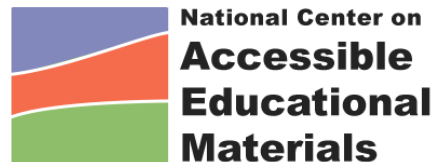


Designing for Accessibility with POUR

Monday June 10, 2019



Today's Presenters!



Rachael Bower
Director/PI
AccessATE & ATE Central
University of Wisconsin-Madison



Luis Pérez
TA Specialist
National AEM Center at
CAST

Poll: What is your reason for joining us today?

- A. I am new to accessibility and want to learn more about the topic
- B. I have students with disabilities enrolled in my courses and want to learn how to create accessible content for them.
- C. I lead others who develop content and want to provide my team with tips and resources on accessibility
- D. Other: Please share in the chat

ATE: Advanced Technological Education

- NSF Funding – focus on technician education; program development; professional development; community colleges
- Approximately 311 projects & centers currently funded
- Not just a funding program; a true community
- Variety of cross-cutting support for community members baked into the program

About AccessATE

AccessATE supports the work of the NSF-funded Advanced Technological Education (ATE) projects and centers in making the materials and activities they develop more accessible for all students and faculty, including those with disabilities.

The project aims to increase awareness and understanding of accessibility requirements and provide guidance, tools, and support that offers solutions and helps achieve compliance with accessibility standards.



AEM Center Mission and Goals

To build the capacity of

- states and districts,
- postsecondary institutions,
- workforce development agencies,
- publishers,



and other stakeholders to increase the **availability and use** of high-quality accessible materials and technologies that support **improved learning opportunities and outcomes** for learners with disabilities.

CAST Mission and Goals

CAST is a multifaceted organization with a singular ambition: **Bust the barriers to learning** that millions of people experience every day.

We do this by helping educators and organizations apply insights from the learning sciences and leading-edge practices to educational design and implementation.



Poll: What is your current role?

- A. I belong to an ATE project or center
- B. I am seeking ATE funding
- C. I am at a non-ATE institution
- D. Other: Please share in the chat

The “What” and “Why” of AEM

What does accessibility mean?

Why is accessibility important?

What does accessibility mean to you?

Please share your answers in the chat.



Functional Definition of Accessibility

A person with a disability can

acquire the same
information

engage in the same
interactions

enjoy the same
services

equally effective,
equally integrated,
with substantially
equivalent ease of use

as a person without a disability

Accessibility and Universal Design for Learning

“The purpose of education is not to make information accessible, but rather to teach learners **how to transform accessible information into useable knowledge.**”

Introduction to the [UDL Guidelines](#) (CAST, 2012)



udlguidelines.cast.org | © CAST, Inc. 2018 | Suggested Citation: CAST (2018). Universal design for learning guidelines version 2.2 [graphic organizer]. Wakefield, MA: Author.

Key Principles of Non-Discrimination – ADA and Section 504

Equal
Treatment



Equal
Opportunity



Students with Disabilities with Bachelor's Degrees



16.7%
of adults with disabilities
have a bachelor's degree or
higher

compared to
34.9%
of adults without disabilities

source: U.S. Census Bureau, 2015

There is a significant
workforce gap between
people with disabilities and
people without:

20.1% vs. 68.6%

source: U.S. DOL, May 2018



Poll: Can something be 100% accessible?

A. Yes

B. No

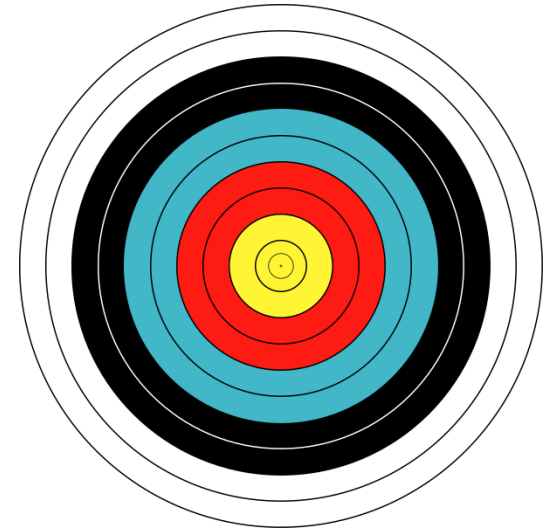
C. Not sure



Not “is it accessible”?

