Moodle 4.0 course creation

Moodle Moot It 2021
02 12 2021

The long road to 4.0

- August 2020 Moodle 4.0 as a 18 month release is announced
- March 2021 the first 4.0 commit was integrated
- October 2021 code freeze for Moodle 4.0
- ~January 2022 estimated release date of Moodle 4.0

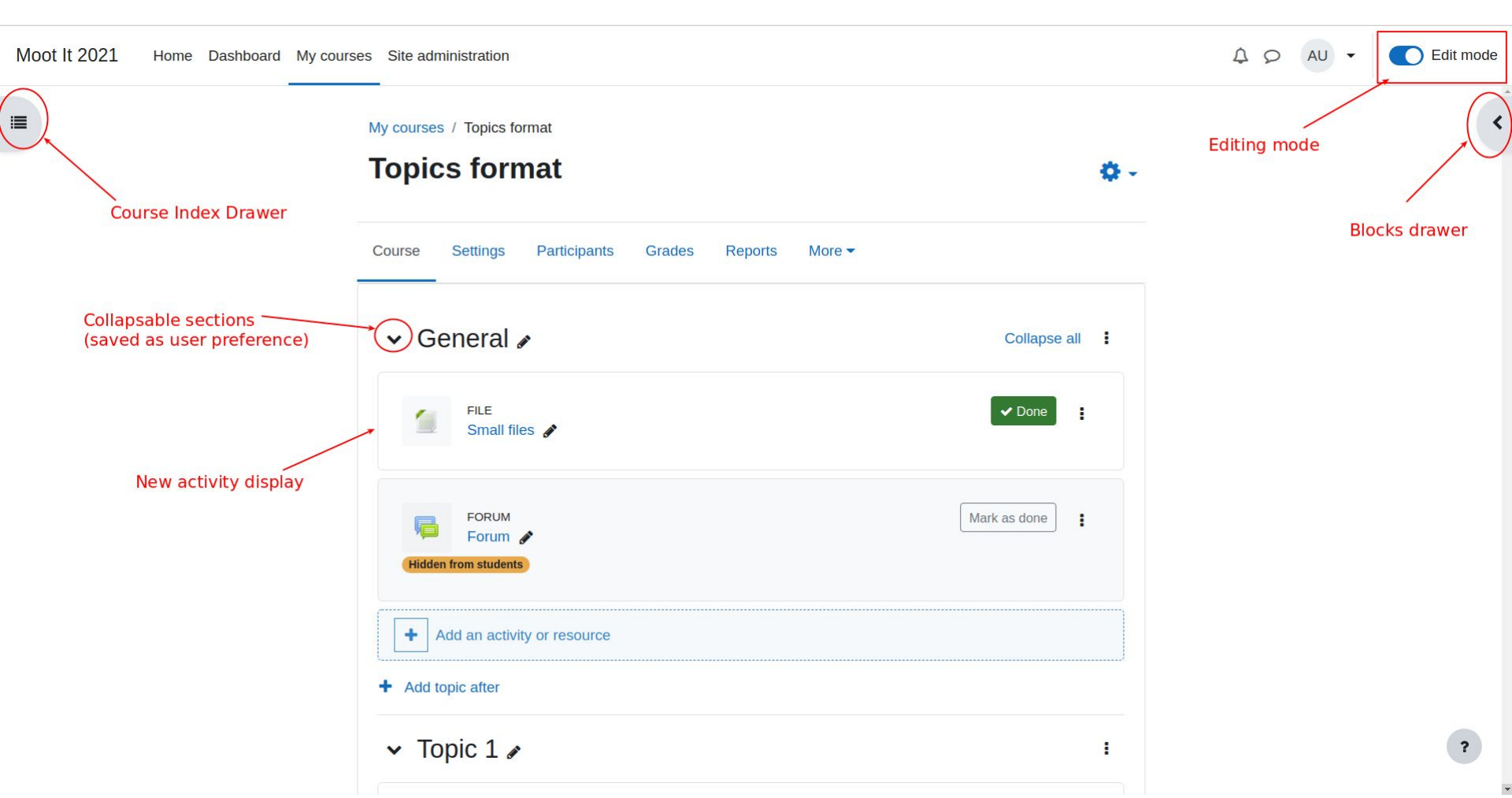
Moodle HQ 4.0 projects

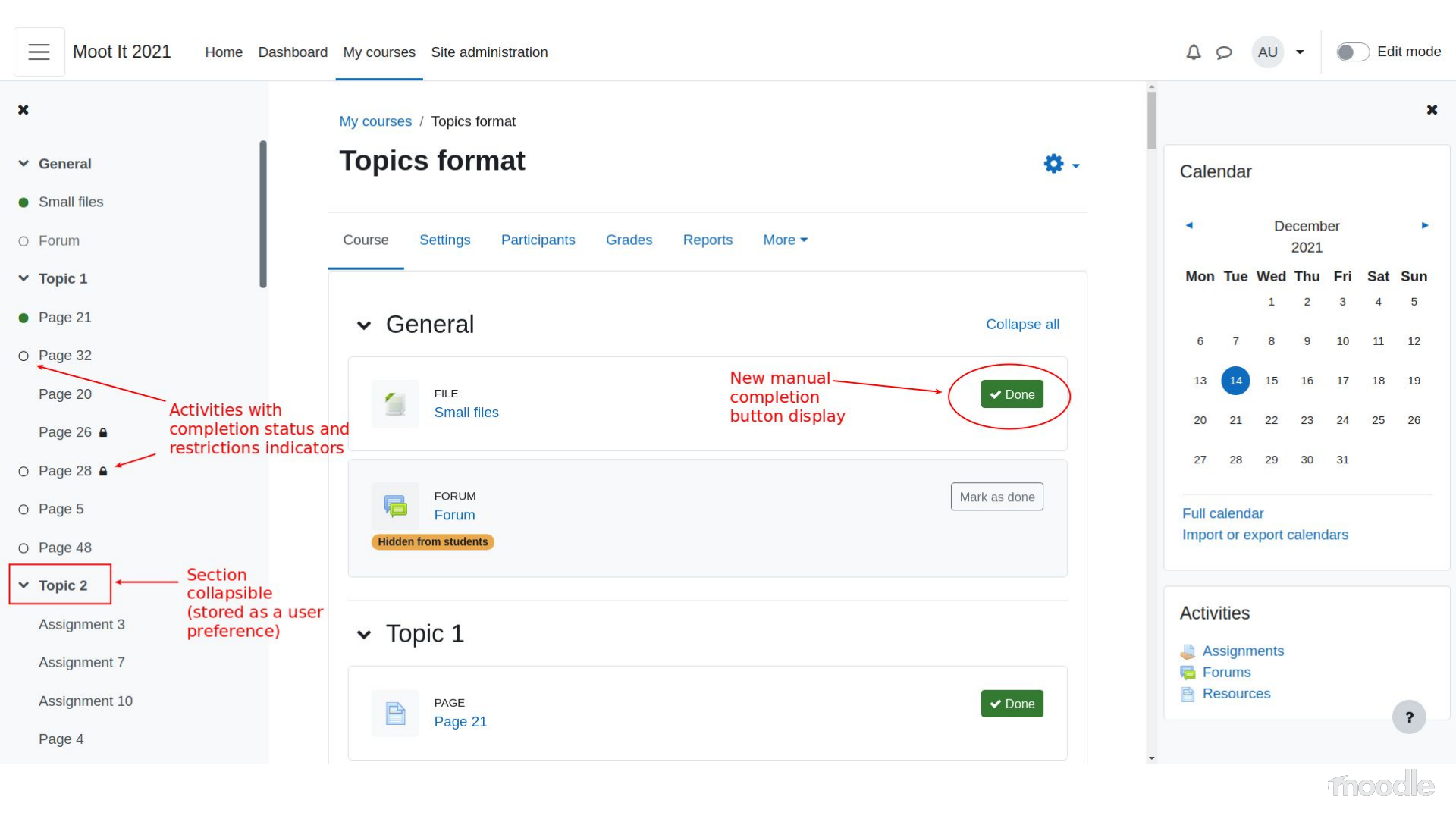
- Moodle HQ projects for Moodle 4.0 are divided in 3 main projects:
