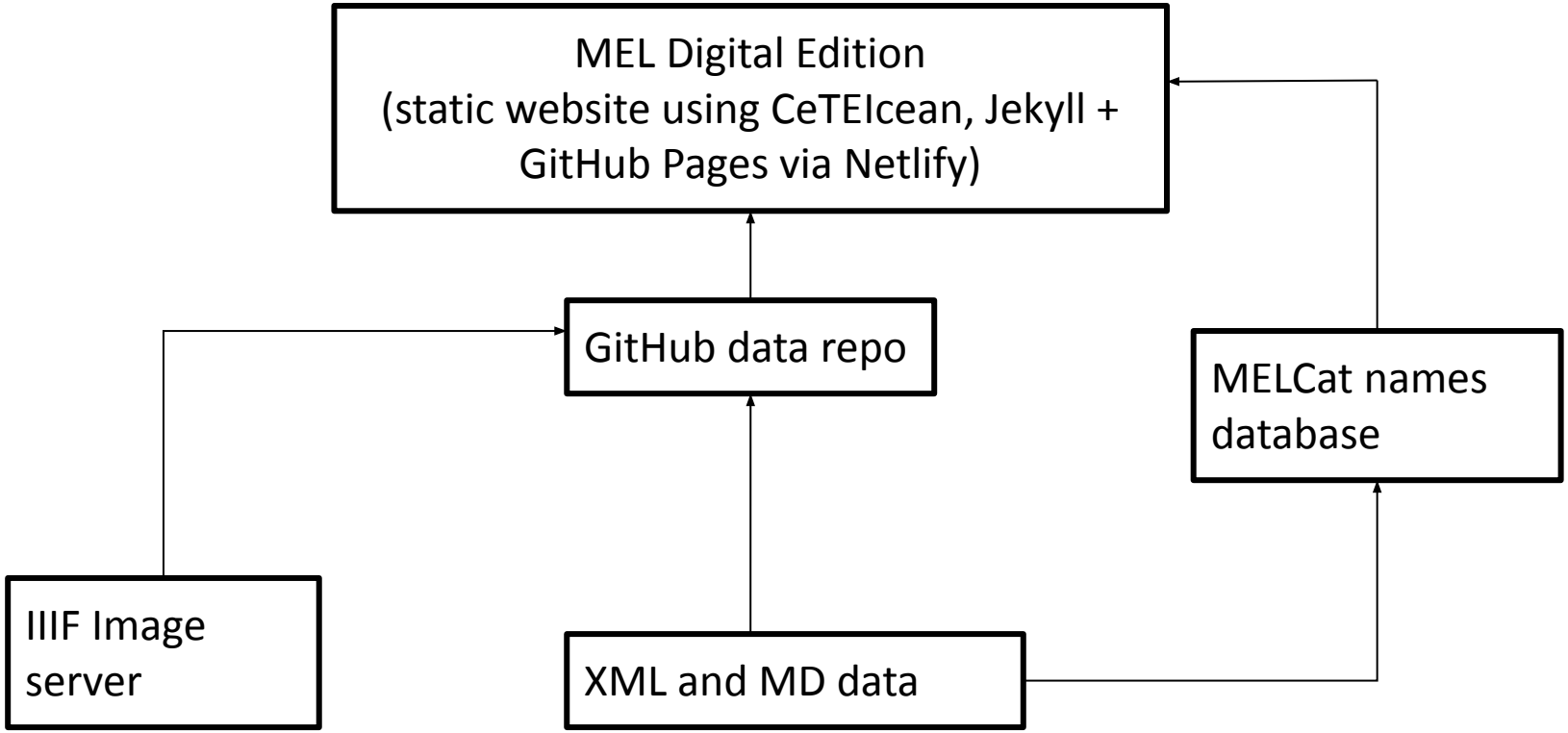
MEL phase 2.1: the first minimal computing stack (c. 2019)