But:

- To Whom?
- Under what conditions?
- For which tasks?



What “accessible” means for materials and technologies

Accessible Materials

Information or content to be learned

Designed or enhanced in a way that makes them usable by the widest possible range of learner variability regardless of format

Accessible Technologies

Hardware or software that delivers content

- Usable by people with a wide range of abilities and disabilities
- Either directly usable without AT or made usable with it

Material-Technology in Accessible Harmony



Learner reads on a device developed with accessibility options

- Display customization
- Closed captions
- Video description
- Built-in screen reader
- Text to speech
- Bluetooth enabled

Personalizing the Reading Experience



▶ AEM in Action

AEM and the Digital Shift

▶ Acquisition of AEM

▼ Use of AEM

▼ Personalizing the Reading Experience

Display Options

Text to Speech

Digital Reading Technologies

Audio-Supported Reading

▶ Teaching with Accessible Video

▶ Specialized Formats for Print

▶ Assistive Technology & AEM

▶ Decision Tools

Personalizing the Reading Experience



Learners have many options for customizing the reading experience to suit their individual needs. As an educator it is important to ensure there is a good match between the features included in a reading tool and the needs of each learner. This determination requires careful observation and the collection of information over some time in order to make an informed decision that leads to the best outcomes for the learner.

The good news is that many of the features that previously required the purchase and installation of specialized software are now often included as standard options on the devices many learners already own. This makes the process of finding a good feature match for a learner that much easier (and less costly)..

In this section, we have organized the features for customizing the reading experience into two broad categories:

- [Display options](#) that allow learners to adjust the content within the same media in order to make the information easier to see and process. These options include text resizing, font selection, and spacing adjustments.
- [Text to speech](#) to transform the information into a different medium ([audio](#)) in order to support challenges with decoding or allow the information to be consumed on the go without the need to look at a screen.

Note: The mention of a particular product in this section does not represent endorsement by the [AEM](#) Center. Information about products is only provided as a starting point for your own research into reading tools and their features. To view the most up to date information on any individual tool, make sure to follow the link to the developer's website.

The “How” of AEM

Tips to make your documents more accessible and inclusive

Advice from Maya Angelou

“Do the best you can until you know better. Then when you know better, do better.”

POUR on the Accessibility: WCAG

Web Content Accessibility Guidelines 2.1

POUR

Perceivable | Operable | Understandable | Robust



 National Center on
Accessible Educational Materials

#aem4all

Leveraging Resources: Creating Accessible Materials from the Start

Designing for Accessibility with POUR



Many of the learning materials educators use in the classroom are self-created. This has been made possible by the greater availability and improved ease of use of authoring tools. These tools now often include options for adding [accessibility](#) into the content creation workflow, and standards such as the [Web Content Accessibility Guidelines \(WCAG\)](#) [↗](#) provide guidance for how to do so. WCAG, which is now at version 2.0, is the international standard for making web content accessible. It is the foundation for many national accessibility laws, including [Section 508](#) [↗](#) in the U.S.

The WCAG guidelines are written in technical language that can be confusing to even veteran developers. Fortunately, they can be distilled into a set of simpler principles, as captured by the acronym **POUR**, that define four qualities of an accessible user experience.

Designing for Accessibility with POUR



POUR: Perceivable

Can everyone see and hear the content?

