ximera — Simultaneously write print and online interactive materials.*

Jim Fowler   Jeramiah Hocutt   Oscar Levin   Jason Nowell
Wim Obbels   Hans Parshall   Bart Snapp

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Abstract

"Ximera begins where TEX ends." The ximera class aids in the creation of handouts, worksheets, exercises, and sections of textbooks to be used either individually or "glued" together via a xourse file. All ximera documents can be deployed in an online interactive form via `xake` See: Ximera Project and the source code on GitHub.

1 Introduction

Ximera, pronounced "chimera," (**X**imera: **I**nteractive, **M**athematics, **ER**esources, for **A**ll) is an open-source platform that provides tools for authoring and publishing (PDF and Online), open-source, interactive educational content, such as textbooks, assessments, and online courses. The Ximera document class provides the following features:

Formatting for different domains The Ximera document class provides built-in support for formatting documents in both PDF and online formats, which can be a big time-saver for authors. Additionally, it allows for the simultaneous creation of solution manuals and teaching editions, which can be especially useful for educators.

Compiling individually or as a whole With the Ximera document class, authors can easily compile individual documents or an entire collection of documents. This flexibility can be helpful when making changes to specific documents without having to re-compile the entire collection. Moreover, this allows an author to share large portions of a text with another, with minimal changes.

Interactive content The Ximera document class allows for the inclusion of interactive content, such as answer boxes that are validated by a client-side computer algebra system. Additionally, it allows for the embedding of YouTube videos, Desmos graphs, and GeoGebra interactives.

All content displayed By default, the Ximera document class displays all content to the author. This means the author see what the students see, along with answers and solutions, and links (that can be checked) to various interactive elements (when deployed, the interactive elements are truly embedded). This can be especially helpful for catching errors or inconsistencies in the content.

Online examples can be found at

https://go.osu.edu/ximera-examples

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*This file describes version v1.5.1, last revised 2024/05/12.

2 ximera.cls

1 ⟨∗classXimera⟩

2 `\newif\ifnumberedProblems`
3 `\numberedProblemsfalse% Default to no numbers, as that was previous behavior.`
4 `\DeclareOption{onlineProblemNumbers}{\numberedProblemstrue}`

5 ⟨/classXimera⟩

2.1 Options for the class

We start by listing the options for the ximera document class. Note, since the xourse class is based on the ximera class, all listed options are available there too.

6 ⟨∗classXimera⟩

The default behavior of the class is to display **all** content. This means that if any questions are asked, all answers are shown. Moreover, some content will only have a meaningful presentation when displayed online. When compiled without any options, this content will be shown too. This option will supress such content and generate a reasonable printiable "handout."

7 `\newif\ifhandout`
8 `\handoutfalse`
9 `\DeclareOption{handout}{\handouttrue}`

By default, authors are listed at the bottom of the first page of a document. This option will supress the listing of the authors.

10 `\newif\ifnoauthor`
11 `\noauthorfalse`
12 `\DeclareOption{noauthor}{\noauthortrue}`

By default, learning outcomes are listed at the bottom of the first page of a document. This option will supress the listing of the learning outcomes.

13 `\newif\ifnooutcomes`
14 `\nooutcomesfalse`
15 `\DeclareOption{nooutcomes}{\nooutcomestrue}`

instructornotes This option will turn on (and off) notes written for the instructor.

16 `\newif\ifinstructornotes`
17 `\instructornotesfalse`
18 `\DeclareOption{instructornotes}{\instructornotestrue}`

noinstructornotes This option will turn off (and on) notes written for the instructor.

19 `\DeclareOption{noinstructornotes}{\instructornotestrue}`

hints When the handout options is used, hints are not shown. This option will make hints visible in handout mode.

20 `\newif\ifhints`
21 `\hintsfalse`
22 `\DeclareOption{hints}{\hintstrue}`

newpage This option will start each problem-like environment (exercise, question, problem, and exploration) start on a new page.