  - Navigation
  - **Course creation** (this session is about this project 😊)
  - Student experience
- Plus the integration of the report builder thanks to the Moodle Workplace Team (next session 😉)

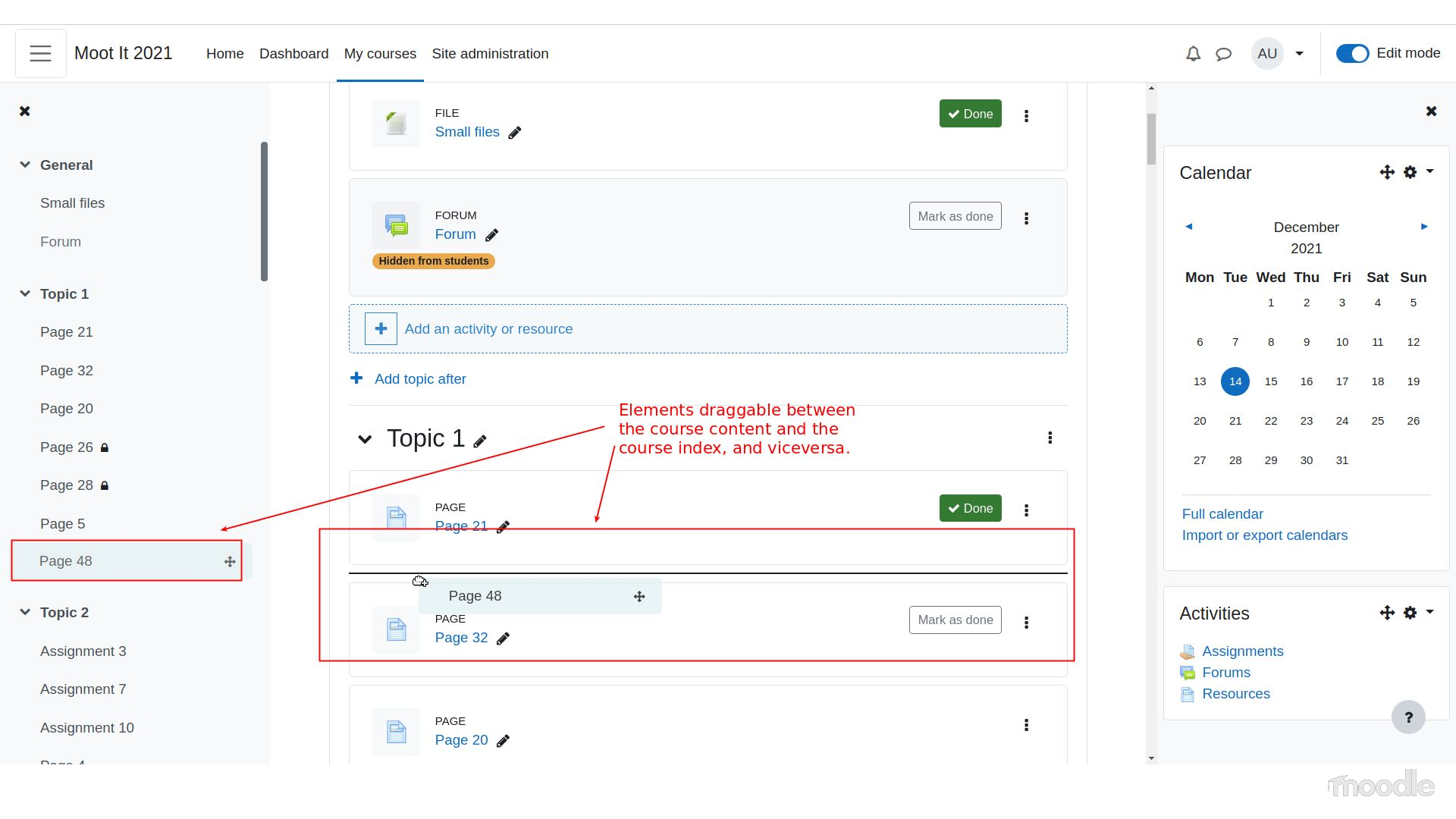
- Course navigation
- Activities card design
- Collapsible sections
- Course index
- Blocks drawer
- Drag & Drop
- Add sections
- Move modal
- Completion icons
- Accessibility