How: Include alternative text for visuals, captions and transcripts for videos



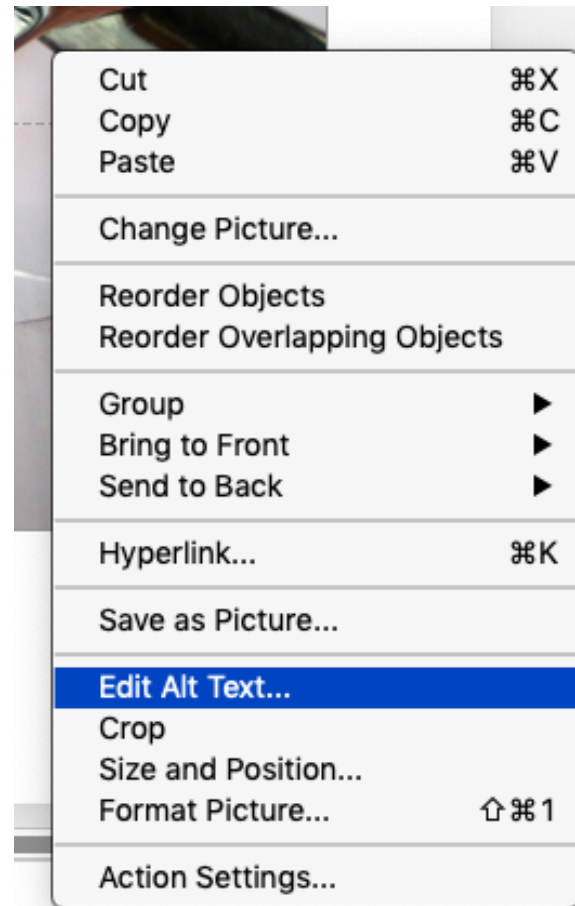
Syllabus: Faculty Introduction



Instructor: Michelle Benson-Young
Email: mbensonyoung@college.edu
Phone: (555) 381-2281
Twitter: @math114
Skype name: MBenson-Young

Add Alternative Text (Office 365)

1. Right-click on image and choose Edit Alt Text.
2. Enter your description manually or select “Generate a Description for Me” to use Artificial Intelligence
3. Alternative: Select “Mark as decorative” if the image is not required for understanding



Add Alternative Text (Office 365) – Step 2

Alt Text ✕

How would you describe this object and its context to someone who is blind?

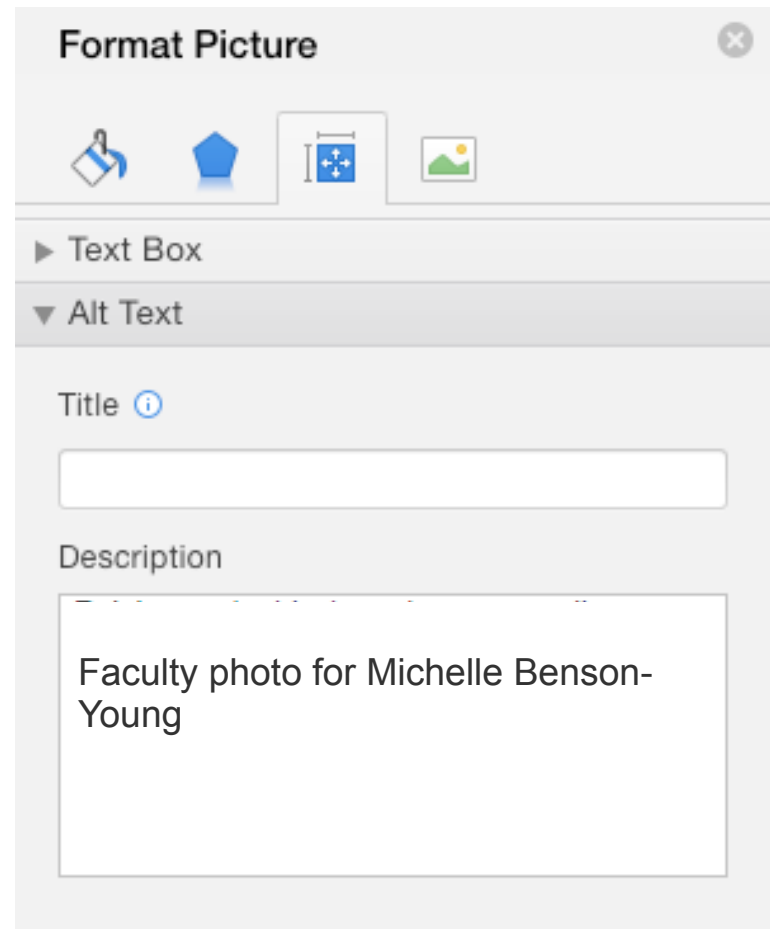
(1-2 sentences recommended)

Faculty photo for Michelle Benson-Young

Mark as decorative

Add alternative text (Older versions of MS Office)

1. Right-click on image and choose Format Picture.
2. Select the Size and Position tab (third from the left).
3. Use the **Description** field to provide alternative text.