23 `\newif\ifnewpage`
24 `\newpagefalse`
25 `\DeclareOption{newpage}{\newpagetrue}`

numbers This option will number the titles of the activity. By default the activities are unnumbered.

26 `\newif\ifnumbers`
27 `\numbersfalse`
28 `\DeclareOption{numbers}{\numberstrue}`

<dl>
<dt>wordchoicegiven</dt>
<dd>This option will replace the choices shown by <code>wordChoice</code> with the correct choice. No indication of the <code>wordChoice</code> environment will be shown.</dd>
</dl>

```
29 \newif\ifwordchoicegiven
30 \wordchoicegivenfalse
31 \DeclareOption{wordchoicegiven}{\wordchoicegiventrue}
32 \newif\iffirstinlinechoice% Support for other wordchoice command contents.
33 \firstinlinechoicetrue

34
35 \newif\ifxake
36 \xakefalse
37 \DeclareOption{xake}{\xaketrue}
38
39 \newif\iftikzexport
40 \tikzexportfalse
41 \DeclareOption{tikzexport}{%
42   \tikzexporttrue%
43   \handoutfalse%
44   \numbersfalse%
45   \newpagefalse%
46   \hintsfalse%
47   \nooutcomesfalse%
48 }
49
50 \DeclareOption*{%
51   \PassOptionsToClass{\CurrentOption}{article}%
52 }
53 \ProcessOptions\relax
54 \LoadClass{article}
55
56 \ifdefined\HCode
57   \xaketrue%
58   \tikzexporttrue%
59   \handoutfalse%
60   \numbersfalse%
61   \newpagefalse%
62   \hintsfalse%
63   \nooutcomesfalse%
64 \fi
65 ⟨/classXimera⟩

66 ⟨∗classXimera⟩
```

2.2   Loading packages

Since we want `\cancel` to work, we load it here to avoid polluting the `.jax` output.

```
67 \RequirePackage[makeroom]{cancel}
```

Quite a few packages are required by the document class. This is a list of required packages. As packages are added to this list, we should include a comment as to where they are being utilized. This will help keep this list from being redundant and/or outdated.

```
68 \RequirePackage[inline]{enumitem}
69 \RequirePackage[pagestyles]{titlesec}
70 \RequirePackage{titletoc}
71 \RequirePackage{titling}
72 \RequirePackage{url}
73 \RequirePackage[table]{xcolor}
74 \RequirePackage{tikz}
75 \RequirePackage{pgfplots}
76 \usepgfplotslibrary{groupplots}
77 \usetikzlibrary{calc}
78 \RequirePackage{fancyvrb}
```

Load `forloop` for the problem environment dynamic naming and building.

```
79 \RequirePackage{forloop}
```

Now we load even more packages.

```
80 \RequirePackage{environ}% Included to allow saving of environment contents. This does *not* p
81 \RequirePackage{amssymb}% Included to have access to math typeset.
82 \RequirePackage{amsmath}% Included to have access to math typeset.
83 \RequirePackage{amsthm}%  Included to have access to math typeset.
84 \RequirePackage{xifthen}% http://ctan.org/pkg/xifthen
85 \RequirePackage{multido}% http://ctan.org/pkg/multido
86 \RequirePackage{listings} %% is this required???
87
88 \RequirePackage{xkeyval}
89
90 \RequirePackage{currfile}
91 \RequirePackage{comment}
92 ⟨/classXimera⟩
```

Various packages must be loaded early to avoid polluting the `.jax` file.

```
93 ⟨*classXimera⟩
94 \RequirePackage{gettitlestring}
95 \RequirePackage{nameref}
96 \RequirePackage{epstopdf}
97 ⟨/classXimera⟩
```

2.3   Page setup

We want non-indented spaced-out paragraphs.

```
98  ⟨*classXimera⟩
99  \setlength{\parindent}{0pt}
100 \setlength{\parskip}{5pt}
101 ⟨/classXimera⟩
```