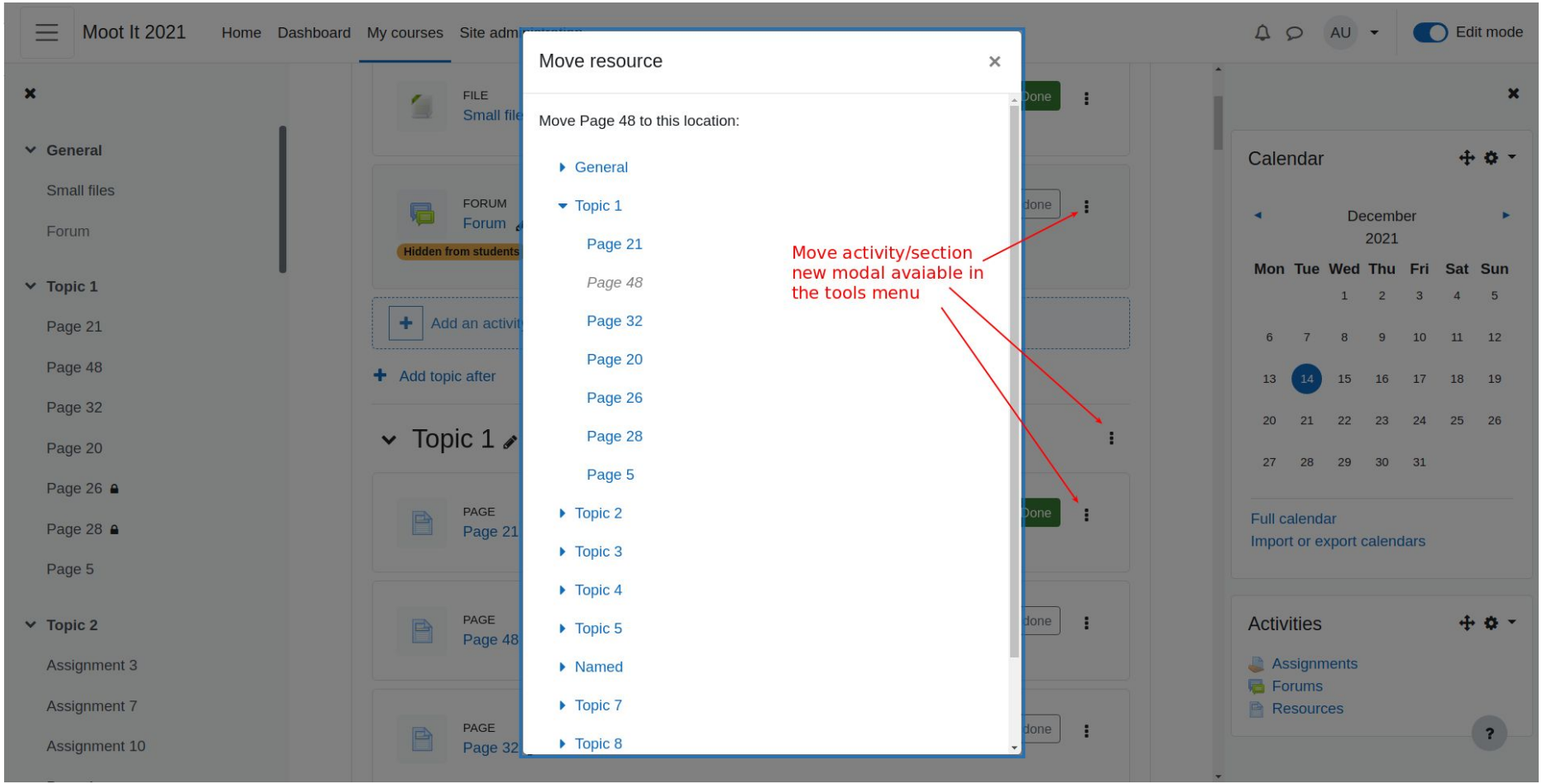
Demo time!

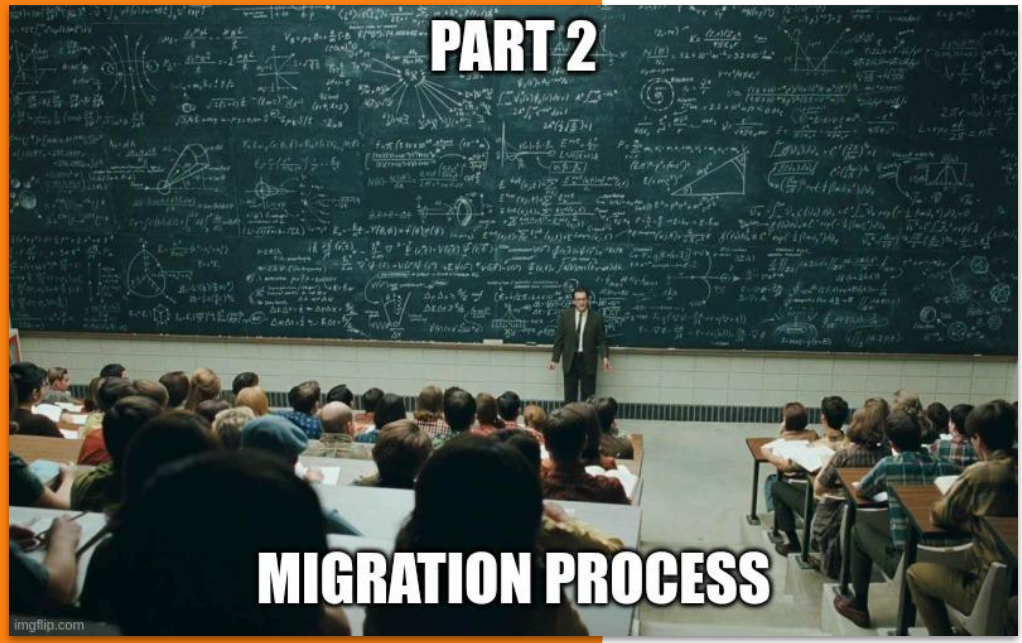
Because nothing can go wrong with an old-fashioned live demo