Basic Guidelines for Image Description

- First, understand the purpose of the image
- Second, start with a broad overview, the big picture
- Third, focus on a few relevant details (see Purpose) and describe any important relationships

Quality Image Descriptions

- [WebAIM: Alternative Text](#)
- [An alt Decision Tree](#) (WAI)
- [DIAGRAM Center](#) (more complex images)

AEM Center Resource: Teaching with Accessible Video



▶ **AEM in Action**

AEM and the Digital Shift

▶ **Acquisition of AEM**

▼ **Use of AEM**

▶ Personalizing the Reading Experience

Digital Reading Technologies

Audio-Supported Reading

▼ **Teaching with Accessible Video**

Why Is Accessible Video Important?

What Makes for High Quality Accessible Video?

How Do You Create Accessible Video?

Accessible Math

▶ Specialized Formats for Print

▶ Assistive Technology & AEM

▶ **Decision Tools**

Teaching with Accessible Video



Video is the way many of us not only consume content for entertainment but also learn and access information. For students who have grown up in the age of mobile devices, with their powerful cameras and ubiquitous connectivity, video is also an important method of communication and self-expression. To be relevant to the interests of today's youth, education should incorporate a variety of media, including video.

In this section, you will find resources to help you enhance and enrich your teaching with accessible videos that include captions and/or audio description. Using a variety of media for teaching can support all three [Universal Design for Learning](#) (UDL) principles of multiple means of engagement, representation and action and expression:

- Engagement: Video can be a powerful tool for engaging learners by recruiting and sustaining their interest around a particular topic in a way that print might not.
- Representation: Video can provide another option for learners who struggle with print to access and interpret information.
- Action & Expression: Video creation can provide learners with additional options for demonstrating their understanding in ways that tap into their creativity and enhance relevance and authenticity.

This section includes the following pages:

- [Why is accessible video important?](#)
- [What makes for high quality accessible video?](#)
- [How do you create accessible video?](#)

Before you continue to the subpages of this section, there are a few key terms you may want to review to make sure we are all speaking the same language when it comes to accessible media.

Questions About Perceivable?



POUR: Operable

Can everyone navigate the content with ease?

How: Use styles for section headers, create descriptive links



3 Benefits of Using Styles

- Provide in-page navigation for screen reader users
- Ensure consistency (change style once to see changes cascade through document)
- Reveal the structure of the document

Syllabus: Section Headers

Textbook

Foundations of Algebra, 3rd Ed. (2010)

by Ross, Messier, & Kram

If you need an accessible version of this text, please contact the Disability Support Services office.

Course Web Site

All students must log onto the course web site several times each week. Here you will be able to engage in online discussions with classmates, submit assignments, and view your grades and progress.

Mark up the document with styles

Apply styles to indicate section headings
(should be descriptive and unique)



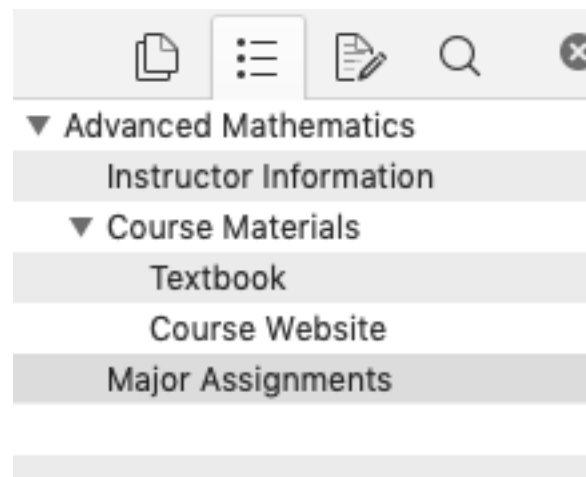
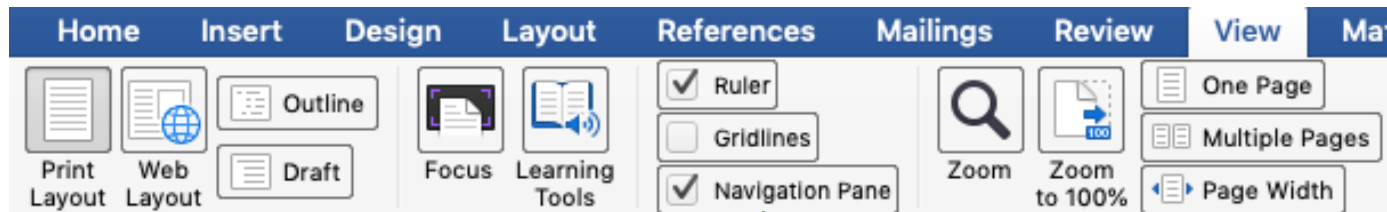
Styles should follow a logical order

Nest styles properly to provide a meaningful outline of the content.

