

MIGRATING 10,000 BOOKS TO D8

Princeton University Press Case Study

WITH ALEX DERGACHEV & JIGAR MEHTA



Alex Dergacheva

CO-FOUNDER

- Co-founded Evolving Web 10 years ago
- [@dergachev](#) on twitter + github
- Co-organizer of Drupal Montréal meetups



Jigar Mehta

FULL-STACK DEVELOPER AT EVOLVING WEB

- Using Drupal since 2004
- mvc on Drupal.org, IRC, slack
- [@jigarius](#) on Twitter



- 9 years of great Drupal dev.
- Enterprise level projects
- Extensive training program
- Based in Old Montréal
- We're hiring (even remote!)



OUR WORK

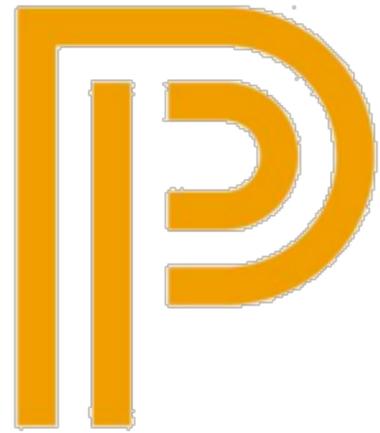


OUR APPROACH

- Training & Knowledge Transfer
- MVP, Iterative approach
- Expertise through the technology stack.
- Collaboration tools: Redmine/JIRA, Basecamp, Google Suite, Slack

OUR EXPERTISE

- Great design and theming
- Large scalable infrastructure
- Multilingual CMS
- Search UI
- Content migration and sync
- Custom Drupal development



PRINCETON
UNIVERSITY
PRESS



“Princeton University Press is an independent publisher with close connections, both formal and informal, to Princeton University. As such it has overlapping responsibilities to the University, the academic community, and the reading public. Our fundamental mission is to disseminate scholarship (through print and digital media) both within academia and to society at large.”

PROJECT GOALS

- Move legacy site to stable, secure, maintainable platform
- Already considering Drupal 8
- Responsive goals
- Prepare for digital rebranding and design overhaul in 2018/2019

The screenshot shows the Princeton University Press website. At the top left is the PUP logo and the text 'PRINCETON UNIVERSITY PRESS'. Below this is a search bar with 'Princeton Custom Search' and a 'Google full text of our books:' search option. A navigation menu on the left lists various categories like 'New Book E-mails', 'Videos/Audios', 'Sample Chapters', 'Catalogs', 'Exam/Desk Copy', 'Media/Reviewers', 'Ordering', 'Recent Awards', 'PUP Europe', and 'Links'. The main content area features a large featured book 'Welcome to the Universe: The Problem Book' by Neil deGrasse Tyson, Michael A. Strauss, and J. Richard Gott. Below this is a grid of smaller book covers with interactive links such as 'Watch videos', 'Read introduction', and 'View illustrations'. The footer contains links for 'Downloads for Dot.Coms', 'Job Opportunities', 'Instructions for PUP Authors', 'Privacy Statement', 'Centenary', and 'Send questions to: webmaster@press.princeton.edu'. It also includes contact information for USD and GBP orders and the address: 'Princeton University Press, 41 William Street, Princeton, New Jersey 08540 USA'.

DATA TO MIGRATE

- 9,000 published titles
- 15,000 pages in Einstein Papers
- 3,000 quote pages
- 2,000 sample chapters
- 2,000 ToCs pages
- 600 bird section pages
- 6,000 PDFs
- 6,000 blog pages
- 18,000 content pages, catalogues, sales pages, videos, and other ancillary materials.



PRINCETON UNIVERSITY PRESS

Title

Princeton Custom Search



Google full text of our books:

Google Search Full Text



New Book E-mails

New In Print

PUP Blog

Videos/Audios

Princeton APPS

Sample Chapters

Subjects

Series

Catalogs

Princeton Legacy

Library

Exam/Desk Copy

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Ordering

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F.A.Q.



Welcome to the Universe: The Problem Book

Neil deGrasse Tyson, Michael A. Strauss & J. Richard Gott

"The difference between a good astronomy course and a great astronomy course is great problems. This book is a gold mine . . .

[Click for Details](#)

1 2 3 4



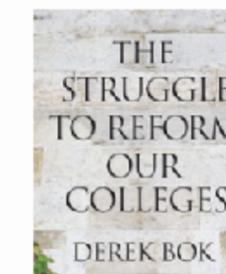
Watch videos
Visit
atlasofancientrome.com



Read introduction



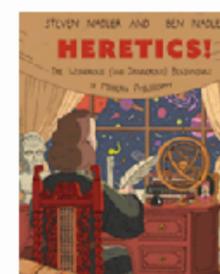
Read sample chapter



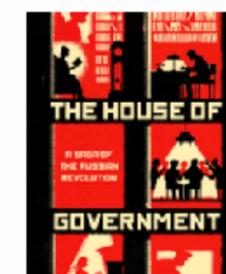
Read introduction



Watch video trailer



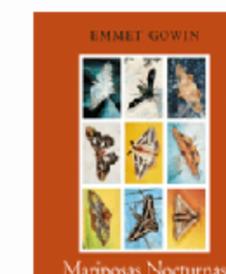
Watch book trailer



Watch book trailer



Read introduction



View illustrations



Read introduction

[Downloads for Dot.Coms](#) | [Job Opportunities](#) | [Instructions for PUP Authors](#) | [Privacy Statement](#)
[Centenary](#) | Send questions to: webmaster@press.princeton.edu

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For more detailed ordering information, see: <http://press.princeton.edu/ordering.html>.

Princeton University Press, 41 William Street, Princeton, New Jersey 08540 USA

MOVING PARTS

- Minisites
- Wordpress Blog
- phpList newsletter
- Search (CGI + Google Books)
- Two external shopping carts (US/UK)
- ONIX XML feed + images
 - (distributor FTPs)
- Videos and audios



A screenshot of the Princeton University Press website. The top header features the PUP logo and the text 'PRINCETON UNIVERSITY PRESS'. Below this is a navigation bar with a dropdown menu for 'Title', a search box for 'Princeton Custom Search', and a search box for 'Google full text of our books: Google Search Full Text'. On the right side of the navigation bar are flags for the US and UK, and shopping cart icons. The main content area is divided into two columns. The left column contains a vertical menu with items: 'New Book E-mails', 'New In Print', 'PUP Blog', 'Videos/Audios', 'Princeton APPS', 'Sample Chapters', 'Subjects', 'Series', 'Catalogs', 'Princeton Legacy Library', 'Exam/Desk Copy', 'Textbooks', 'Media/Reviewers', 'Rights/Permissions', and 'Ordering'. The right column is titled 'BROWSE PRINCETON SUBJECT CATEGORIES' and lists various academic subjects such as American History, American Literature, Anthropology, Applied Science and Engineering, Archaeology and Ancient History, Architecture, Urbanism, and Landscape, Art, Asian and Asian American Studies, Astronomy and Cosmology, Biochemistry, Biological Sciences, Biophysics, Birds and Natural History, British Literature, Chemistry, Classics, Cognitive Science, Collected Works and Papers, Comparative Literature, Computer Science, Earth Sciences, Economics, European History, Film Studies, Finance, Gender Studies, Higher Education, and History of Science and Medicine, Philosophy of Science.

WHAT WE DID

- Analysis of the SQL Server DB, VB scripts, and current website
- Content audit - identify pages to drop
- Deploy Drupal CMS to organize the content
- Updated responsive design
- Nightly synchronization of book data from SQL Server
- Deploy to Pantheon

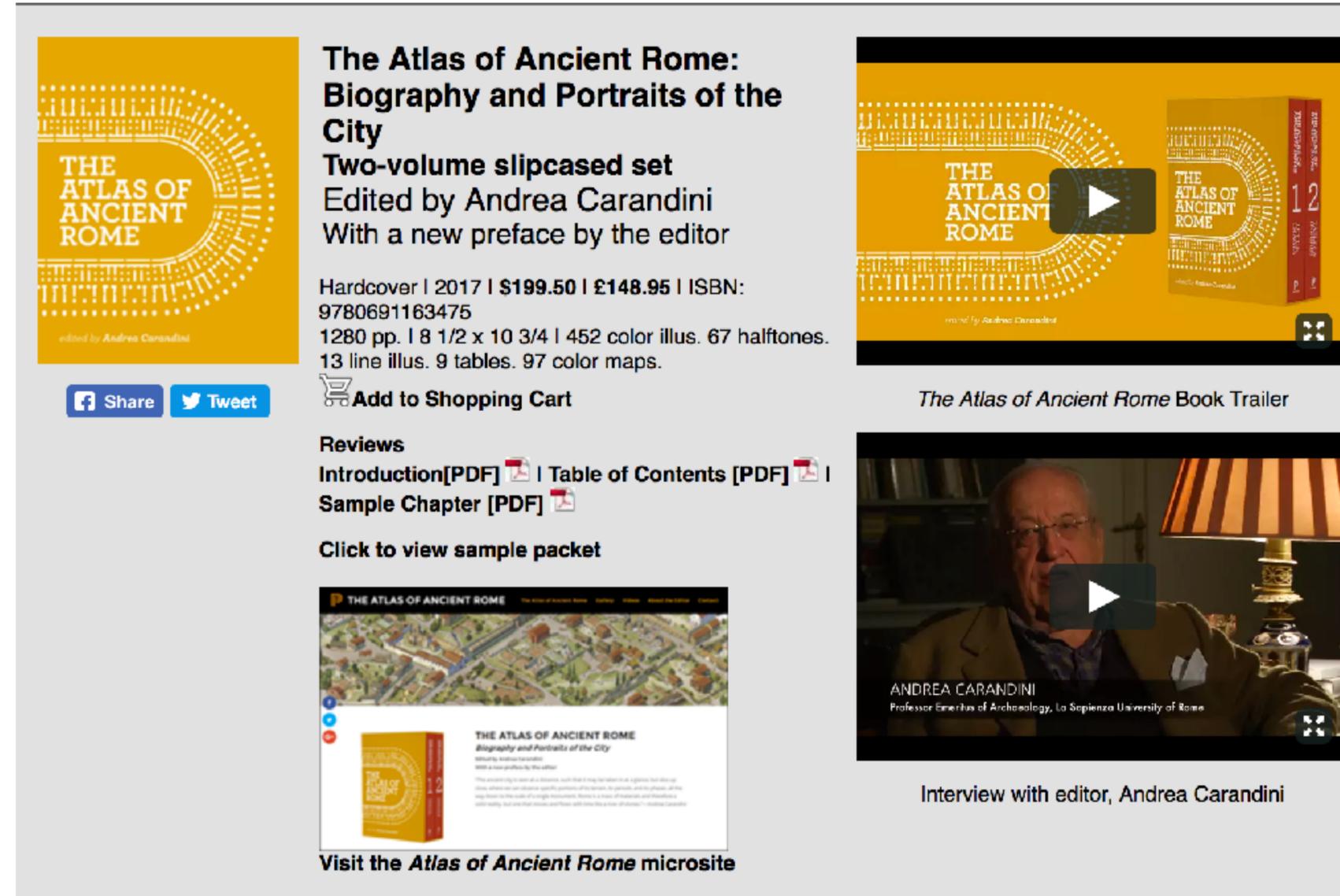
SCOPING A COMPLEX **MIGRATION**

EXISTING DATABASE AUDIT

Description		One row per book. Each book potentially has multiple editions.		Columns we likely care about are in bold.	
Column	Type	Type notes	Description	Examples	Notes
BOOKID	float		Effective primary key, maintained manually	9651	
LOC	nvarchar(20)		Unused/inconsistent		
PUB_DATE	datetime		Unused/inconsistent		
PUB_YEAR	nvarchar(4)		Unused/inconsistent		
PUB_MONTH	nvarchar(10)		Unused/inconsistent		
TITLE	nvarchar(254)	Not NULL, may have HTML, usually short	Primary part of title	War of the Sexes	Full title is : TITLE + VOLUME + SUBTITLE + EditionStatement
SUBTITLE	nvarchar(254)	May be NULL, may have HTML, often quite long	Secondary part of title	How Conflict and Cooperation Have Shaped Men and Women from Prehistory to the Present	
volume	nvarchar(64)	Usually NULL	Secondary part of title	Volume 4	
VolumeInt	int	Usually NULL	Integer part of volume, usually NULL	4	
ACQED	nvarchar(50)		Acquiring editor name, usually NULL	APPEL, FRED	
BORM	nvarchar(1)	Either 'B', 'I' or NULL	B means a book from the Bollingen Series	B	Books from this series have a special symbol before title, eg: http://press.princeton.edu/titles/8234.html Ann: Series logos are now in description field of series - no longer needed. Avi: Information that work is in a series can be determined from series table - this flag not needed.
SEASONTXT	nvarchar(4000)	Rarely NULL, contains HTML, usually > 1000 characters	Main book description	<p>A penetrating analysis of the life and doctrines of the Spanish-born Arab theologian.</p><p>A penetrating analysis of the life and doctrines of the Spanish-born Arab theologian.</p>	Avi: New DB will have multiple copy types including variations on the main description. There will be one for the web.
				Paul C. Gutjahr is professor of English at Indiana University. His books	Considered out of date if DROP is true, or publication was more than 1100 days ago

LEGACY VB SCRIPTS

- 30-50 scripts in MS Access
- Took **days** to run
- Code duplicated, out-of-date
- “Special” books
 - (edited in Dreamweaver)
- “Ann’s Biblio” MsSQL DB
- HTML files moved to W:\
- COMPLEX! (5k-10k Lines of code)



The Atlas of Ancient Rome: Biography and Portraits of the City
Two-volume slipcased set
Edited by Andrea Carandini
With a new preface by the editor

Hardcover | 2017 | \$199.50 | £148.95 | ISBN: 9780691163475
1280 pp. | 8 1/2 x 10 3/4 | 452 color illus. 67 halftones. 13 line illus. 9 tables. 97 color maps.