Moot It 2021
Home
Dashboard
My courses
Site administration
AU
Edit mode
Course Index Drawer
Editing mode
Blocks drawer
My courses / Topics format
Topics format
Course
Settings
Participants
Grades
Reports
More
Collapsable sections
(saved as user preference)
General
Collapse all
FILE
Small files
Done
New activity display
FORUM
Forum
Mark as done
Hidden from students
Add an activity or resource
Add topic after
Topic 1


Moot It 2021
Home
Dashboard
My courses
Site administration
AU
Edit mode
My courses / Topics format
Topics format
Course
Settings
Participants
Grades
Reports
More
General
Collapse all
FILE
Small files
Done
New manual completion button display
FORUM
Forum
Hidden from students
Mark as done
Topic 1
PAGE
Page 21
Done
General
Small files
Forum
Topic 1
Page 21
Page 32
Page 20
Page 26
Page 28
Page 5
Page 48
Topic 2
Assignment 3
Assignment 7
Assignment 10
Page 4
Activities with completion status and restrictions indicators
Section collapsible (stored as a user preference)
Calendar
December 2021
Mon Tue Wed Thu Fri Sat Sun
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31
Full calendar
Import or export calendars
Activities
Assignments
Forums
Resources


Moot It 2021
Home
Dashboard
My courses
Site administration
AU
Edit mode
General
Small files
Forum
Topic 1
Page 21
Page 32
Page 20
Page 26
Page 28
Page 5
Page 48
Topic 2
Assignment 3
Assignment 7
Assignment 10
FILE
Small files
Done
FORUM
Forum
Hidden from students
Mark as done
Add an activity or resource
Add topic after
Topic 1
Elements draggable between the course content and the course index, and viceversa.
PAGE
Page 21
Done
Page 48
PAGE
Page 32
Mark as done
PAGE
Page 20
Calendar
December 2021
Mon Tue Wed Thu Fri Sat Sun
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31
Full calendar
Import or export calendars
Activities
Assignments
Forums
Resources


Moot It 2021
Home
Dashboard
My courses
Site adm
AU
Edit mode
General
Small files
Forum
Topic 1
Page 21
Page 48
Page 32
Page 20
Page 26
Page 28
Page 5
Topic 2
Assignment 3
Assignment 7
Assignment 10
FILE
Small file
FORUM
Forum
Hidden from students
Add an activity
Add topic after
Topic 1
PAGE
Page 21
PAGE
Page 48
PAGE
Page 32
Move resource
Move Page 48 to this location:
General
Topic 1
Page 21
Page 48
Page 32
Page 20
Page 26
Page 28
Page 5
Topic 2
Topic 3
Topic 4
Topic 5
Named
Topic 7
Topic 8
Move activity/section new modal avaiable in the tools menu
Calendar
December 2021
Mon Tue Wed Thu Fri Sat Sun
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31
Full calendar
Import or export calendars
Activities
Assignments
Forums
Resources



- Courseformat subsystem
- Output classes
- Format renderer
- Base class
- HTML data attributes

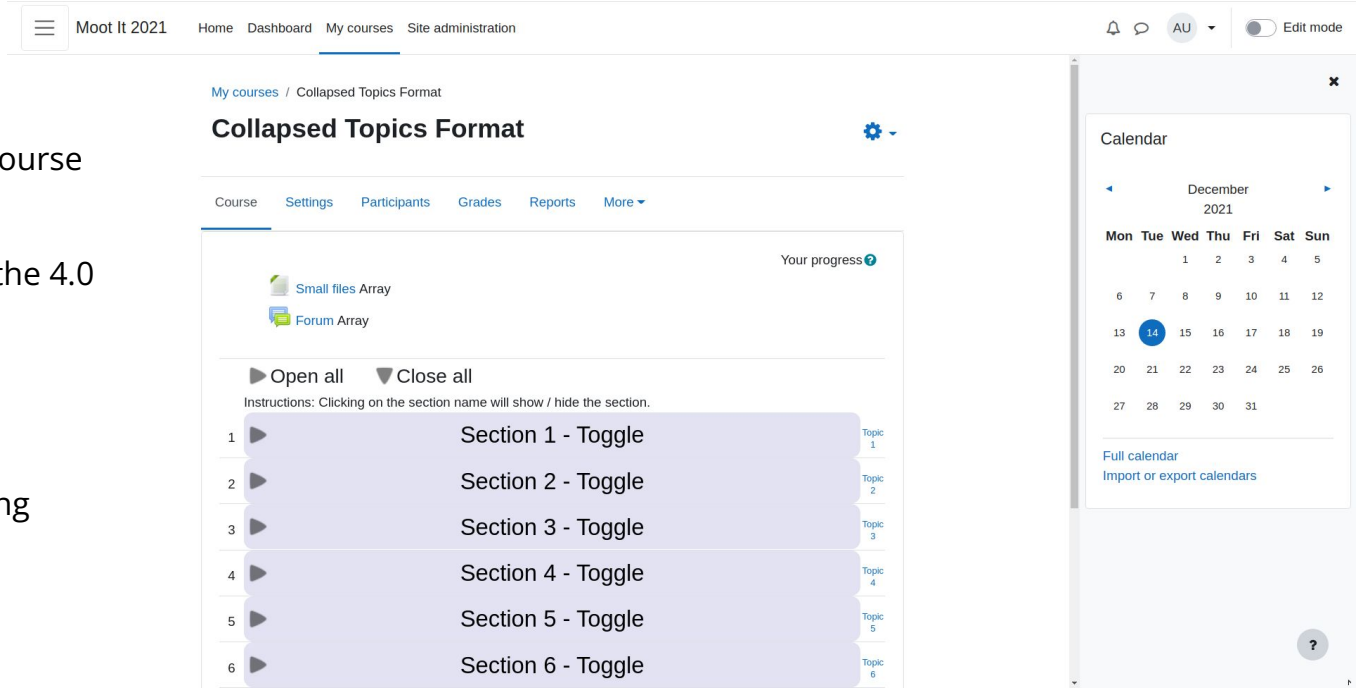
Demo time!