- H1 – Advanced Mathematics
 - H2 – Instructor Information
 - H2 – Course Materials
 - H3 - Textbook
 - H3 – Course Website
 - H2 – Major Assignments
 - H3 – Tests
 - H3 – Final Project

Check your work

Use the Navigation pane (found under View) to simulate how a screen reader user navigates



Create descriptive hyperlinks

Screen reader users may access the links on a list, without the rest of the for context. Which of these two links takes you to the Course Website?

- [Click Here](#)
- [Click Here](#)

Let's try that again

Let's try that again, this time with more descriptive text. Which of these links takes you to the Course Website?

- [Course Textbook](#)
- [Course Website](#)

Avoid raw URLs

Reading the following URL would be confusing to a screen reader user:

<https://docs.google.com/presentation/d/1I3lg6CSQYDw53H-b77210XYPRWt3u-iFqqD9RRD0LXY/edit?usp=sharing>

Let's make it more descriptive:

[Course Syllabus](#) (PDF)

Questions About Operable?



POUR: Understandable

Is the language appropriate for my audience?

How: Use plain language and check the readability level



Use online tools to check readability level

The logo for Readability Analyzer features a stylized sunburst or fan shape composed of several short, parallel lines radiating from a central point.

Readability Analyzer

Estimates the readability of a passage of text using the Flesch Reading Ease, Fog Scale Level, Flesch-Kincaid Grade Level, and other metrics.

Hemingway App makes your writing bold and clear.

POUR: Robust

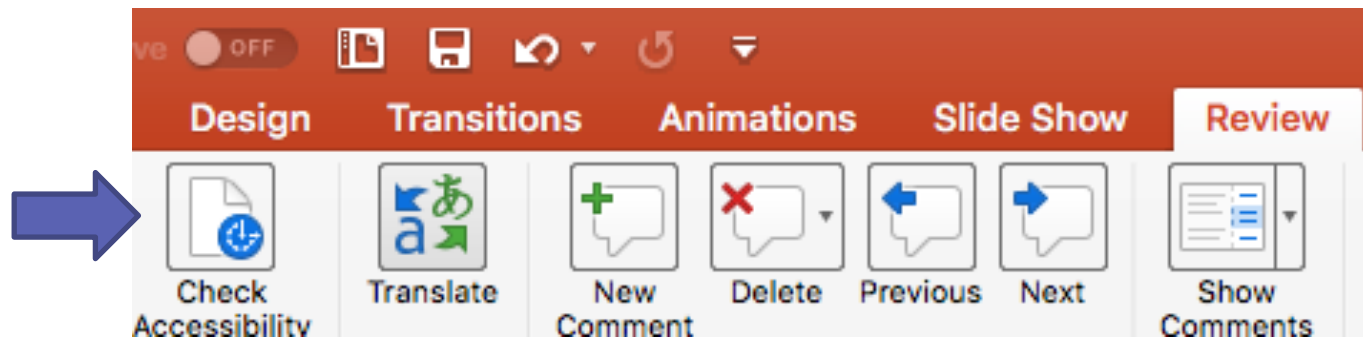
Does my content follow best practices?