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Reviews
[Introduction \[PDF\]](#) | [Table of Contents \[PDF\]](#) | [Sample Chapter \[PDF\]](#)

[Click to view sample packet](#)

[Visit the *Atlas of Ancient Rome* microsite](#)

The Atlas of Ancient Rome Book Trailer

Interview with editor, Andrea Carandini

The Atlas of Ancient Rome provides a comprehensive archaeological survey of the city of Rome from prehistory to the early medieval period. Lavishly illustrated throughout with full-color maps, drawings, photos, and 3D reconstructions, this magnificent two-volume slipcased edition features the latest discoveries and scholarship, with new descriptions of more than 500 monuments, including the Sanctuary of Vesta, the *domus Augusti*, and the Mausoleum of Augustus. It is destined to become the standard reference for scholars, students, and anyone interested in the history of the city of Rome.

The Atlas of Ancient Rome is monumental in scope. It examines the city's topography and political-administrative divisions, trade and economic production, and social landscape and infrastructure—from residential neighborhoods

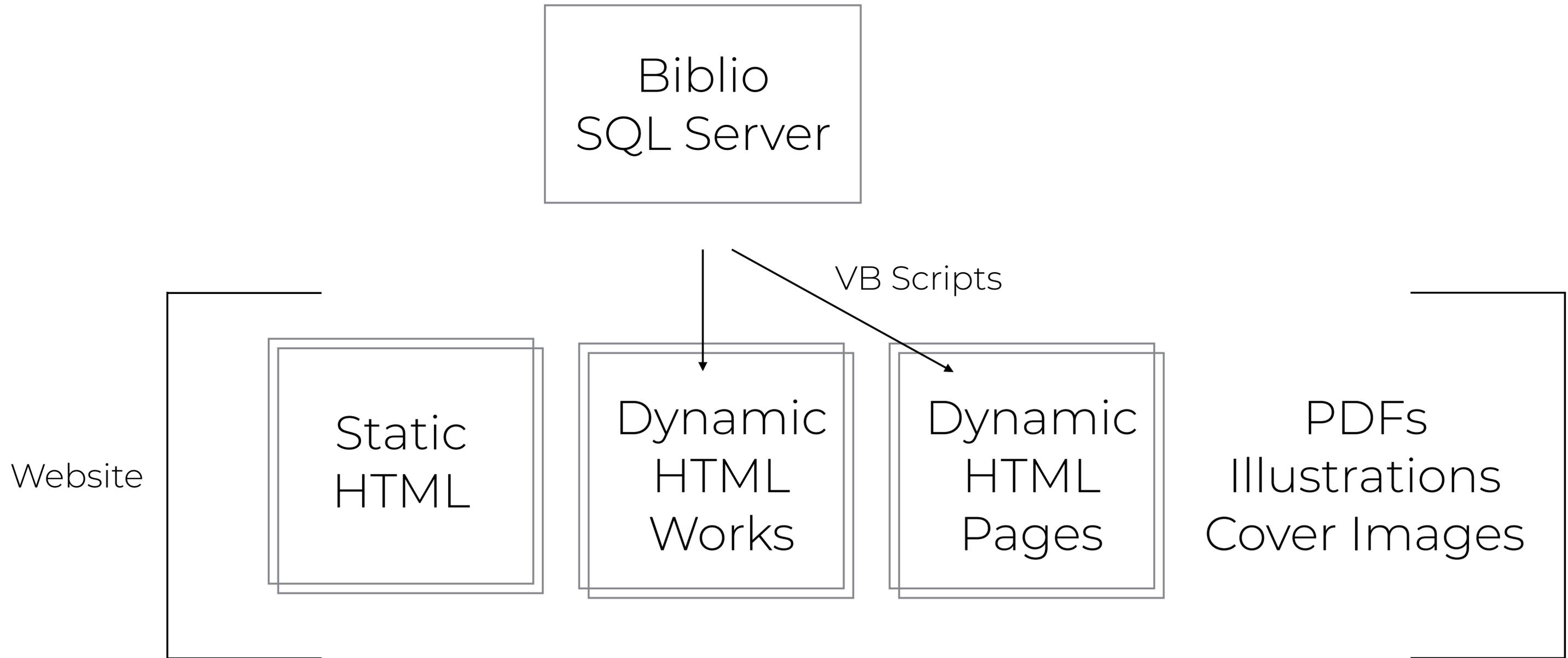


Campus Martius
[Click to enlarge](#)

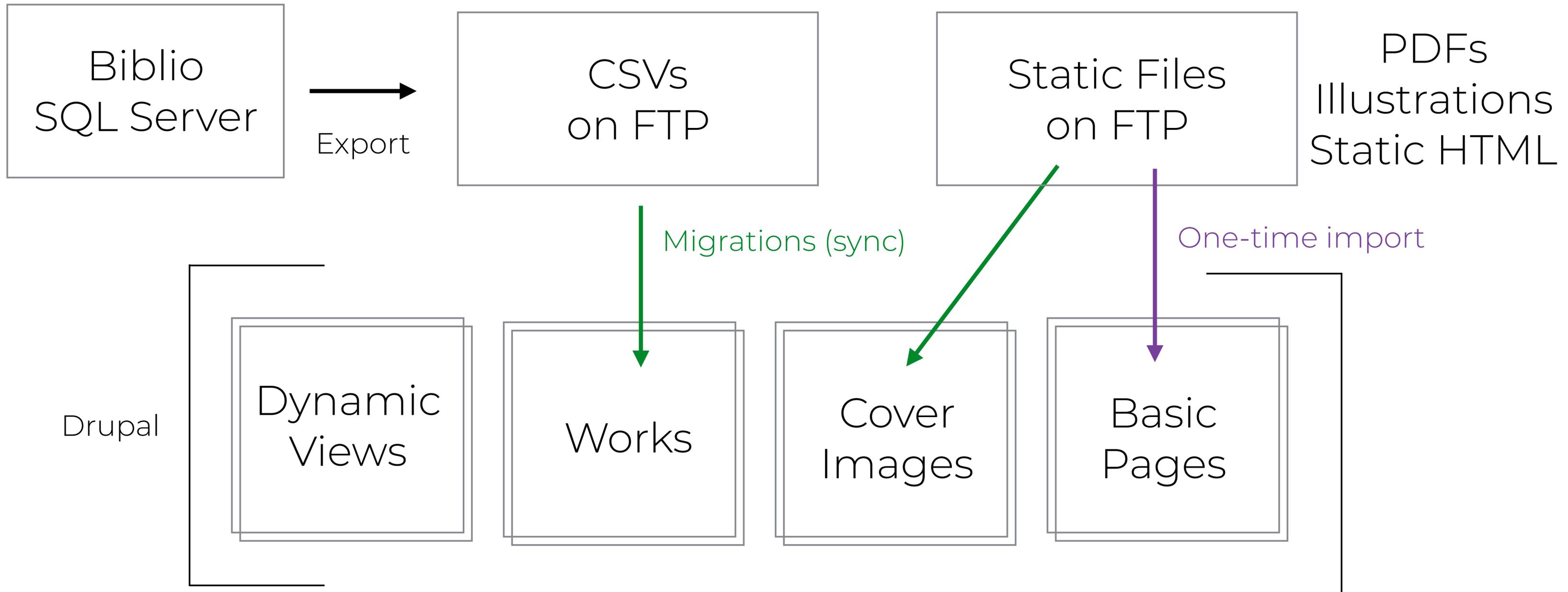
VB SCRIPT AUDIT

	A	B	C	D
1	Script that is run	Full path to file on J: drive	Full destination path on W: drive	Notes
2	a book description all pages - F17	J:\aWebDev\testAnn\1234.htm	W:\press\htdocs\titles\1234.html	our bread and butter scripts because creates our book description pages
3	a book description single page - F17	J:\aWebDev\test\1234.htm	W:\press\htdocs\titles\1234.html	our bread and butter scripts because creates our book description pages
4	a book description all pages - F17	J:\aWebDev\special\8233.htm	W:\press\htdocs\titles\8233.html	compare to w:\press\htdocs\specials\NewDesign (where the special formatting needed is located); Edited before being copied (see "Special Books" sheet)
5	a book description single page - F17	J:\aWebDev\special\8233.htm	W:\press\htdocs\titles\8233.html	compare to w:\press\htdocs\specials\NewDesign (where the special formatting needed is located); Edited before being copied (see "Special Books" sheet)
6	a book description x range of pages - F17	J:\aWebDev\titles	W:\press\htdocs\titles\1234.html	when adding weekly reviews and/or chapters this script relies on the reviews and/or chapters tables. In these tables there is a revid/itemid. For reviews, we look at what was added for the week (entry_date) and then use first itemid in that week. E.g., two entries for entry_date 5/1/2017. Itemid#s are 9214 and 9215. In "a book description x range of pages - F17" script enter 9214 in the "form view" where it says "Last Chapter ItemId No." Both 9214 and 9215 book description pages are created. Ditto for reviews: for everything since and including 5/2/17 choose revid # 89074 and add to "form view" where it says "Last Review ItemID No" and run script. In this case about 40 book description pages were created.
7	a book oops new pages or Single Page - ebook only fb	j:\aWebDev\looppages-ebooks-only\special\	W:\press\htdocs\titles\10052.html	We only show oops (out-of-print) titles that have live ebook links from isbn table. The isbn table fields needed are populated by elinks from the various vendors we receive in an excel document. these specials are listed on the "special books" sheet
8	a catalog Season Menu files without wrapper	J:\aWebDev\web\season.htm	W:\press\htdocs\catalogs\17trade.html	manually broken out to 1 of 6 catalog html pages the script creates
9	a catalog Season Menu files without wrapper	J:\aWebDev\web\season.htm	W:\press\htdocs\catalogs\17acad.html	manually broken out to 2 of 6 catalog html pages
10	a catalog Season Menu files without wrapper	J:\aWebDev\web\season.htm	W:\press\htdocs\catalogs\17nathist.html	manually broken out to 3 of 6 catalog html pages