What happens when you use a Moodle 3.x course format in Moodle 4.0

3.11 formats will use the previous course editor until 4.3

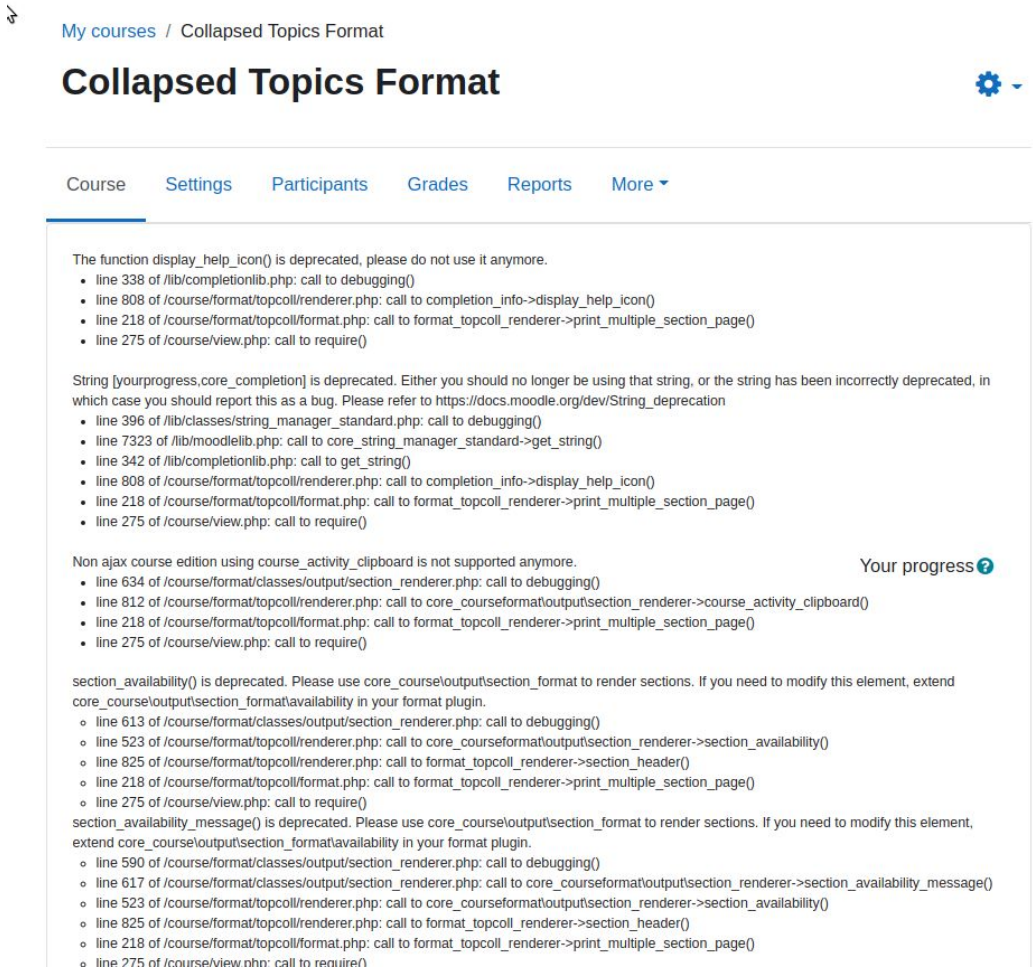
However, they won't have some of the 4.0 new features:

- Course index
- New drag and drop
- Move modal
- Add sections without reloading



Enabling debug on a 3.11 format will guide you through all the deprecated methods.

Take in mind that those methods will be removed in Moodle 4.3



core_courseformat subsystem

- The course/format folder is now a subsystem containing:
  - course formattings and rendering methods
  - course tests
  - course format API

Related issues: MDL-71863 and MDL-72578.

Important: all deprecated renderer methods using html_writer will be removed for good in **Moodle 4.3**

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Course format output classes

- Added **3 main renderer methods** (for full course, section and activity)
- The format **renderer class is now mandatory**
- 17 new output classes + mustache templates
- 33 deprecated methods from course_renderer and section_renderer (aka. format_section_renderer_base in Moodle 3.11)
- 13 new methods in core_courseformat\base class (aka. format_base in Moodle 3.11)