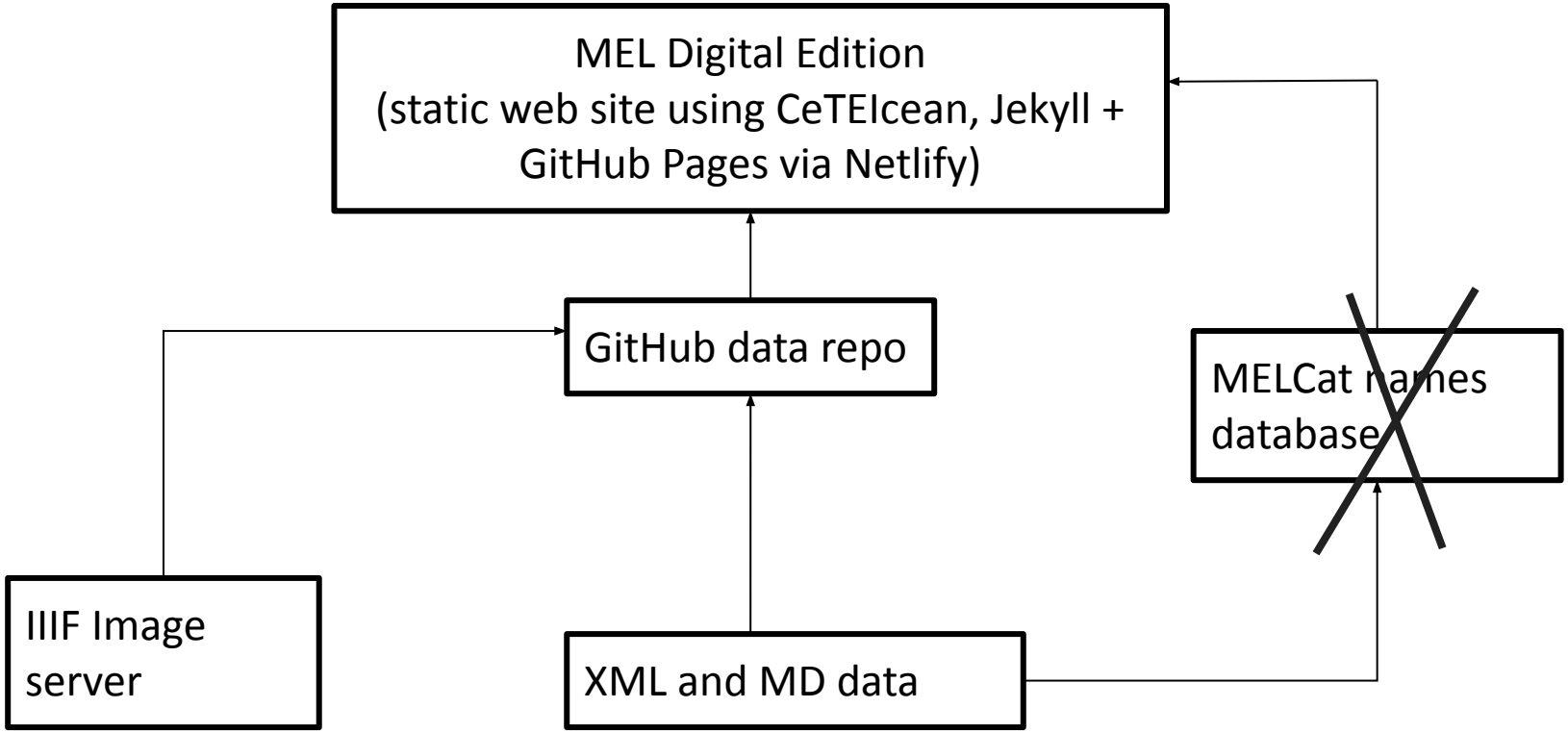
MEL phase 2.1: the first minimal computing stack (c. 2019)