CURRENT WORKFLOW



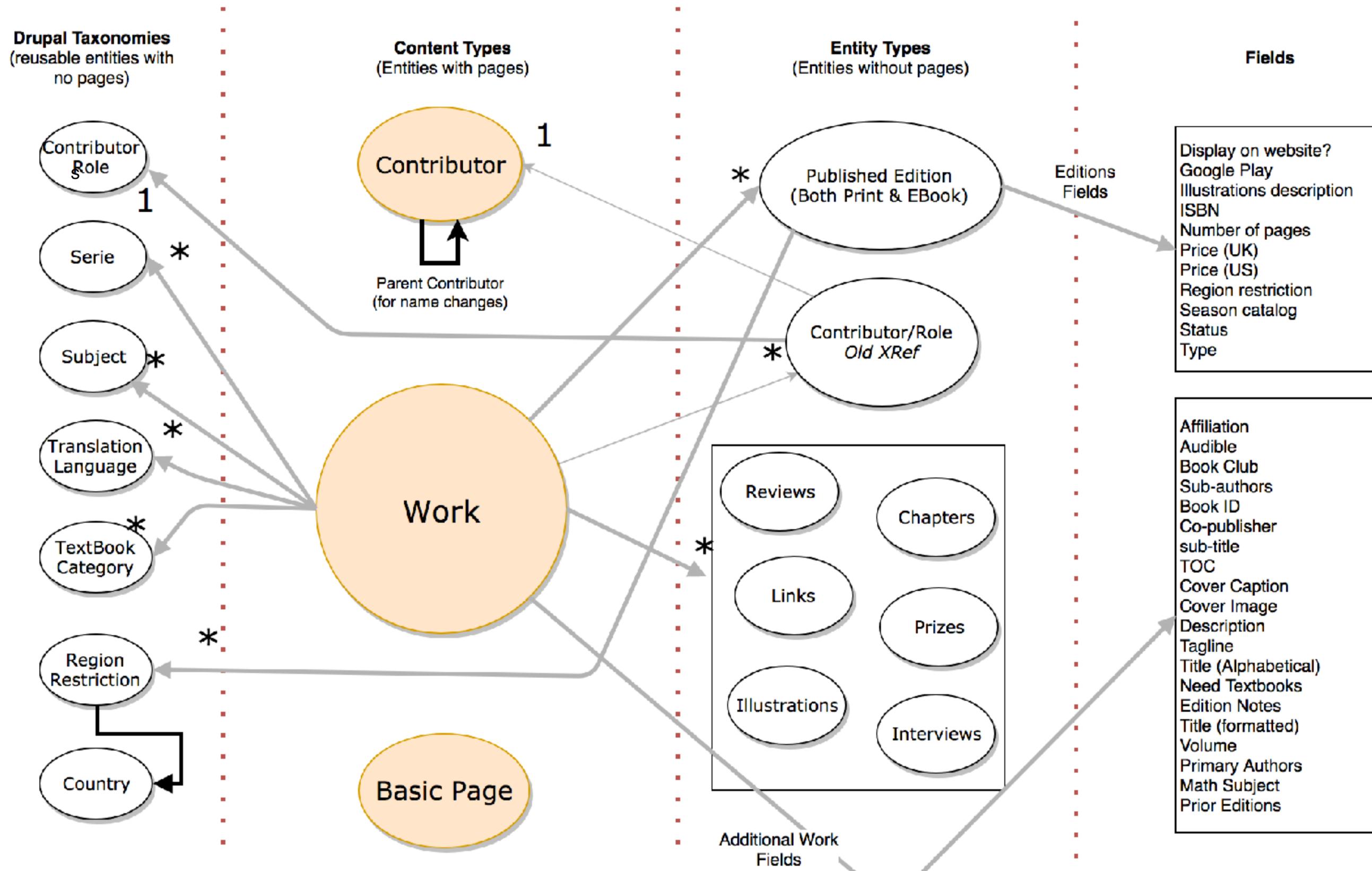
NEW WORKFLOW



BIBLIO QUERIES - GENERATE CSV

1	Table	Query
2	allmathsubs	SELECT BookID, Acro, [Key] as Pkey FROM AllMathSubs ORDER BY BookID ASC
3	audible	SELECT [Book ID] as BookID, [Key] as Pkey, Snippet FROM Audible ORDER BY BookID ASC
4	bookclub	SELECT BookID, Serin, Rank, [Key] as Pkey FROM BookClub ORDER BY BookID ASC, Rank ASC
5	chapters	SELECT BookID, Filename, Type, [Desc], Heading, ItemID FROM Chapters WHERE Web <> 0 ORDER BY BookID ASC

DRUPAL DATA STRUCTURE



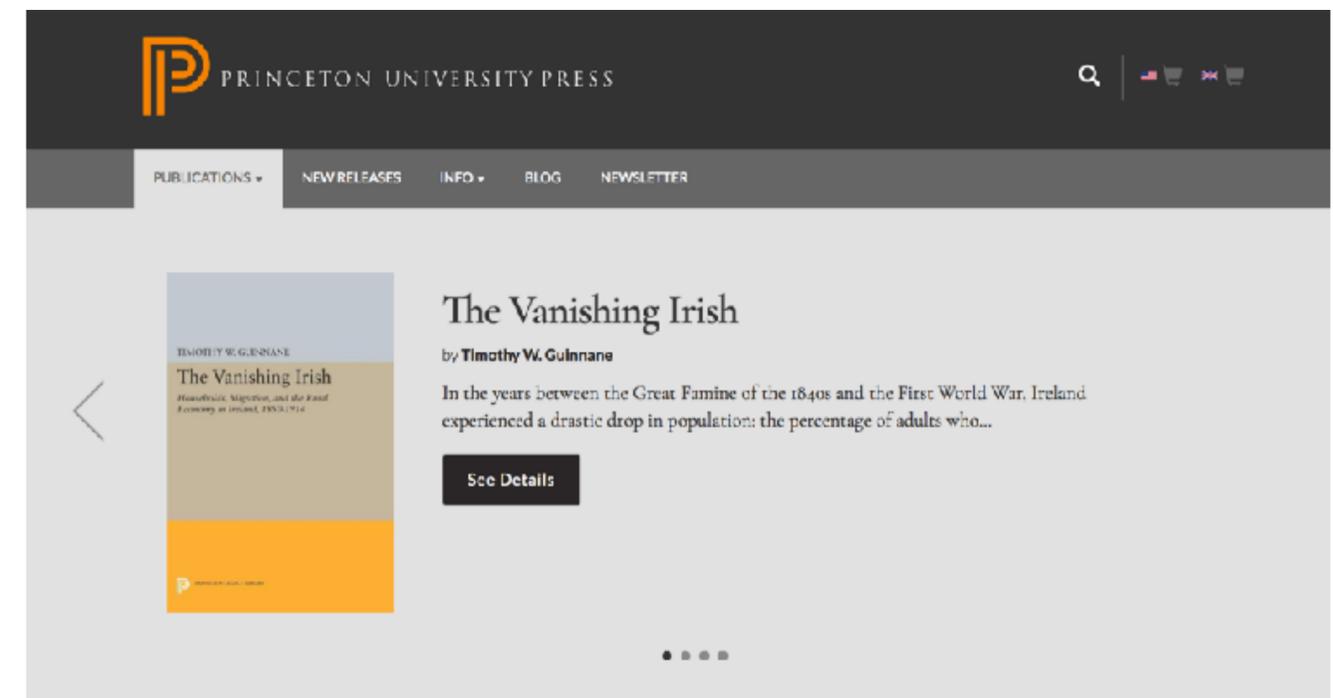
CONTENT CLEAN-UP

Category	Number of Files
Dynamic Pages - Books and Book Lists	20,163
Static Pages to Keep	2,478*
Pages to Delete	53,929
Total	76,570

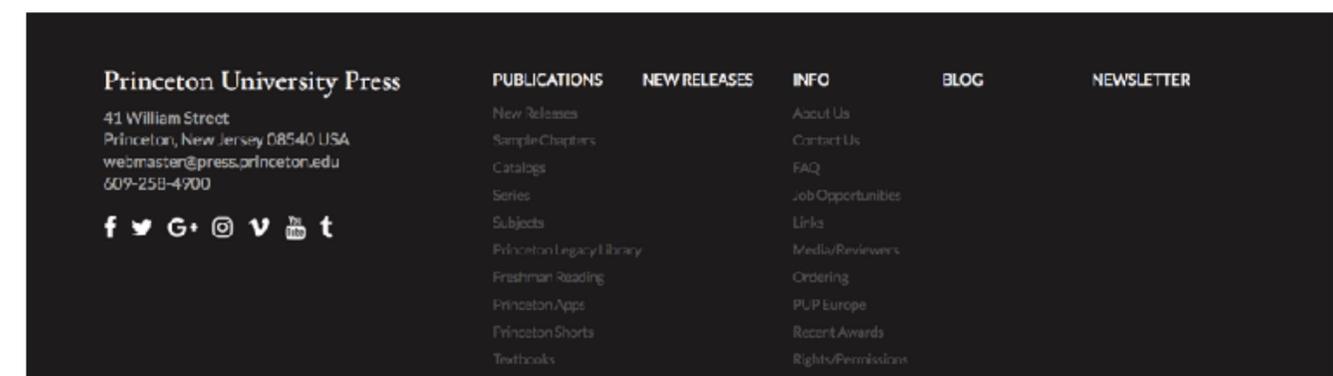
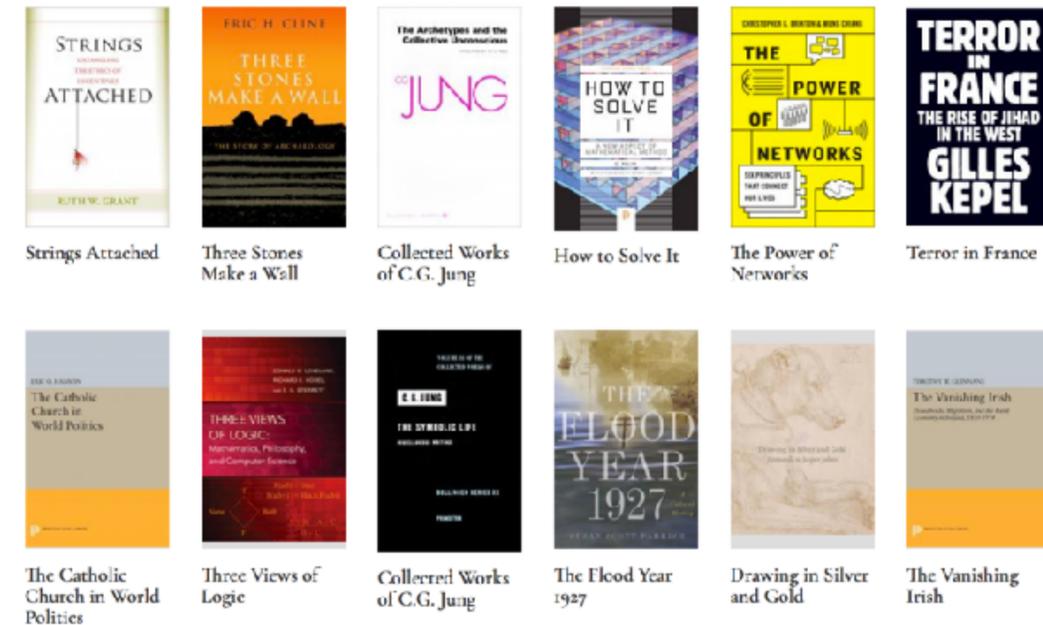
IMPLEMENTATION

BENEFITS OF NEW SITE

- Modernized, responsive design
- Accessible and good UX
- SEO
- Stable, secure, maintainable platform
- Easy to update web content, WYSIWYG
- Images are auto-resized
- Clear navigation
- Automatic nightly sync