To avoid weird margins in 2-sided mode, change the margins.

```
102 ⟨*classXimera⟩
103 \oddsidemargin 62pt
104 \evensidemargin 62pt
105 \textwidth 345pt
106 \headheight 14pt
107 ⟨/classXimera⟩
```

On the HTML side, there is more complicated page setup to perform.

```
108 ⟨*cfgXimera⟩
109 \Preamble{xhtml,mathjax}
110
111 % We don't want to translate font suggestions with ugly wrappers like
112 % <span class="cmti-10"> for italic text
113 \NoFonts
114
115 % Don't output xml version tag
116 % \Configure{VERSION}{}
117
118 % Output HTML5 doctype instead of the default for HTML4
119 % \Configure{DOCTYPE}{\HCode{<!doctype html>\Hnewline}}
120
121 % Custom page opening
122 % \Configure{HTML}{\HCode{<html lang="en">\Hnewline}}{\HCode{\Hnewline</html>}}
123
124 % Reset <head>, aka delete all default boilerplate; alternatively set up new content
125 % \Configure{@HEAD}{\HCode{<meta name="generator" content="TeX4ht (http://www.cse.ohio-state.
126 \Configure{@HEAD}{\HCode{<meta name="ximera" content="version 2.5.1" />\Hnewline}}
127 \Configure{@HEAD}{\HCode{<link href="https://ximera.osu.edu/public/stylesheets/standalone.css
128 \Configure{@HEAD}{\HCode{<script type="text/javascript" async src="https://ximera.osu.edu/pub
129
```

```
130 % OVERWRITE css in ximera-server (to be removed whenever this has been fixed in the server;
131 \catcode`\%=11
132 \Configure{@BODY}{\HCode{<style>
133 .activity-body pre {
134     white-space: pre;
135     background-color: lightgray;
136 }
137 .xmyoutube {
138     aspect-ratio: 16/9;
139     min-width: 75%;
140 }
141 .image-environment img {
142     width: unset;
143 }
144 </style>\Hnewline}}
145 \catcode`\%=14
146
147 ⟨/cfgXimera⟩
```

Disable certain ligatures in HTML.

```
148 ⟨*htXimera⟩
149 \usepackage{microtype}
150 \DisableLigatures[f]{encoding=*}
151 ⟨/htXimera⟩
```

I am not sure what this does.

```
152 ⟨*htXimera⟩
153 \NewEnviron{html}{\HCode{\BODY}}
154 ⟨/htXimera⟩
```

2.4 Structure

2.4.1 Macros

Makes everymath display style even when inline, could be optional.

```
155 ⟨*classXimera⟩
156 \everymath{\displaystyle}
157 ⟨/classXimera⟩
```

Ok not everything, we also need to configure "display style" limits.

```
158 ⟨*classXimera⟩
159 \let\prelim\lim
160 \renewcommand{\lim}{\displaystyle\prelim}
161 ⟨/classXimera⟩
```

2.4.2 Theorem and theorem-like environments

On the web, a theorem is emitted as a special `<div>`.

```
162 ⟨*htXimera⟩
163 \newcommand{\ConfigureTheoremEnv}[1]{%
164 \renewenvironment{#1}[1][]{\refstepcounter{problem}%
165 \ifthenelse{\equal{##1}{}}{}{%
166   \HCode{<span class="theorem-like-title">}##1\HCode{</span>}%
167 }}{}
168 \ConfigureEnv{#1}{\stepcounter{identification}\ifvmode \IgnorePar\fi \EndP\HCode{<div class='
169 }
170 ⟨/htXimera⟩
171 ⟨classXimera⟩\theoremstyle{definition} % No italic (because this makes also text in TikZ itali
```

The key is to make sure that the theorem environments are defined in a corresponding fashion on the web and on paper.