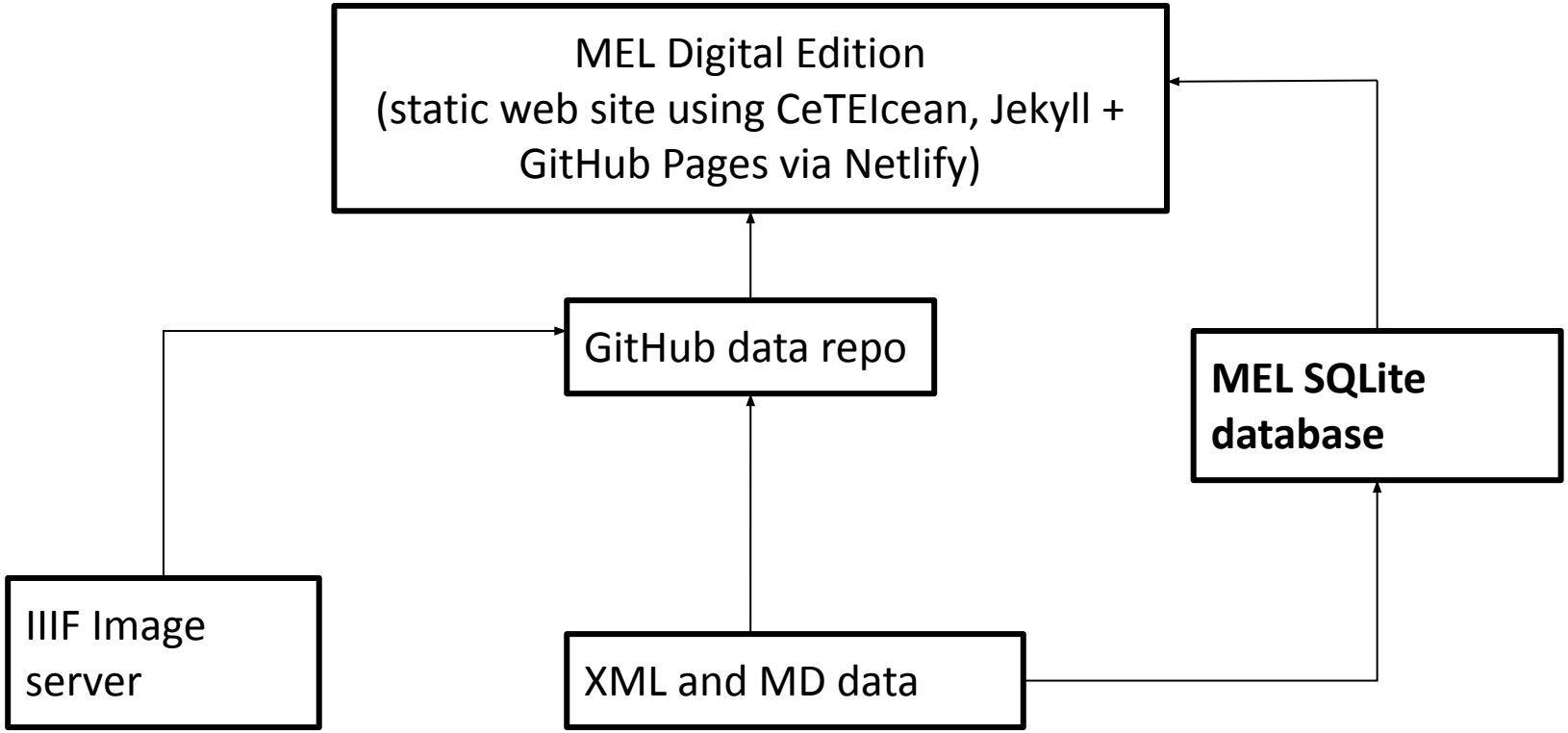
MEL phase 2.2: the current minimal computing stack



MEL phase 2.2: the *future* minimal computing stack



MEL phase 2.2: the *future* minimal computing stack



Responsible computing: components

FAIR data (**F**indable, **A**ccessible, **I**nteroperable, **R**eusable)

- Open data formats (XML, JavaScript)
- CARE data (collective benefit, authority, responsibility, ethics)

Sustainable tools and interfaces

- **Open source** tools; **minimal computing** infrastructure

Mindful of the **climate** and **communities**

- Environmentally conscious dependencies; archival recovery; ensuring widest possible access

The Endings Principles (https://endings.uvic.ca/principles.html)