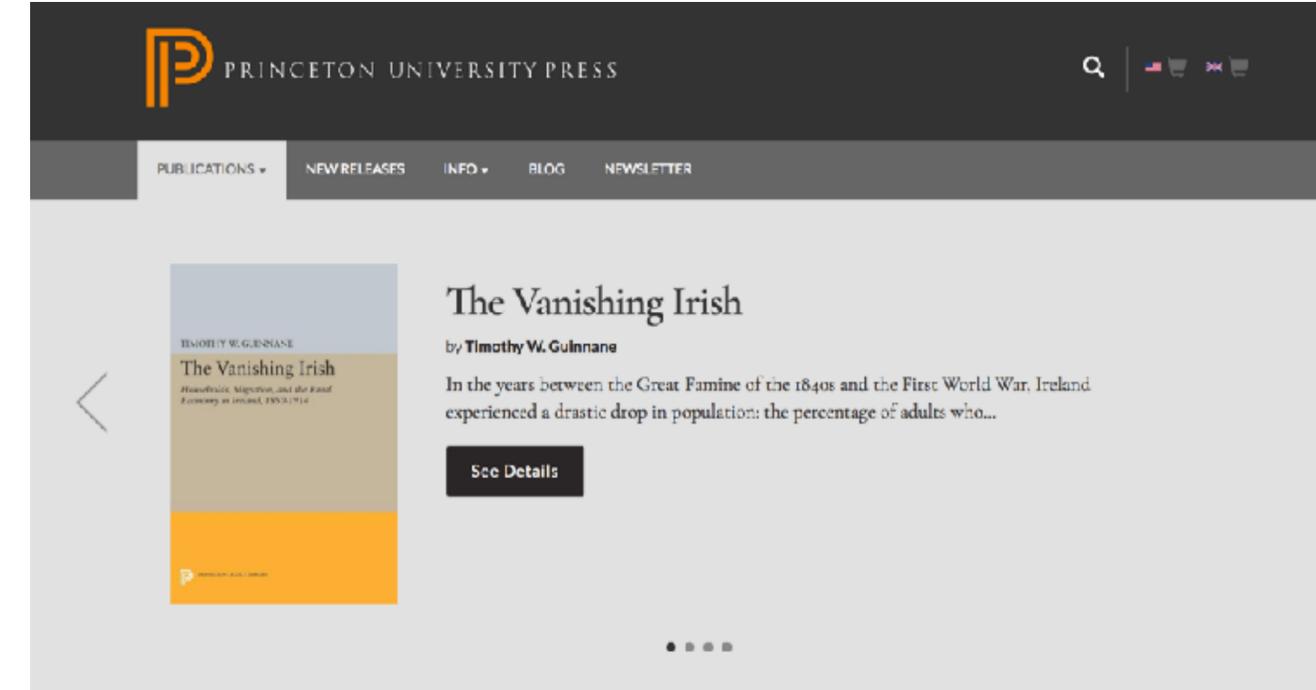


Featured Publications

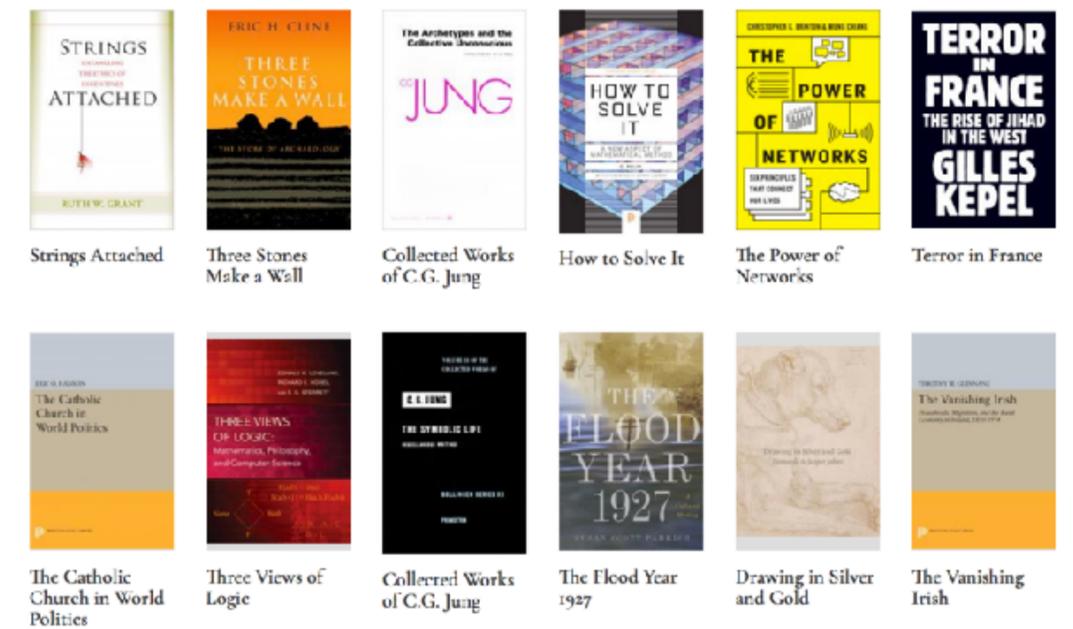


HOMEPAGE REFRESH

- Existing branding + look-and-feel
- Adapted to standard modern responsive template
- Changed side menu to consistent drop-down UI
- Clean, accessible footer
- Search box collapsed



Featured Publications



Princeton University Press

41 William Street
Princeton, New Jersey 08540 USA
webmaster@press.princeton.edu
609-258-4900



PUBLICATIONS

New Releases
Sample Chapters
Catalogs
Series
Subjects
Princeton Legacy Library
Freshman Reading
Princeton Apps
Princeton Shorts

NEW RELEASES

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BLOG

NEWSLETTER

OLD MENU STRUCTURE

PRINCETON UNIVERSITY PRESS

Title

[New Book E-mails](#)
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Featured Book: Welcome to the Universe: The Problem Book
 Neil deGrasse Tyson, Michael A. Strauss & J. Richard Gott
 "The difference between a good astronomy course and a great astronomy course is great problems. This book is a gold mine . . ."
[Click for Details](#)

1 2 3 4

Book Grid:

- THE ATLAS OF ANCIENT ROME** (by Andrea Giardina) - Watch videos Visit allasofancientrome.com
- Expanding Blaze** (by Jonathan Israel) - Read introduction
- FACE VALUE** (by Alexander Tooprov) - Read sample chapter
- THE STRUGGLE TO REFORM OUR COLLEGES** (by Derek Bok) - Read introduction
- BIG PACIFIC** - Watch video trailer
- HERETICS!** (by Steven Nadler and Ben Naylor) - Watch book trailer
- THE HOUSE OF GOVERNMENT** (by Yuri Slezkine) - Watch book trailer
- BIBLE NATION** (by Candida R. Moss and Joel S. Baden) - Read introduction
- EMMET GOWEN** (Mariposas Nocturnas) - View illustrations
- THE DIVERSITY [BONUS]** (by Scott E. Page) - Read introduction

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 Centenary | [Send questions to: webmaster@press.princeton.edu](mailto:webmaster@press.princeton.edu)

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 For more detailed ordering information, see: <http://press.princeton.edu/ordering.html>.**

Princeton University Press, 41 William Street, Princeton, New Jersey 08540 USA

NEW MENU STRUCTURE

The screenshot displays the Princeton University Press website with a new navigation menu. The top navigation bar includes: BROWSE ▾, COLLECTIONS ▾, RESOURCES ▾, ABOUT ▾, PUP BLOG, and SUBSCRIBE. The 'RESOURCES' menu is expanded, showing: Exam & Desk Copies, Freshman Reading, Rights & Permissions, Media & Review Copies, Instructions for Authors, and Submit a Proposal. The main content area features a book cover for 'HOW TO SOLVE IT: A NEW ASPECT OF MATHEMATICAL METHOD' by G. POLYA, with a foreword by John H. Conway. The book details are: Editions: Paperback | 2015 | \$19.95 | £14.95 | ISBN: 9780691164076 | 288 pp. | 5 1/2 x 8 1/2 | 31 line illus. E-book | ISBN: 9781400828678.

BOOK TEMPLATES

- Simplified UI (less in header)
- Displays books consistently
- Adapts based on the fields available for each book
- Integrates with shopping carts, Google Book search
- Renders videos + materials
- Collapses long sections of text

The screenshot shows the Princeton University Press website for the book "Three Stones Make a Wall: The Story of Archaeology" by Eric H. Cline. The page features a dark header with the Princeton University Press logo and navigation links for Publications, New Releases, Info, Blog, and Newsletter. The book cover is displayed on the left, and the right side contains the book title, author information, editions (hardcover and e-book), a purchase button, and a download link for Chapter 1. Social media sharing options for Facebook, Twitter, Email, and More are also visible.

Summary

From the bestselling author of *1177 B.C.*, a comprehensive history of archaeology—from its amateur beginnings to the cutting-edge science it is today.

Eric H. Cline is professor of classics and anthropology and director of the Capitol Archaeological Institute at George Washington University. An active archaeologist, he has excavated and surveyed in Greece, Crete, Cyprus, Egypt, Israel, Jordan, and the United States. His many books include *1177 B.C.: The Year Civilization Collapsed* (Princeton).

A Q&A with Eric H. Cline

Reviews

"Intensely readable. . . . Cline is a winning spokesman for his field, with a warm and generous voice evocative of the best university lectures. . . . More than a few readers may feel a sudden urge to rush out to a nearby mound or midden, with spade and trowel in hand."—James Romm, *Wall Street Journal*

"Eric Cline. . . doesn't disappoint in his terrific new book."—Steve Donoghue, *The National*

[+ show more](#)

Endorsements

"I loved this book. *Three Stones Make a Wall* is a great read filled with many interesting stories. A terrific piece of work!"—Kenneth L. Feder, author of *The Past In Perspective: An Introduction to Human Prehistory*

"This book takes your hand and leads you on a magical archaeology mystery tour across the globe. You'll meet famous archaeologists, explore legendary sites, and see the latest discoveries using new technologies. Archaeology is full of 'wonderful things,' and *Three Stones Make a Wall*, written by one of its greatest storytellers, is a must-have."—Sarah Parcak, University of Alabama at Birmingham, winner of the 2016 TED Prize

[+ show more](#)

Table of Contents

Other Books Written by this Author(s)

MIGRATING BOOK DATA

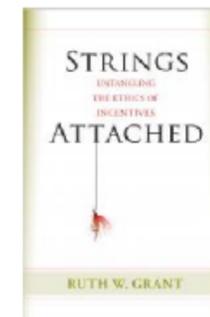
- Includes migration of ~8,000 books and ~4,000 jpgs*
- Process is optimized to prevent downtime/inconsistency on the live site
- Migrations can be run manually or automatically
- Out-of-print books are removed

Biblio
SQL Server

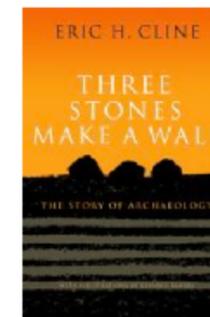
↓ Export to CSV

CSVs
on FTP

↓ Migrate to website



Strings Attached



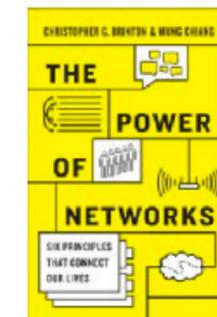
Three Stones Make a Wall



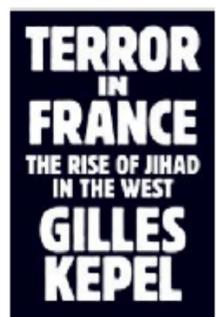
Collected Works of C.G. Jung



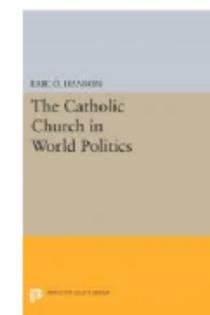
How to Solve It



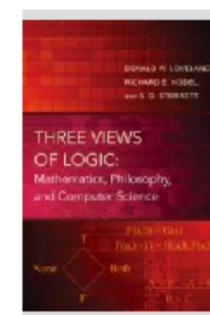
The Power of Networks



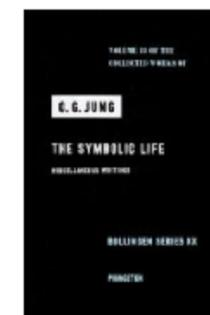
Terror in France



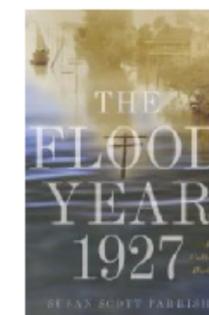
The Catholic Church in World Politics



Three Views of Logic



Collected Works of C.G. Jung



The Flood Year 1927



Drawing in Silver and Gold



The Vanishing Irish

ONLY CUSTOM MODULE: **pup_migrate**

- Includes migration of works, editions, reviews, contributors, etc.
- Handle source deletion
- Multi-CSV “join”
- SFTP + FTP support, with source change detection
- Nightly cron via queue API
- Fixed encoding
- Resolved many issues with legacy data and legacy book logic

```
$ drush migrate-status
```

Group: PUP Biblio (pup_biblio)	Status	Total	Imported	Unprocessed
pup_math_subjects	Idle	30	30	0
pup_textbooks_by_author_redirects	Idle	7	7	0
pup_catalog_by_math_subject_order_by_author_redirects	Idle	30	30	0
pup_subjects	Idle	50	50	0
pup_work_chapters	Idle	4241	4242	-1
pup_chapters_by_subject_redirects	Idle	50	50	0
pup_contrib_roles	Idle	37	52	-15
pup_contribs	Idle	10356	10357	-1
pup_editions_ebook	Idle	4285	4292	-7
pup_region_restrictions	Idle	131	131	0
pup_editions_physical	Idle	11386	11407	-25
pup_prizes	Idle	3096	3094	0
pup_series	Idle	225	225	0
pup_textbook_cats	Idle	7	7	0
pup_trans_languages	Idle	45	45	0
pup_work_contribs	Idle	16058	15941	117
pup_work_covers	Idle	7540	7560	-23
pup_work_illustrations	Idle	125	125	0
pup_work_interviews	Idle	569	357	0
pup_work_interview_by_author_redirects	Idle	5	5	0
pup_work_interview_by_title_redirects	Idle	5	5	0
pup_work_links_header	Idle	125	124	0
pup_work_links_mixed	Idle	2872	1677	95
pup_work_reviews	Idle	42328	42220	35
pup_works	Idle	8219	8231	-12