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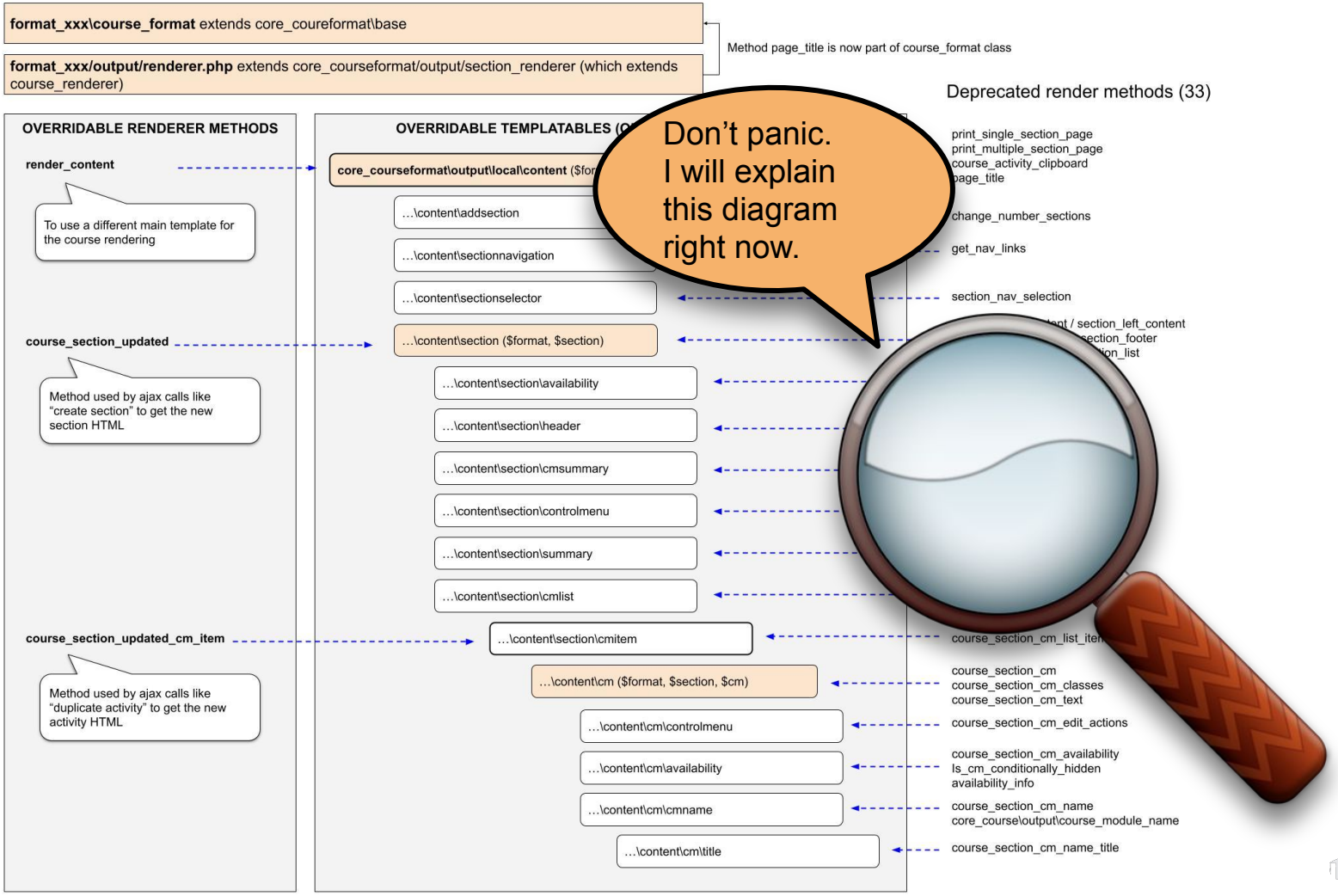
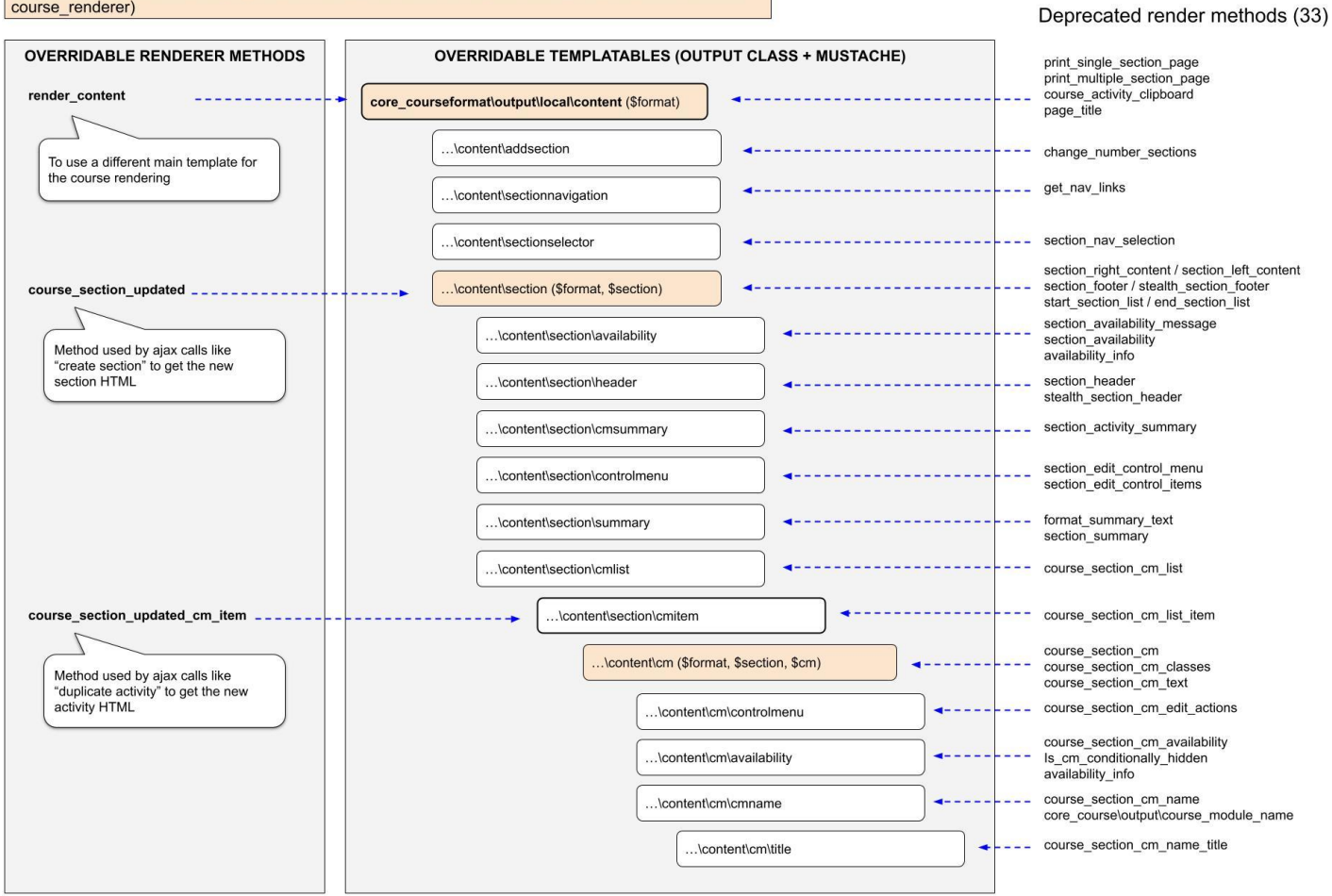

format_xxx\course_format extends core_coureformat\base
format_xxx/output/renderer.php extends core_courseformat/output/section_renderer (which extends course_renderer)
Method page_title is now part of course_format class
Deprecated render methods (33)
OVERRIDABLE RENDERER METHODS
OVERRIDABLE TEMPLATABLES (Q
Don’t panic.
I will explain
this diagram
right now.
render_content
To use a different main template for the course rendering
core_courseformat\output\local\content ($for
print_single_section_page
print_multiple_section_page
course_activity_clipboard
page_title
…\content\addsection
change_number_sections
…\content\sectionnavigation
get_nav_links
…\content\sectionselector
section_nav_selection
course_section_updated
Method used by ajax calls like “create section” to get the new section HTML
…\content\section ($format, $section)
…\content\section\availability
…\content\section\header
…\content\section\cmsummary
…\content\section\controlmenu
…\content\section\summary
…\content\section\cmlist
course_section_updated_cm_item
Method used by ajax calls like “duplicate activity” to get the new activity HTML
…\content\section\cmitem
…\content\cm ($format, $section, $cm)
course_section_cm
course_section_cm_classes
course_section_cm_text
…\content\cm\controlmenu
course_section_cm_edit_actions
…\content\cm\availability
course_section_cm_availability
Is_cm_conditionally_hidden
availability_info
…\content\cm\cmname
course_section_cm_name
core_course\output\course_module_name
…\content\cm\title
course_section_cm_name_title

format_xxx\course_format extends core_coureformat\base

format_xxx/output/renderer.php extends core_courseformat/output/section_renderer (which extends course_renderer)