/e

ABOUT | PRINCIPLES | OUTCOMES | SYMPOSIUM | CODE | PROJECTS | PEOPLE | RESOURCES | NEWS | CONTACT

○ en
○ fr

Principles

Endings Principles for Digital Longevity
Version 2.2.1, 2023-03-03

We divide digital projects into five primary components:

1. Data
2. Documentation
3. Processing
4. Products
5. Release management

https://www.responsible-datasets-in-context.com/

RESPONSIBLE DATASETS IN CONT... DATASETS MISSION TEAM ABOUT

RESPONSIBLE DATASETS IN CONTEXT

Star this project on Github 69

Understanding the social and historical context of data is essential for all responsible data work.

We host datasets that are paired with rich documentation, data essays, and teaching resources, all of which draw on context and humanities perspectives and methods.

We provide models for responsible data curation, documentation, story-telling, and analysis.

Learn more about our Datasets, Team, Mission, and Sponsors. Find us on GitHub , or get in touch.

https://www.software.ac.uk/

SOFTWARE SUSTAINABILITY INSTITUTE

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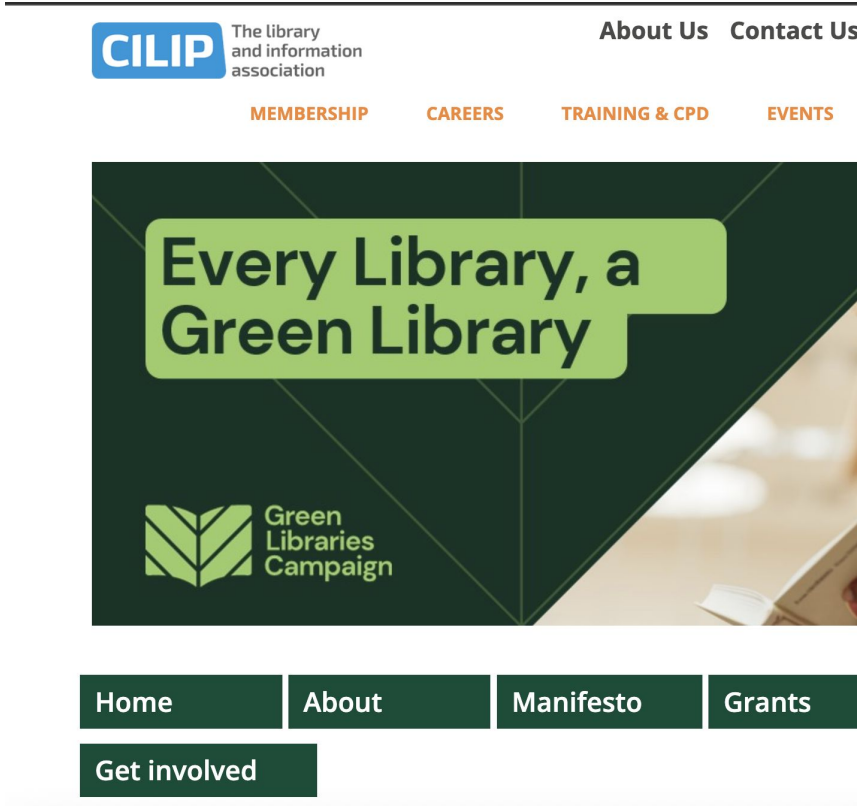
About us

The Software Sustainability Institute is the first organisation in the world that was dedicated to improving software in research. We help people build better and more sustainable software to enable world-class research.

Read more

https://www.cilip.org.uk/page/GreenLibrariesManifesto



Environmental implications (https://sas-dhrh.github.io/dhcc-toolkit/)

DHCC

- Introduction
- I Want To ...
- Minimal Computing
- Maximal Computing
- Grant Writing
- Working Practices
- Advocating within your Institution
- Climate Change FAQs
- Teaching
- Case Studies
- About DHCC ->
- Github

UK-Ireland Digital Humanities Association

digital humanities climate coalition

The Digital Humanities Climate Coalition Toolkit

This toolkit is a guide to making your research practices more environmentally responsible. It is geared towards digital practices, but also touches on general areas such as travel and advocacy. We hope it will be relevant to researchers, educators, students, administrators, librarians, technicians, and others. The toolkit aims to highlight actionable solutions, while also critically reflecting on their nuances, in the broader context of climate justice. It is a community-developed work-in-progress, and you are warmly invited to contribute.