CONTRIB MODULES

- admin_toolbar
- context
- context_active_trail
- devel
- entity_reference_revisions
- metatag
- migrate_source_csv
- paragraphs
- token
- ctools
- entity_browser
- inline_entity_form
- migrate_plus migrate_tools
- pathauto
- views_slideshow
- editor_file
- redirect
- redis
- stage_file_proxy

IMPORTED BOOK FIELDS

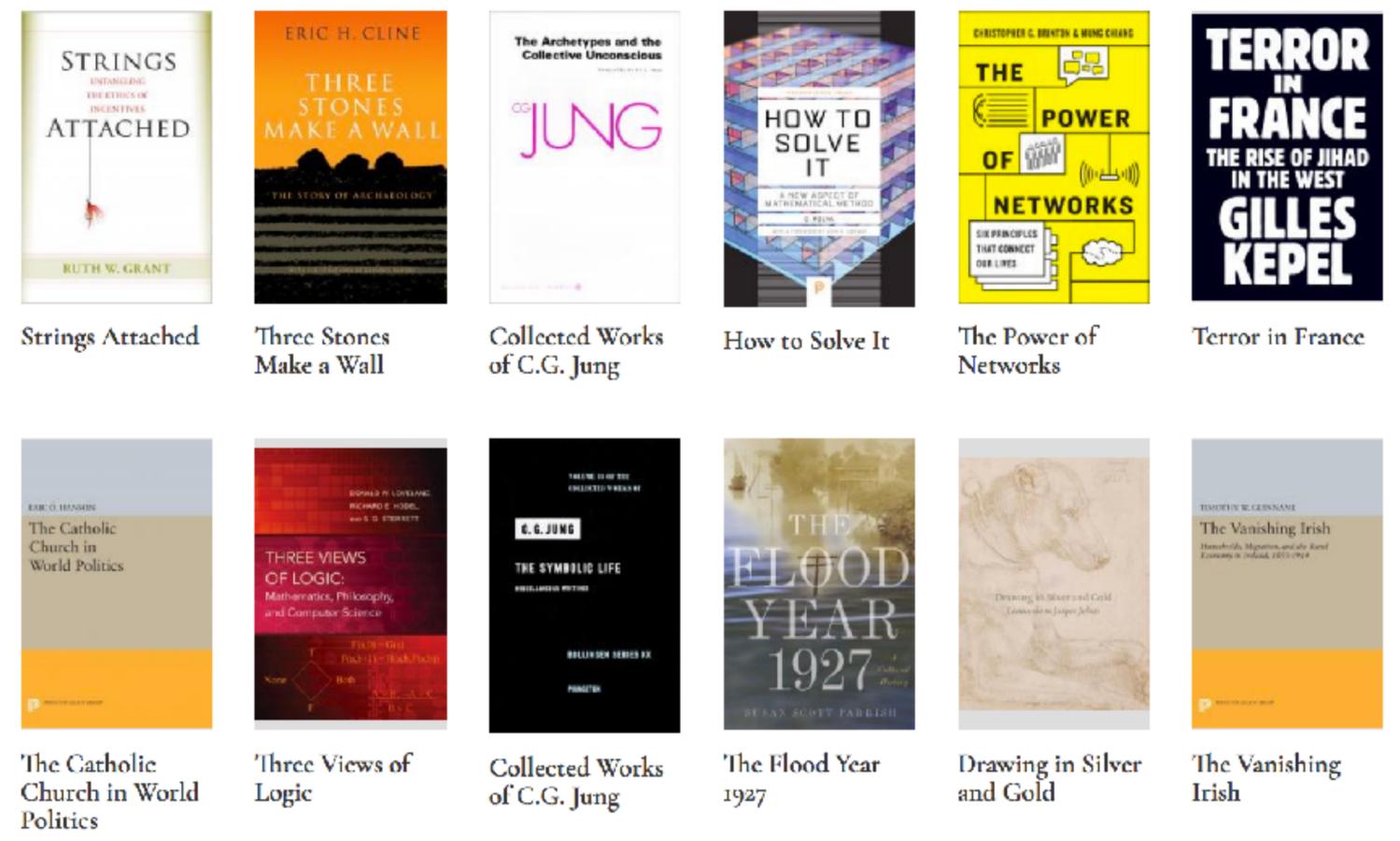
- ISBN
- Number of Pages
- Price UK/US
- Region
- Season
- Status
- Type
- Affiliation
- Audible
- Book Club
- Sub-authors
- Book ID
- Co-publisher
- Sub-title
- Table of Contents
- Cover Caption
- Cover Image
- Description
- Tagline
- Title
- Need Textbooks
- Edition Notes
- Title (formatted)
- Volume
- Primary Authors
- Math Subject
- Prior Editions
- Reviews
- Links
- Illustrations
- Chapters
- Prizes
- Interviews
- Contributors
- Subjects
- Translation language

Biblio
SQL Server

↓ Export to CSV

CSVs
on FTP

↓ Migrate to website



BOOK DATA CLEANUP

- PDF links rewriting (assets)
- Merged denormalized records for ebooks and print books
- Added publication type for book apps
- Encoding problems

The screenshot shows the Princeton University Press website for the book "Three Stones Make a Wall: The Story of Archaeology" by Eric H. Cline. The page features a navigation bar with links for BROWSE, COLLECTIONS, RESOURCES, ABOUT, PUP BLOG, and SUBSCRIBE. The book cover is displayed on the left, and the title and author information are on the right. Below the title, there is a section for "Editions" with details for the hardcover and e-book versions, including prices and ISBNs. An "Add to Cart" button is visible below the editions information.

From the bestselling author of *1177 B.C.*, a comprehensive history of archaeology—from its amateur beginnings to the cutting-edge science it is today.

In 1922, Howard Carter peered into Tutankhamun's tomb for the first time, the only light coming from the candle in his outstretched hand. Urged to tell what he was seeing through the small opening he had cut in the door to the tomb, the Egyptologist famously replied, "I see wonderful things." Carter's fabulous discovery is just one of the many spellbinding stories told in *Three Stones Make a Wall*.

Written by Eric Cline, an archaeologist with more than thirty seasons of excavation experience, *Three Stones Make a Wall* traces the history of archaeology from an amateur pursuit to the cutting-edge science it is today by taking the reader on a tour of major archaeological sites and discoveries, from Pompeii to Petra, Troy to the Terracotta Warriors, and Mycenae to Megiddo and Masada. Cline brings to life the personalities behind these digs, including Heinrich Schliemann, the former businessman who excavated Troy, and Mary Leakey, whose discoveries advanced our understanding of human origins. The discovery of the peoples and civilizations of the past is presented in vivid detail, from the Hittites and Minoans to the Inca, Aztec, and Moche. Along the way, the book addresses the questions archaeologists are asked most often: How do you know where to dig? How are excavations actually done? How do you know how old something is? Who gets to keep what is found?

Taking readers from the pioneering digs of the eighteenth century to the exciting new discoveries being made today, *Three Stones Make a Wall* is a lively and essential introduction to the story of archaeology.

Eric H. Cline is professor of classics and anthropology and director of the Capitol Archaeological Institute at George Washington University. An active archaeologist, he has excavated and surveyed in Greece, Crete, Cyprus, Egypt, Israel, Jordan, and the United States. His many books include *1177 B.C.: The Year Civilization Collapsed* (Princeton).

More about this book

A Q&A with Eric H. Cline

Resources

- [Chapter 1 \[PDF\]](#)
- [Chapter 1 \[PDF\]](#)

Reviews

"Intensely readable. . . . Cline is a winning spokesman for his field, with a warm and generous voice evocative of the best university lectures. . . . More than a few readers may feel a sudden urge to rush out to a nearby mound or midden, with spade and trowel in hand."—James Romm, *Wall Street Journal*

"Eric Cline . . . doesn't disappoint in his terrific new book!"—Steve Donoghue, *The National*

[+ show more](#)

Endorsements

"I loved this book. *Three Stones Make a Wall* is a great read filled with many interesting stories. A terrific piece of work!"—Kenneth L. Feder, author of *The Past in Perspective: An Introduction to Human Prehistory*

"This book takes your hand and leads you on a magical archaeology mystery tour across the globe. You'll meet famous archaeologists, explore legendary sites, and see the latest discoveries using new technologies. Archaeology is full of 'wonderful things,' and *Three Stones Make a Wall*, written by one of its greatest storytellers, is a must-have!"—Sarah Parcak, University of Alabama at Birmingham, winner of the 2016 TED Prize

[+ show more](#)