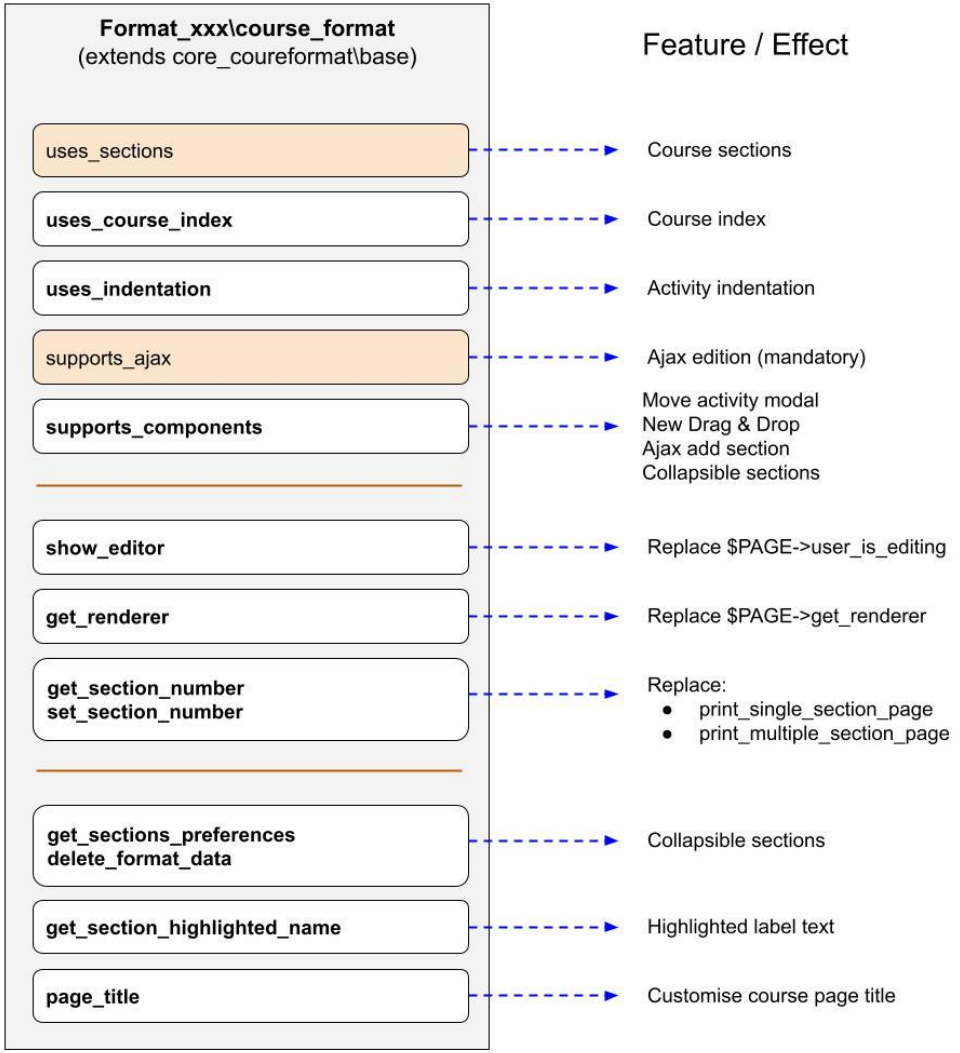
Method page_title is now part of course_format class



4.0 new features

Course index	Opt-in
Indentation (disabled in the standard formats)	Opt-out
New drag&drop	Opt-in
Move section/activity modal	Opt-in
Collapsible sections	Opt-out (overridable)
Activity card display	Opt-out (overridable)

4.0 Format base class methods



Course HTML structure

The new course UI components use **data attributes to identify elements** (instead of CSS classes and tag names):

- **Sections**: data-for=”section” data-id=”XXX” data-number=”XXXX”
  - **Section title**: data-for=”section_title” data-id=”XXX” data-number=”XXXX”
  - **Activity**: data-for=”cm” data-id=”XXX”

The previous CSS classes are still uses for some legacy actions but it will be deprecated for good in Moodle 4.3

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- Reactive state
- State actions
- Components
- Mutations

Demo time!

“Pay no attention to that man behind the curtain”

- L. Frank Baum (The Wizard of Oz)

Reactive state principles

1. Each reactive element is controlled by its own **component** class
2. The UI is and **updated representation of a state data**
3. All user interactions can alter the state data **but never the HTML**
4. The new services are designed to alter the current state data, not the interface.

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Module: core/reactive

Provides several classes to create small reactive states in Moodle.

- **Reactive**: each reactive application is represented by an instance of this class.
- **BaseComponent**: all reactive components extends this class
- **DragDrop**: a class to convert components into draggable and/or dropzones.
- **M.cfg.reactive**: object to debug your reactive application from the javascript console