The Digital is Material…

… *every project we create, every software application we use, every piece of hardware we purchase impacts our environment. …*

it is also our role to probe the values, the power structures, and the future imaginaries that underpin sustainable solutions.

(Anne Baillot et al. ‘Digital Humanities and the Climate Crisis: a manifesto’ (2021). https://dhc-barnard.github.io/dhclimate/)

https://sas-dhrh.github.io/dhcc-toolkit/toolkit/minimal-computing.html

DHCC

Introduction

I Want To ...

Minimal Computing

Maximal Computing

Grant Writing

Working Practices

Advocating within your Institution

Climate Change FAQs

Teaching

Case Studies

About DHCC ->

Github

Minimal Computing

> *'We use "minimal computing" to refer to computing done under some set of significant constraints of hardware, software, education, network capacity, power, **or other factors**.'*
>
> GO:DH Minimal Computing group

This section introduces you to minimal computing principles. Minimal computing is a set of principles and practices that aim to reduce both environmental impact and barriers to access and engagement. It offers an important set of thinking tools to make responsible, frugal, and nuanced digital decisions.

Key Recommendations

- Consider ways to reduce digital dependencies (software stacks), and in particular whether static websites and minimalist content management systems are appropriate for your project.
- When building and editing websites, use minimal web design principles and try to reduce client-side dynamic features.
- Evaluate green web hosting options.
- Keep accessibility and inclusive design firmly in mind.

Tools and resources

Applying minimal computing principles

Static versus dynamic websites

- Static Site Generators
- Content Management Systems

Tips for sustainable websites

- Images and Lazy Loading
- Responsive image markup
- Overall visual style
- Minify HTML, CSS and scripts
- Reduce client-side features (i.e. JavaScript)
- Load only what you need
- Benchmark with CO2.js and other tools
- Consider mobile-first design
- Fonts
- Hosting
- Caching
- Blocking bots

Software development

Critical design and system change

Get involved!

Join the mailing list

If you'd like to be kept in the loop about DHCC activities, ask to be added to the email list. We are holding regular informal conversations in 2024 to explore further developing the toolkit and other next steps.

Digital Humanities and the Climate Crisis: A Manifesto

Digital Humanities and the Climate Crisis: A Manifesto. "The digital is material. As digital humanists, every project we create, every software application we use, every piece of hardware we purchase impacts our environment. [...] As humanities researchers, it is also our role to probe the values, the power structures, and the future imaginaries that underpin sustainable solutions."

Workshops and Talks

Members of the DHCC have given talks and workshops related to this toolkit in various contexts including DH Benelux, the Norwegian Technical University, the British Library, National Library of Scotland, the Canadian Health Libraries Association, and the National

DHCC Publications

- Intepreting UKRI Guidance on Environmental Sustainability for the Digital Humanities (2025) offers a series of interpretations of existing guidance on research practice and points to advice on how to operationalise sustainable practice in Digital Humanities research.
- The Cloud and the Climate: Navigating AI-Powered Futures (2024) is a comprehensive overview of the state of AI and the cloud in relation to climate change.
- A Researcher Guide to Writing a Climate Justice Oriented Data Management Plan (2022) aims to help researchers think through the climate-related implications of decisions about data management and project planning. It includes an annotated DMP.

https://antislavery-anthologies.org/books/bow-in-the-cloud/index

THE EVILS OF SLAVERY,

AND

COMMEMORATIVE OF ITS ABOLITION IN THE BRITISH COLONIES.