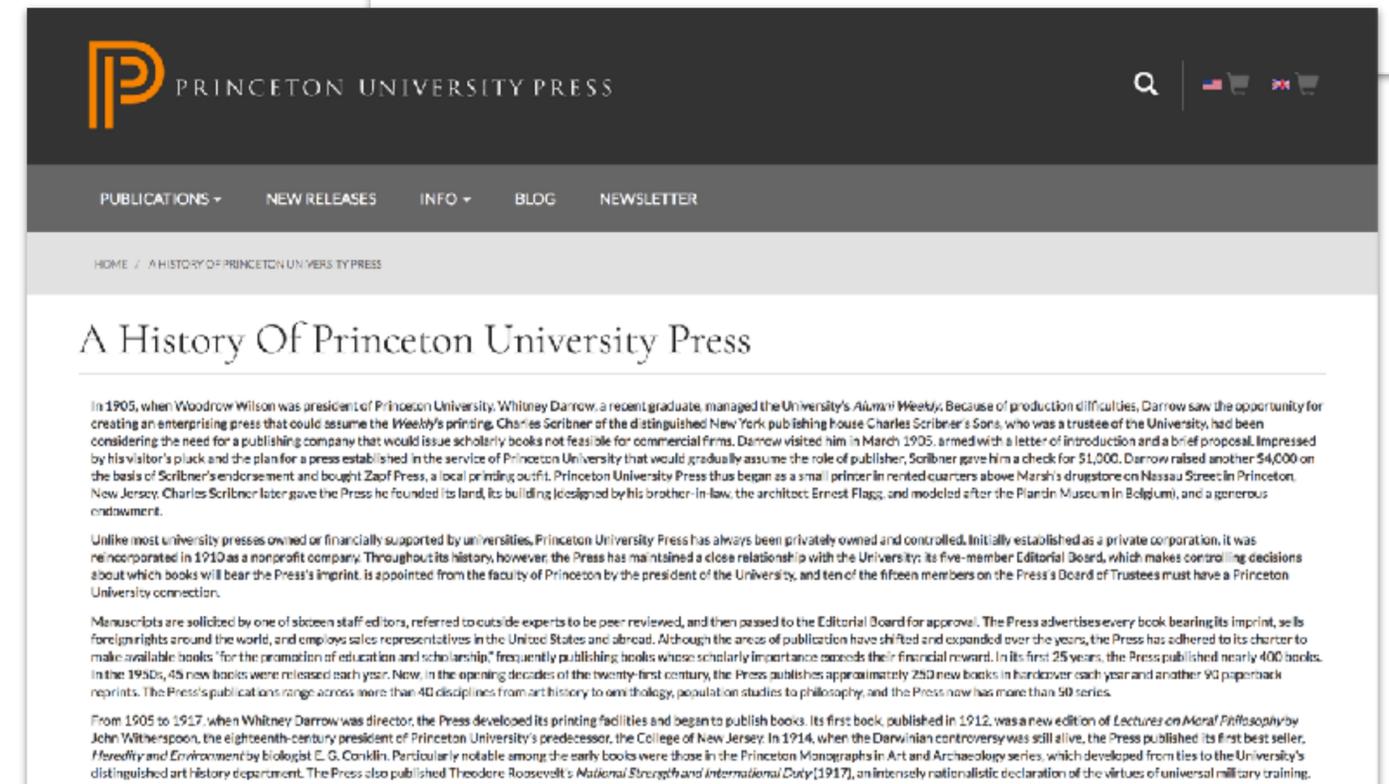
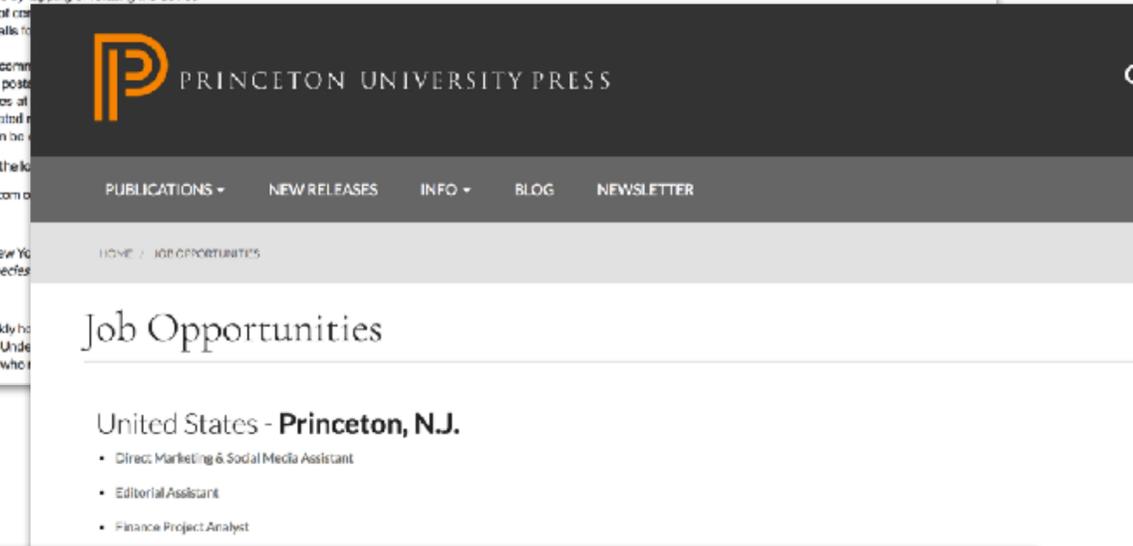
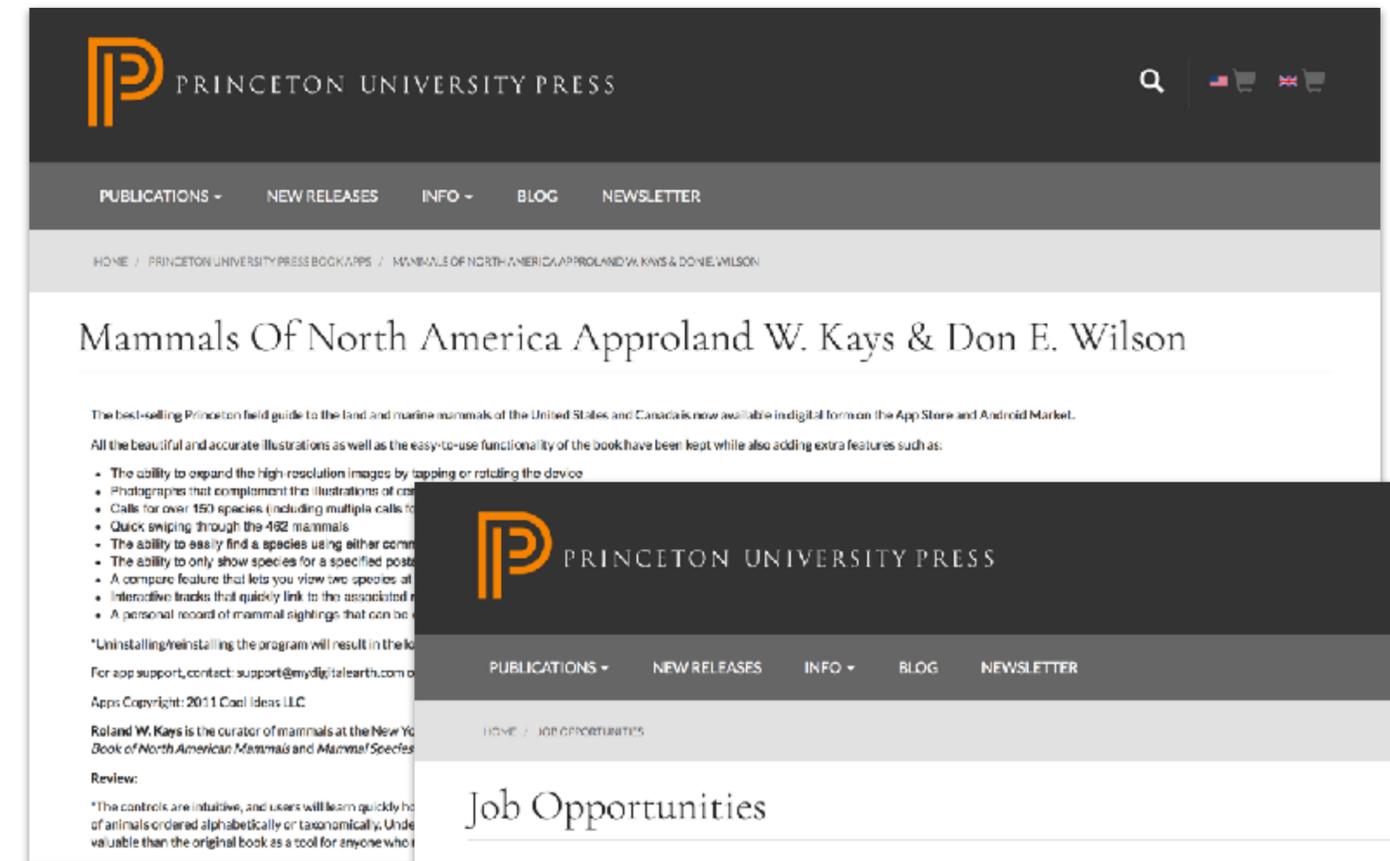
Table of Contents

Subject Areas

- [Archaeology And Ancient History](#)
- [World History / Comparative History](#)

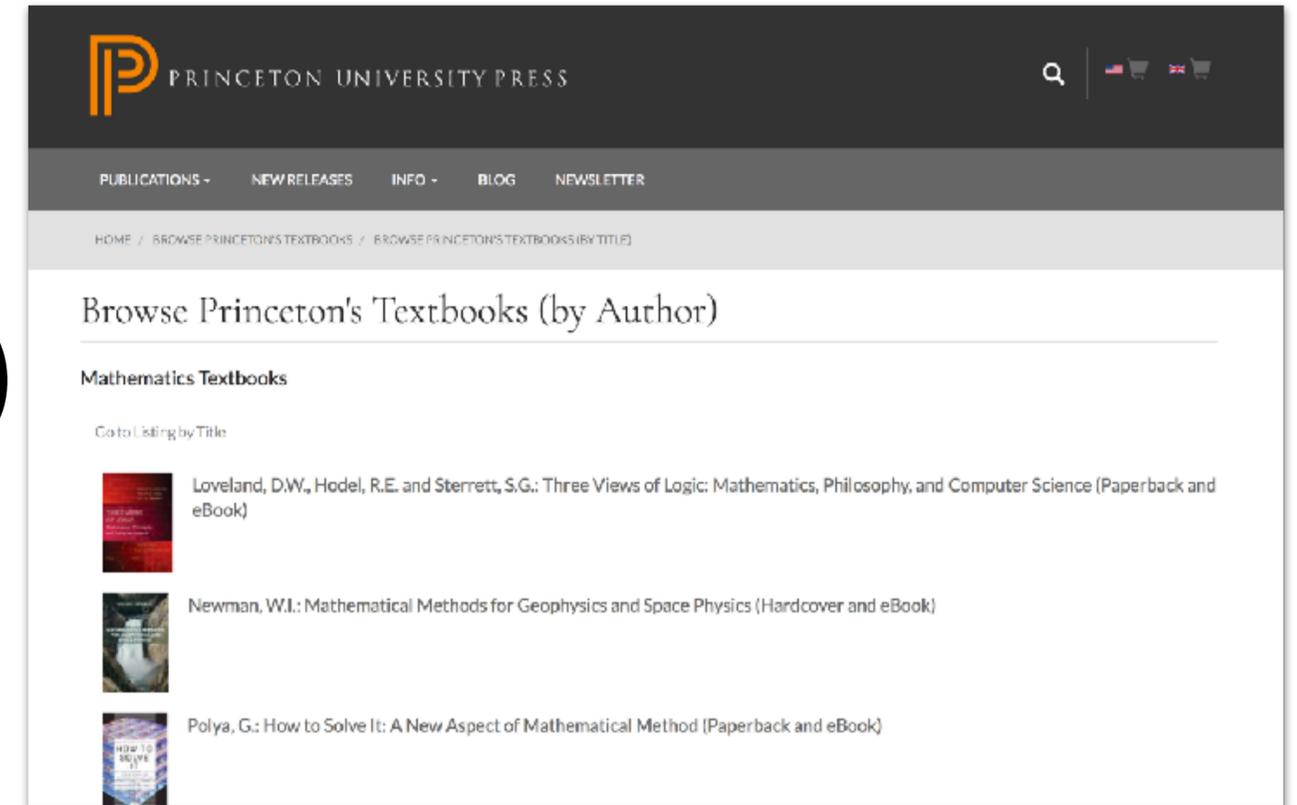
STATIC HTML MIGRATION

- Imported most-visited static pages
- Can be easily cleaned up using the Drupal website admin interface by client team
- Left other lower priority pages can be migrated manually



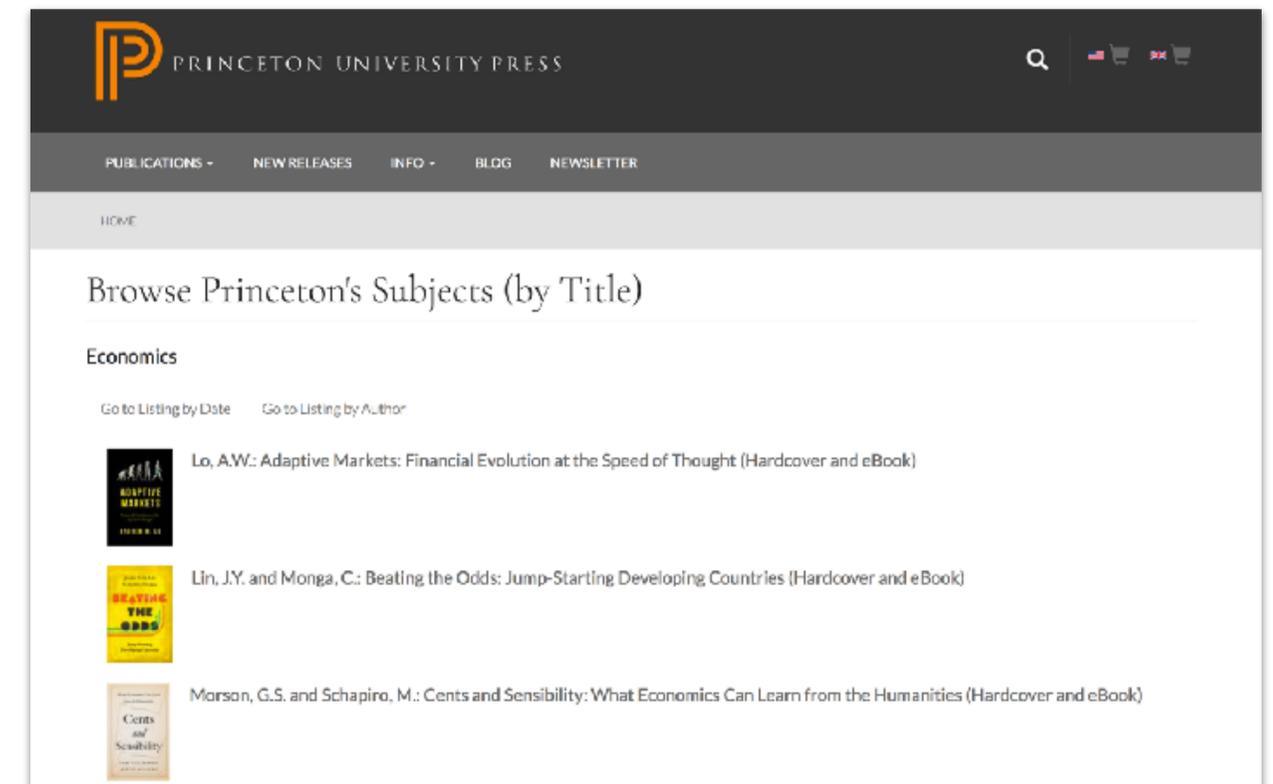
DYNAMIC LISTINGS (Views)

- Lists of books, dynamically updated after Biblio sync
- Search pages
- In future, can replace some static listings with Drupal views (eg. books published in the last month, have won a prize)