How: Perform an accessibility check



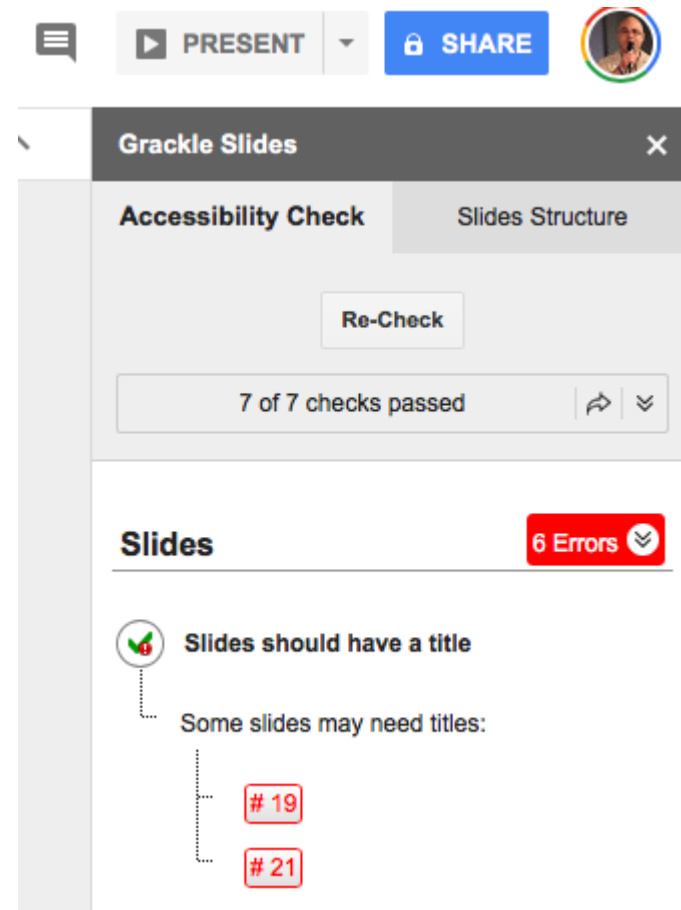
Run the Accessibility Checker

Found in the Ribbon under Review.



Use Grackle for Google

[Grackle](#) will perform an accessibility check and provide tips for addressing errors.



The screenshot shows the Grackle Slides interface. At the top, there are buttons for 'PRESENT' and 'SHARE', along with a user profile picture. Below this is a 'Grackle Slides' panel with two tabs: 'Accessibility Check' (selected) and 'Slides Structure'. A 'Re-Check' button is visible. A status bar indicates '7 of 7 checks passed'. Below this, a 'Slides' section shows '6 Errors'. The first error is 'Slides should have a title', with a note that 'Some slides may need titles:' and a list of slide numbers #19 and #21.

AEM Center Resources

Designing for Accessibility with POUR



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Designing for Accessibility with POUR



What will your next steps for creating more accessible materials?



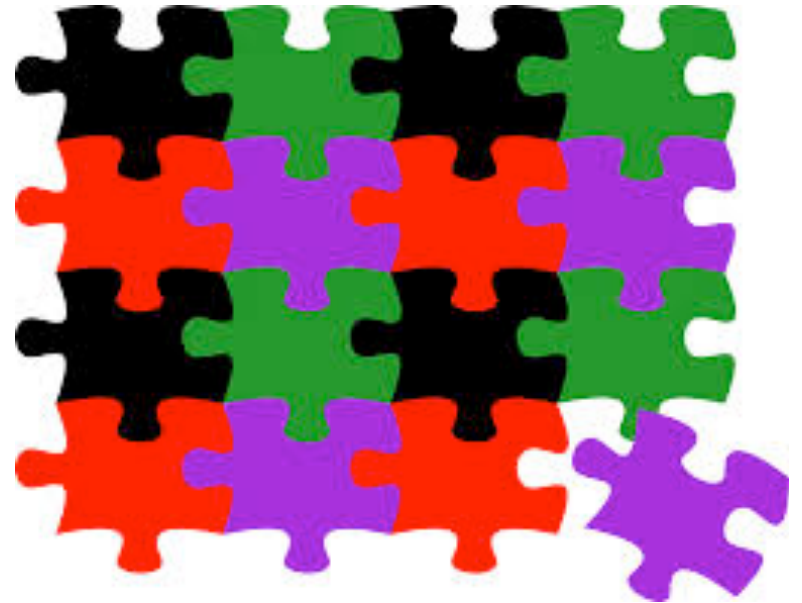
Connect with the AEM Center

- Email us at aem@cast.org
- Follow us on Twitter
 - @AEM_Center
- Like us on Facebook
 - @AEMCenter



Connect with AccessATE

- Visit us at -
<https://accessate.net>
- Email us at
info@accessate.net
- Join us for future webinars and live events - including the AccessATE Accessibility Lab at the 2019 ATE PI Conference in October!



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