BY

THE RIGHT HONOURABLE LORD MORPETH. M. P.
T. F. BUXTON, ESQ. M. P.
JOHN PARKER, ESQ. M. P.
JAMES MONTGOMERY.
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JOSIAH CONDER.
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REV. THOMAS BEST.
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MRS. STEVENS.
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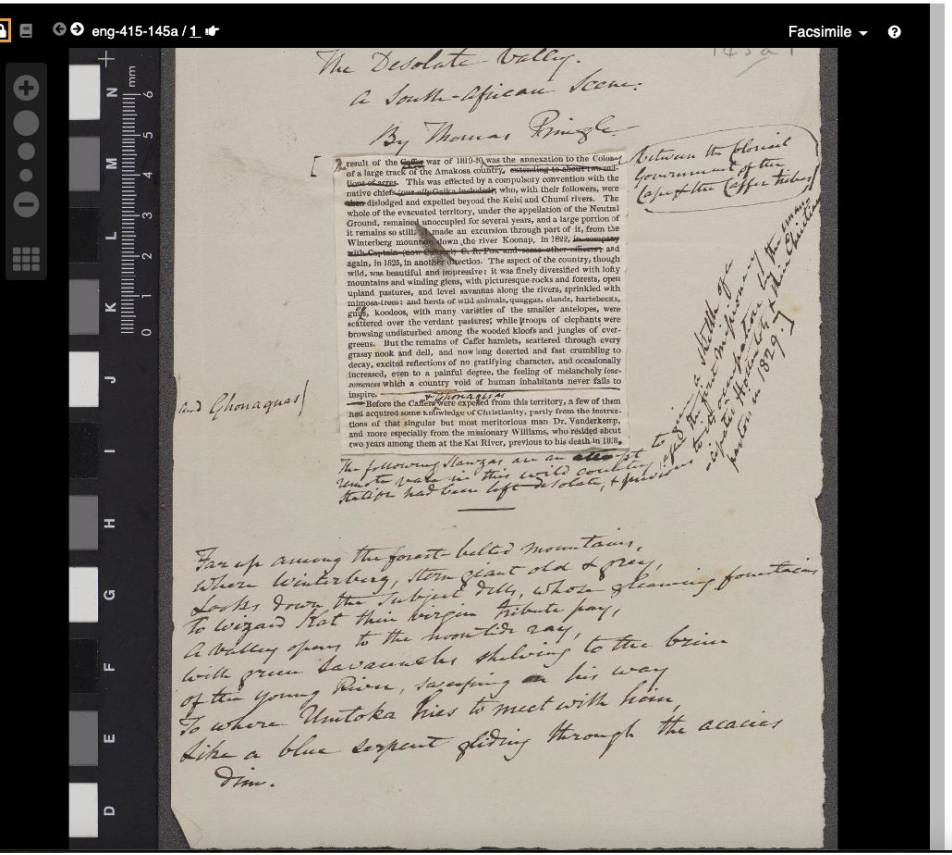
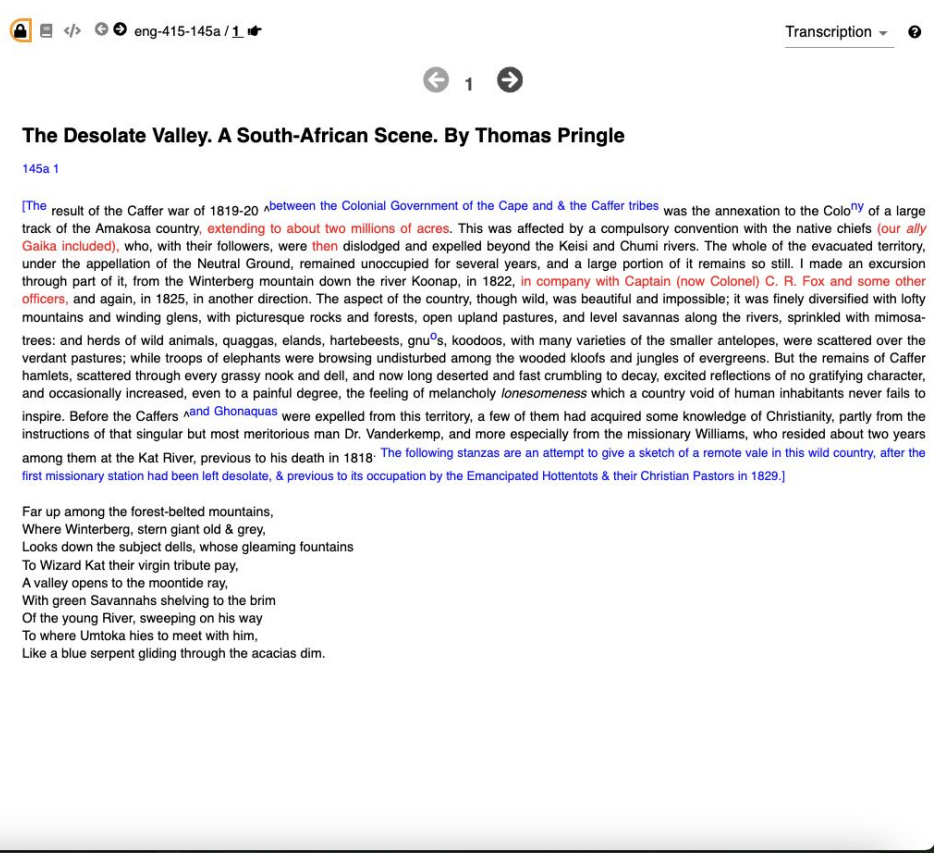
J. H. WITTEN.
THOMAS PRINGLE.
REV. C. H. TOWNSHEND.
REV. WILLIAM KNIBB.
DR. BOWRING.
MISS ROSCOE.