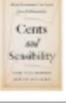


The screenshot shows the Princeton University Press website. The header includes the logo and navigation links: PUBLICATIONS, NEW RELEASES, INFO, BLOG, and NEWSLETTER. The breadcrumb trail reads: HOME / BROWSE PRINCETON'S TEXTBOOKS / BROWSE PRINCETON'S TEXTBOOKS (BY TITLE). The main heading is "Browse Princeton's Textbooks (by Author)". Below this, the section is titled "Mathematics Textbooks". There are two links: "Go to Listing by Title" and "Go to Listing by Author". Three book listings are shown:

-  Loveland, D.W., Hodel, R.E. and Sterrett, S.G.: Three Views of Logic: Mathematics, Philosophy, and Computer Science (Paperback and eBook)
-  Newman, W.I.: Mathematical Methods for Geophysics and Space Physics (Hardcover and eBook)
-  Polya, G.: How to Solve It: A New Aspect of Mathematical Method (Paperback and eBook)



The screenshot shows the Princeton University Press website. The header includes the logo and navigation links: PUBLICATIONS, NEW RELEASES, INFO, BLOG, and NEWSLETTER. The breadcrumb trail reads: HOME. The main heading is "Browse Princeton's Subjects (by Title)". Below this, the section is titled "Economics". There are two links: "Go to Listing by Date" and "Go to Listing by Author". Three book listings are shown:

-  Lo, A.W.: Adaptive Markets: Financial Evolution at the Speed of Thought (Hardcover and eBook)
-  Lin, J.Y. and Monga, C.: Beating the Odds: Jump-Starting Developing Countries (Hardcover and eBook)
-  Morson, G.S. and Schapiro, M.: Cents and Sensibility: What Economics Can Learn from the Humanities (Hardcover and eBook)

GOING LIVE

DEPLOYMENT CHECKLIST (1/2)

- Deploy on  **PANTHEON**
- Set legacy asset domain to **assets.press.princeton.edu**
- Test migrations / cron sync on Pantheon
- Ensure uploaded files stored in subdirectories per field
- Google Analytics, etc.
- Enable/disable extensions: admin_toolbar, devel, ...
- Ensure that the live site domain is white-listed as trusted host in \$settings
- Change redirects to use live domain in settings.site.inc

DEPLOYMENT CHECKLIST (2/2)

- Performance audit (frontend + backend)
- Enable page cache, CSS/JS aggregation
- Broken link checker, Fast 404
- Soft launch: DNS, remove HTTP Auth
- Pantheon Launch Checklist: <https://pantheon.io/docs/guides/launch>
- Setup backups & recovery
- Monitoring (Pingdom)
- **Admin training & docs**

POST-LAUNCH



FUTURE WORK

- Support agreement
- Friendly URLs & redirects
- Advanced search
- Convert static pages to dynamic pages, Webforms
- More admin training + UI improvements
- SEO enhancements - social media tags, XML sitemap
- Annual sale (discounts), shopping cart simplification
- Additional homepage content (eg. news in slideshow, events)
- **Migration to VirtuSales Biblio**
- **Rebranding/ redesign**

NOT SO FAST...



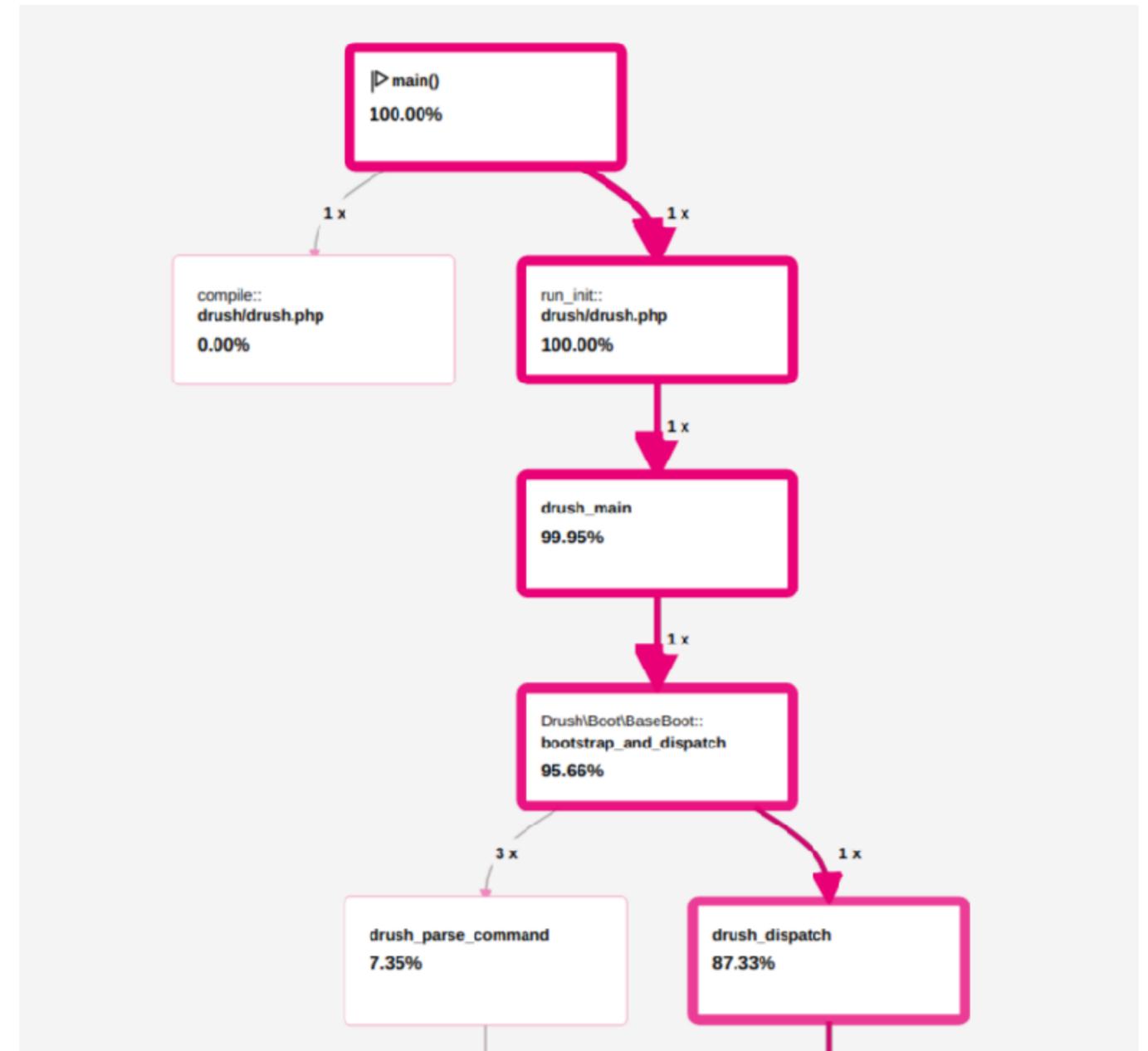
LOGGING AND MONITORING

- We built verbose logging to track migration progress and performance.
- Kept an eye on the log messages for a month or two.
- Set up a script to track all CSV files and push their diff to GitHub.
- Found newer corner cases and problems we had never imagined!

TYPE	DATE	MESSAGE
pup_migrate	02/02/2018 - 08:32	Migration pup_work_interview_by_title_redirects:...
pup_migrate	02/02/2018 - 08:32	Processed 0 items (0 created, 0 updated, 0 failed, 0...
pup_migrate	02/02/2018 - 08:32	Migration pup_work_interview_by_title_redirects:...
pup_migrate	02/02/2018 - 08:32	Migration pup_work_interview_by_author_redirects:...
pup_migrate	02/02/2018 - 08:32	Processed 0 items (0 created, 0 updated, 0 failed, 0...
pup_migrate	02/02/2018 - 08:32	Migration pup_work_interview_by_author_redirects:...
pup_migrate	02/02/2018 - 06:37	Migration pup_works: Imported successfully in attempt 2.
pup_migrate	02/02/2018 - 06:37	Processed 26 items (0 created, 26 updated, 0 failed, 0...
pup_migrate	02/02/2018 - 06:35	Processed 5 items (0 created, 5 updated, 0 failed, 0...
pup_migrate	02/02/2018 - 06:35	Processed 1 item (0 created, 1 updated, 0 failed, 0...
pup_migrate	02/02/2018 - 06:35	Processed 0 items (0 created, 0 updated, 0 failed, 0...
pup_migrate	02/02/2018 - 06:35	Processed 2 items (0 created, 2 updated, 0 failed, 0...
pup_migrate	02/02/2018 - 06:35	Processed 1 item (0 created, 1 updated, 0 failed, 0...
pup_migrate	02/02/2018 - 06:35	Processed 1 item (0 created, 1 updated, 0 failed, 0...
pup_migrate	02/02/2018 - 06:35	Processed 0 items (0 created, 0 updated, 0 failed, 0...

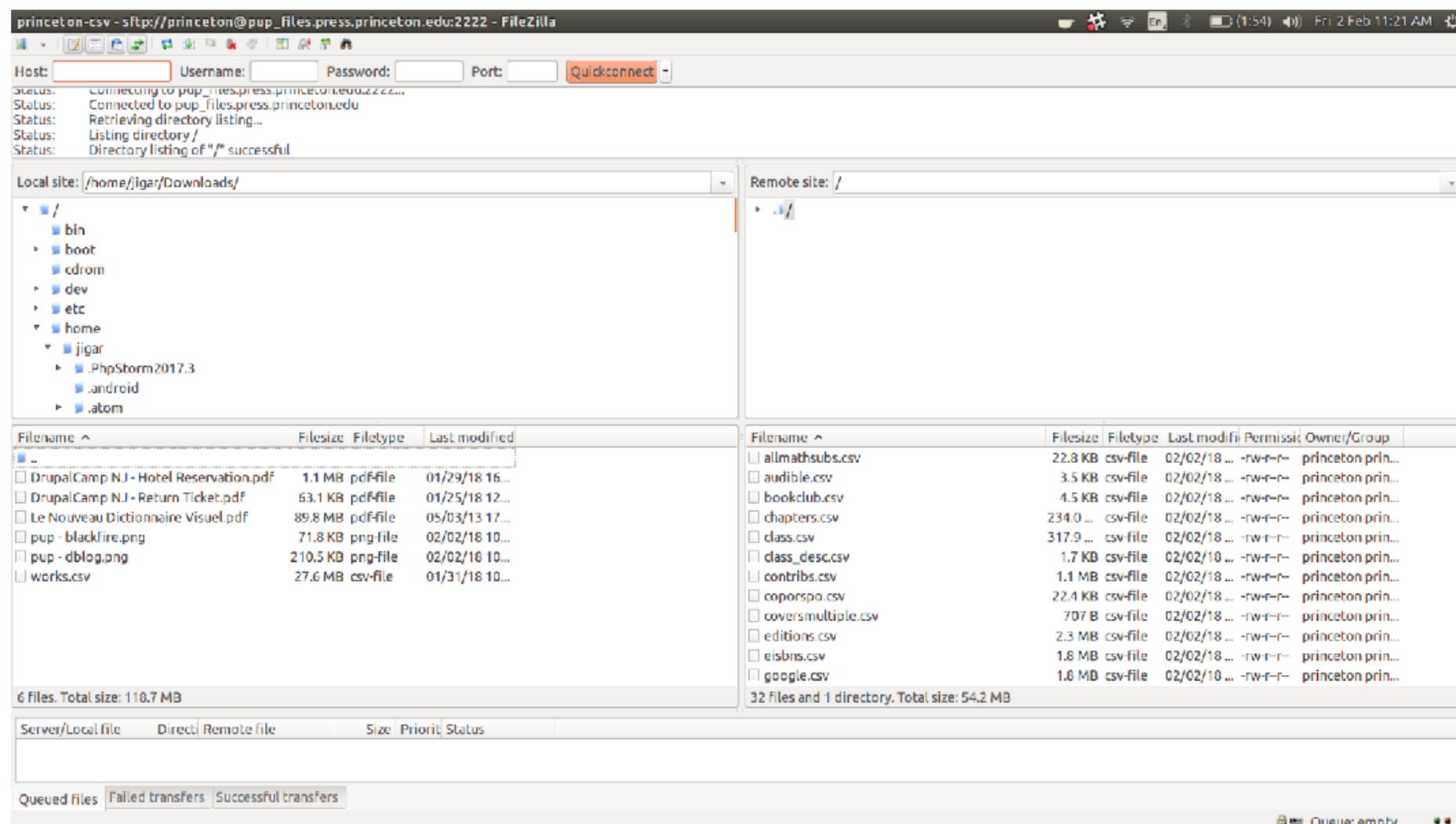
PROFILING WITH BLACKFIRE.IO

- Behold the bug hides, disguised as a feature
- Blackfire lets you see what goes on under the hood
- We found some issues which were making the migrations very very slow