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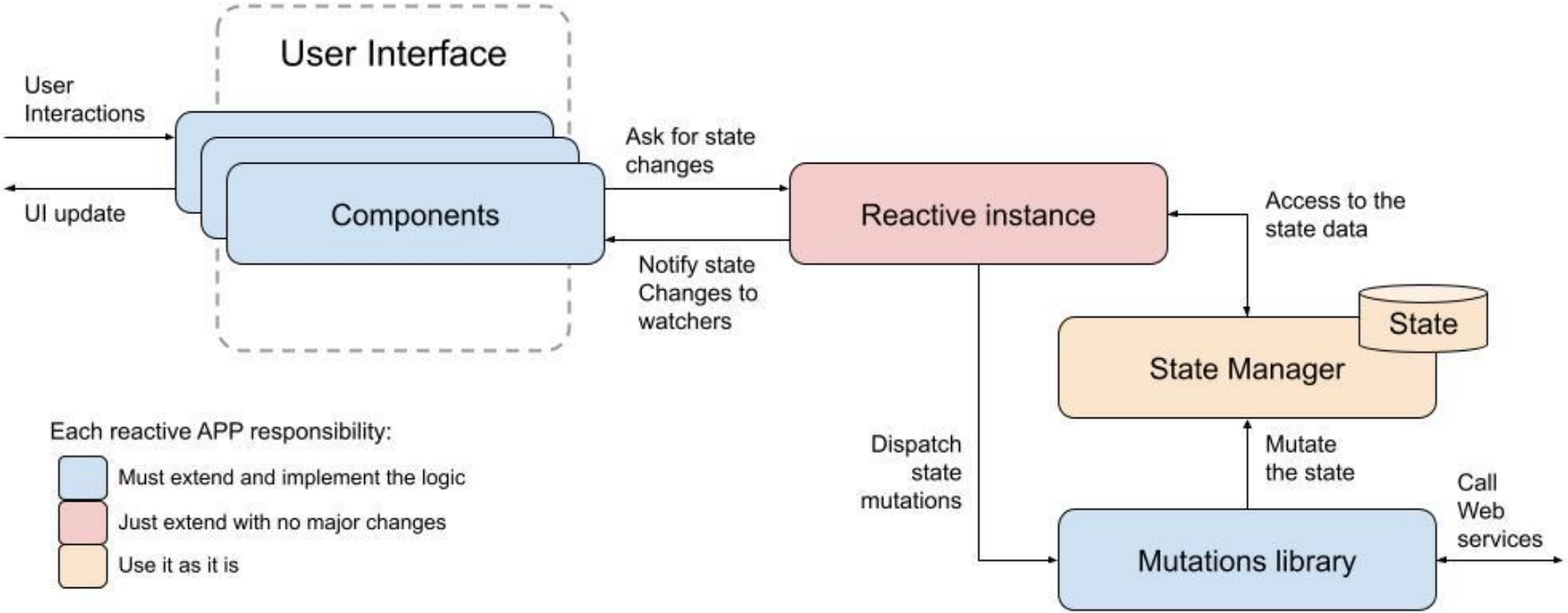
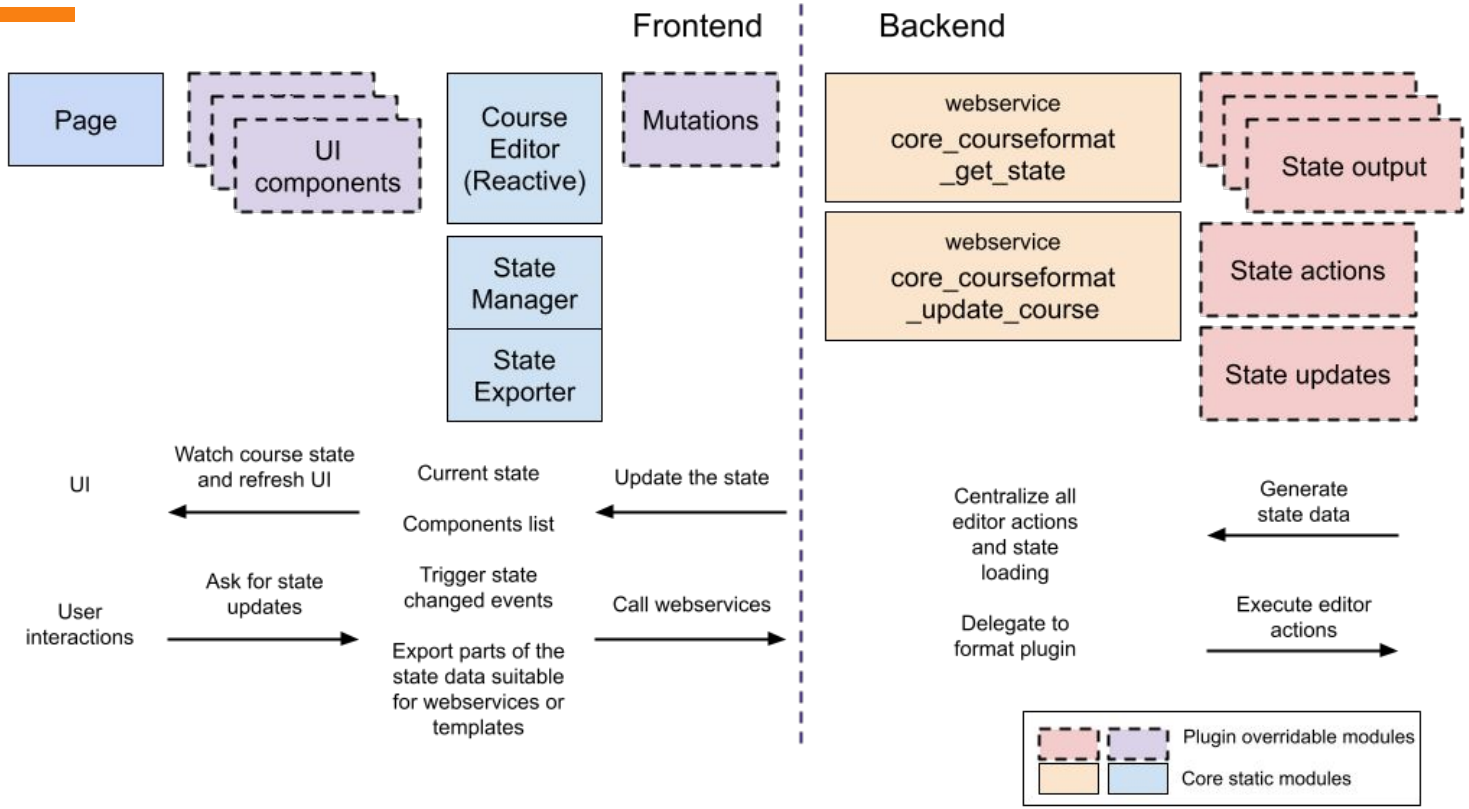
Reactive workflow



Course editor architecture



Thanks for your attention!

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