Mary Anne Rawson's *The Bow in the Cloud* (1834): A Scholarly Edition

Begin with "Editor's Introduction"

EditionCrafter publication prototype (IIIF + diplomatic transcription on a static page)





The Desolate Valley. A South-African Scene. By Thomas Pringle

145a 1

[The result of the Caffer war of 1819-20 ^between the Colonial Government of the Cape and & the Caffer tribes was the annexation to the Colo^ny of a large track of the Amakosa country, extending to about two millions of acres. This was affected by a compulsory convention with the native chiefs (our *ally* Gaika included), who, with their followers, were then dislodged and expelled beyond the Keisi and Chumi rivers. The whole of the evacuated territory, under the appellation of the Neutral Ground, remained unoccupied for several years, and a large portion of it remains so still. I made an excursion through part of it, from the Winterberg mountain down the river Koonap, in 1822, in company with Captain (now Colonel) C. R. Fox and some other officers, and again, in 1825, in another direction. The aspect of the country, though wild, was beautiful and impossible; it was finely diversified with lofty mountains and winding glens, with picturesque rocks and forests, open upland pastures, and level savannas along the rivers, sprinkled with mimosa-trees: and herds of wild animals, quaggas, elands, hartebeests, gnu^os, koodoos, with many varieties of the smaller antelopes, were scattered over the verdant pastures; while troops of elephants were browsing undisturbed among the wooded kloofs and jungles of evergreens. But the remains of Caffer hamlets, scattered through every grassy nook and dell, and now long deserted and fast crumbling to decay, excited reflections of no gratifying character, and occasionally increased, even to a painful degree, the feeling of melancholy *lonesomeness* which a country void of human inhabitants never fails to inspire. Before the Caffers ^and Ghonaquas were expelled from this territory, a few of them had acquired some knowledge of Christianity, partly from the instructions of that singular but most meritorious man Dr. Vanderkemp, and more especially from the missionary Williams, who resided about two years among them at the Kat River, previous to his death in 1818. The following stanzas are an attempt to give a sketch of a remote vale in this wild country, after the first missionary station had been left desolate, & previous to its occupation by the Emancipated Hottentots & their Christian Pastors in 1829.]

Far up among the forest-belted mountains,
Where Winterberg, stern giant old & grey,
Looks down the subject dells, whose gleaming fountains
To Wizard Kat their virgin tribute pay,
A valley opens to the moontide ray,
With green Savannahs shelving to the brim
Of the young River, sweeping on his way
To where Umtoka hies to meet with him,
Like a blue serpent gliding through the acacias dim.