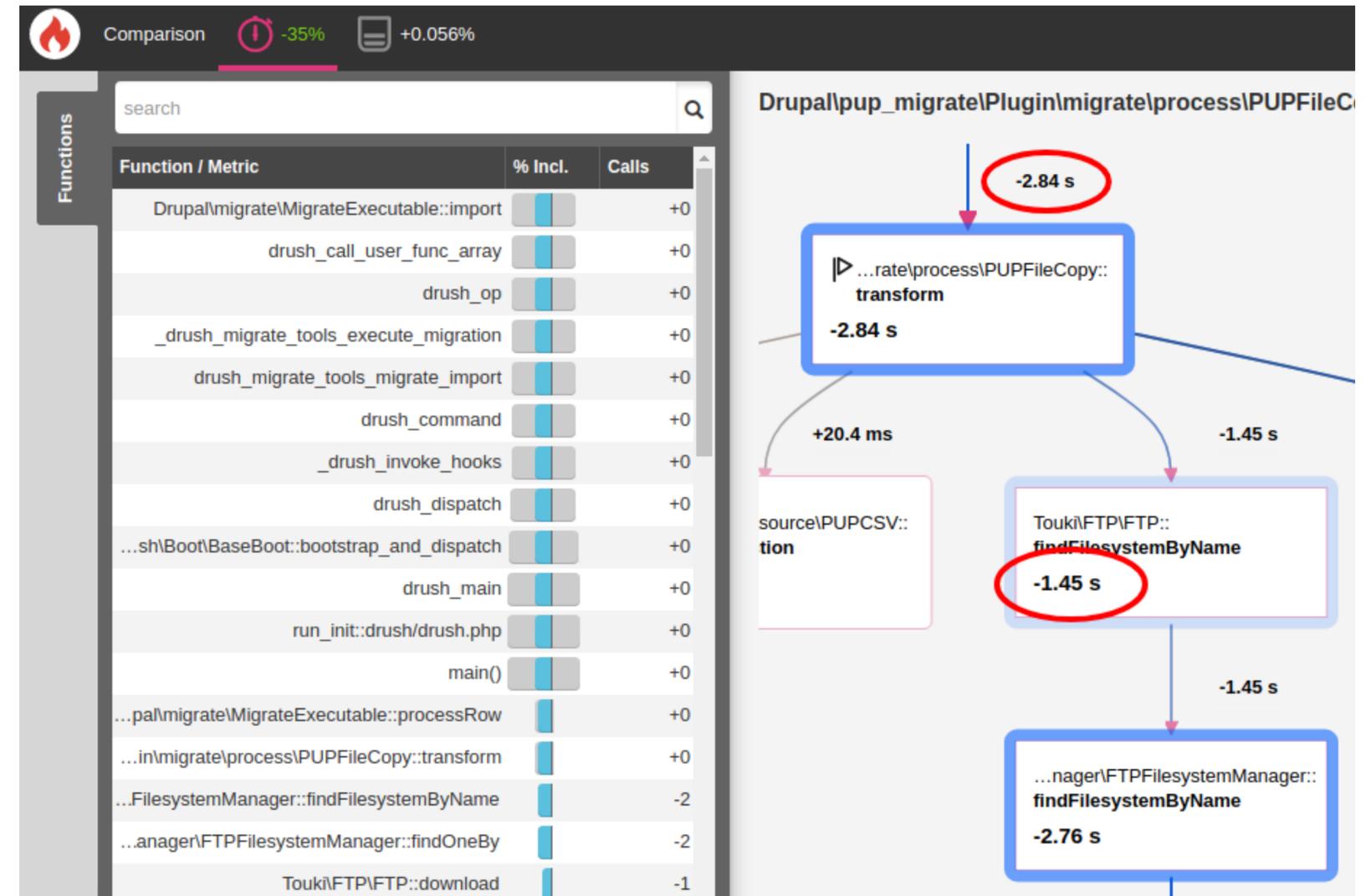
SFTP FILE DOWNLOAD COUNT? OVER 9,000!

- When a migration starts, the relevant CSV file is downloaded
- When working with certain plugins (migration_lookup), the same file was being downloaded once per row for ~10,000 rows
- We fixed this immediately and there was over ~80% improvement



DIAGNOSING A 3RD PARTY LIBRARY

- We were using a 3rd party library for downloading files over SFTP
- There were 9,000 files in an FTP directory
- For downloading one file, the 3rd party library was processing all files in the directory and then returning the one we wanted
- We overrode some functionality of the library and gained ~50% improvement!



THE NODE LOAD CODE

- While migrating books, we had to generate some text using various author names
- The code required us to load some “nodes” in a specific code file (source plugin)
- With Blackfire we realized it would be better to move the code from a “source plugin” to a “process plugin”
- After this change, migration became 70%+ faster!

```
ps://press.princeton.edu/titles/11282.html - Google Chrome
Feature #14863: M... Search results - Go... Drupal 8 Migration... Acharya, A., Blackw... view-source:https://...
view-source:https://press.princeton.edu/titles/11282.html
cess called behavioral path dependence. While legislation such as the
ortunity and reducing educational disparities, southern slavery has h
itics that can still be felt today.A groundbreaking look at the ways
onstrates how social beliefs persist long after the formal policies t
ta property="og:image" content="https://press.princeton.edu/sites/def
ta name="Generator" content="Drupal 8 (https://www.drupal.org)" />
ta name="MobileOptimized" content="width" />
ta name="HandheldFriendly" content="true" />
ta name="viewport" content="width=device-width, initial-scale=1.0" />
ta name="isbn13" content="9781400889976, 9780691176741" />
ta property="books:isbn" content="9781400889976, 9780691176741" />
nk rel="shortcut icon" href="/themes/custom/princeton/favicon.ico" ty
nk rel="canonical" href="/titles/11282.html" />
nk rel="shortlink" href="/node/43623" />
nk rel="revision" href="/titles/11282.html" />

<title>Acharya, A., Blackwell, M. and Sen, M.: Deep Roots: How Slave
ss</title>
<link href="https://fonts.googleapis.com/css?family=Cormorant+Garamo
<link href="https://fonts.googleapis.com/css?family=Lato:300,400,700
<link href="https://maxcdn.bootstrapcdn.com/font-awesome/4.7.0/css/f
<link rel="stylesheet" href="/sites/default/files/css/css_hmk1VucDPp
nk rel="stylesheet" href="/themes/custom/princeton/css/bootstrap.min.
nk rel="stylesheet" href="/sites/default/files/css/css_YhozgjiE3oi0aW

-[if lte IE 8]>
ript src="/sites/default/files/js/js_VtafjXmRvoUgAzqzYTA3WrjKx9wcWhjP
endif]-->

<!-- Google Analytics -->
<script type="text/javascript">
  (function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||f
```

MSSQL AND RANDOMNESS

- PowerShell generated CSV files from a bunch of SQL statements
- MSSQL doesn't guarantee fixed ordering with a loose ORDER BY clause
- Every night, records were being rearranged and migrations were importing things even though nothing had actually changed!
- We strengthened the ORDER BY clause to overcome this issue

Commits on Feb 2, 2018

updated Fri Feb 2 01:05:21 EST 2018

 rdiff-backup committed 11 hours ago

Commits on Jan 31, 2018

updated Wed Jan 31 01:05:21 EST 2018

 rdiff-backup committed 2 days ago

Commits on Jan 30, 2018

updated Tue Jan 30 17:05:03 EST 2018

 rdiff-backup committed 3 days ago

updated Tue Jan 30 16:05:03 EST 2018

 rdiff-backup committed 3 days ago

updated Tue Jan 30 01:05:19 EST 2018

 rdiff-backup committed 3 days ago

updated Tue Jan 30 00:05:07 EST 2018

 rdiff-backup committed 4 days ago

PROJECT MANAGEMENT

PROJECT TEAM



Matt Corks
Technical PM



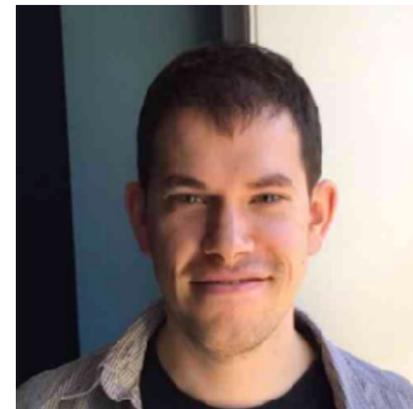
Jigar Mehta
Backend dev



Jorge Diaz
Front-end dev



Matt Wahba
Designer



Dave Vasilevsky
Backend dev



Alex Parker
QA (Intern)



Alex Dergachev
Business lead



Suzanne Dergacheva
Training

CLOSE COLLABORATION

- 7 calendar days of onsite meetings in Princeton
- 5 demos (in person or Zoom)
- Single point of contact (PUP + EW)
- Backlog of tasks with estimates for client prioritization
- Disciplined client control of scope

- ✓ Update math series & catalog listings 3 A Ann LS Louise S.
- ✓ Clarify display of per-edition fields 1 A Ann LS Louise S.
- ✓ Clarify ISBN hyphenation 1 A Ann LS Louise S.
- ✓ Clarify image handling 26 A Ann
- ✓ Clarify website edition visibility rules 11 A Ann LS Louise S.
- ✓ Clarify rules for book page titles in document head 2 A Ann LS Louise S.
- ✓ Ensure all print editions have a binding from a defined list 4 A Ann LS Louise S.
- ✓ Ensure all reviews have a type from a defined list 2 A Ann LS Louise S.
- ✓ Ensure all entries in links table have a position 1 A Ann LS Louise S.
- ✓ Run MS SQL export script 8 ML Marc L.
- ✓ Review "PUP Script Analysis" spreadsheet 11 A Ann
- ✓ Clarify inconsistencies in the contributor table 3 A Ann
- ✓ Clarify interview types 9 A Ann
- ✓ Clarify how /chapters are generated 19 A Ann
- ✓ Clarify use of /email folder 2 A Ann
- ✓ Review list of HTML static assets to import 4 A Ann LS Louise S.
- ✓ Provide EW with Google accounts for accessing shared Google docs 5 A Ann

TIMELINE

Week of	High-level Task	Tasks performed (EW)	Deliverables from PUP
May 8	Content Audit & Migration PoC	Proof of concept, initial content analysis	Approval of initial content analysis (May 12)
May 15	Content Audit & Migration	Secondary content analysis, report and onsite meeting	Approval of report and content analysis
May 22	Discovery & Content Audit	Final content analysis (dynamic vs. static pages)	Clarification of book data structure
May 29	Site Building		Clarification of special cover image handling
June 5	Site Building & Migration		
June 12	Theming & Migration	Access to demo site showing to book and static page migration	Feedback on migration, styling, and menu structure
June 19	Theming & Migration	Presentation of work done to date, plus plan for work needed to launch site	Testing IA; Content cleanup
June 26	Theming & IA refinement	Completion of launch essential tasks and adjustments based on feedback received	Feedback on import and prioritization, content cleanup, image processing, moving multimedia resources to external platforms
July 3	Theming & IA refinement	"	"
July 10	QA & Fixes	"	"
July 17	QA & Fixes	"	"
July 24	QA & Fixes	"	"
July 31	Pre-deployment & content	Deployment to Pantheon staging	
August 7	Content		Content fixes
August 14	Content		Content fixes
August 21	Beta-launch	Test in Pantheon "live mode"	DNS change

DISTRIBUTION OF WORK

Role	Month 1	Month 2	Month 3	Month 4	Month 5	Total time
Frontend	1%	10%	12%	6%	0%	28%
Backend	4%	12%	7%	9%	5%	36%
Coordination, code review	1%	14%	15%	5%	2%	36%
Total time	5%	35%	33%	19%	8%	100%

SUMMARY / CHALLENGES

- Successful migration of 50,000 records, thousands pages, validation of Drupal platform, stable sync
- **Phases:** Scoping, Design, Dev, Migration, Content, Deployment, Maintenance
- **Gotchas:** Migrations in cron, Legacy complexity, Content cleanup, Editor interface
- **PM:** Timeline, Scoping phase, Budget expectations



Upcoming Drupal Trainings

MAY 7-11, IN-PERSON

Drupal 8 Training in Princeton NJ

FEB 5-8, ONLINE

Drupal 8 Module Development

FEB 20-23, ONLINE

Migrate to Drupal 8

MARCH 1-2, ONLINE

Drupal 8 Site Building

MARCH 12-15, ONLINE

Drupal 8 Theming

evolvingweb.ca/training

training@evolvingweb.ca

Thank you

 @dergachev

 @jigarius