theorem   Theorem

```
172 ⟨classXimera⟩        \newtheorem{theorem}{\GetTranslation{Theorem}}
173 ⟨htXimera⟩          \ConfigureTheoremEnv{theorem}
```

algorithm	Algorithm	
	174 ⟨classXimera⟩	\newtheorem{algorithm}{\GetTranslation{Algorithm}}
	175 ⟨htXimera⟩	\ConfigureTheoremEnv{algorithm}
axiom	Axiom	
	176 ⟨classXimera⟩	\newtheorem{axiom}{\GetTranslation{Axiom}}
	177 ⟨htXimera⟩	\ConfigureTheoremEnv{axiom}
claim	Claim	
	178 ⟨classXimera⟩	\newtheorem{claim}{\GetTranslation{Claim}}
	179 ⟨htXimera⟩	\ConfigureTheoremEnv{claim}
conclusion	Conclusion	
	180 ⟨classXimera⟩	\newtheorem{conclusion}{\GetTranslation{Conclusion}}
	181 ⟨htXimera⟩	\ConfigureTheoremEnv{conclusion}
condition	Condition	
	182 ⟨classXimera⟩	\newtheorem{condition}{\GetTranslation{Condition}}
	183 ⟨htXimera⟩	\ConfigureTheoremEnv{condition}
conjecture	Conjecture	
	184 ⟨classXimera⟩	\newtheorem{conjecture}{\GetTranslation{Conjecture}}
	185 ⟨htXimera⟩	\ConfigureTheoremEnv{conjecture}
corollary	Corollary	
	186 ⟨classXimera⟩	\newtheorem{corollary}{\GetTranslation{Corollary}}
	187 ⟨htXimera⟩	\ConfigureTheoremEnv{corollary}
criterion	Criterion	
	188 ⟨classXimera⟩	\newtheorem{criterion}{\GetTranslation{Criterion}}
	189 ⟨htXimera⟩	\ConfigureTheoremEnv{criterion}
definition	Definition	
	190 ⟨classXimera⟩	\newtheorem{definition}{\GetTranslation{Definition}}
	191 ⟨htXimera⟩	\ConfigureTheoremEnv{definition}
example	Example	
	192 ⟨classXimera⟩	\newtheorem{example}{\GetTranslation{Example}}
	193 ⟨htXimera⟩	\ConfigureTheoremEnv{example}
explanation	Explanation	
	194 ⟨classXimera⟩	\newtheorem*{explanation}{\GetTranslation{Explanation}}
	195 ⟨htXimera⟩	\ConfigureTheoremEnv{explanation}
fact	Fact	
	196 ⟨classXimera⟩	\newtheorem{fact}{\GetTranslation{Fact}}
	197 ⟨htXimera⟩	\ConfigureTheoremEnv{fact}
lemma	Lemma	
	198 ⟨classXimera⟩	\newtheorem{lemma}{\GetTranslation{Lemma}}
	199 ⟨htXimera⟩	\ConfigureTheoremEnv{lemma}
formula	Formula	
	200 ⟨classXimera⟩	\newtheorem{formula}{\GetTranslation{Formula}}
	201 ⟨htXimera⟩	\ConfigureTheoremEnv{formula}
idea	Idea	
	202 ⟨classXimera⟩	\newtheorem{idea}{\GetTranslation{Idea}}
	203 ⟨htXimera⟩	\ConfigureTheoremEnv{idea}
notation	Notation	
	204 ⟨classXimera⟩	\newtheorem{notation}{\GetTranslation{Notation}}
	205 ⟨htXimera⟩	\ConfigureTheoremEnv{notation}
model	Model	
	206 ⟨classXimera⟩	\newtheorem{model}{\GetTranslation{Model}}
	207 ⟨htXimera⟩	\ConfigureTheoremEnv{model}
observation	Observation	
	208 ⟨classXimera⟩	\newtheorem{observation}{\GetTranslation{Observation}}
	209 ⟨htXimera⟩	\ConfigureTheoremEnv{observation}

proposition	Proposition

210 ⟨classXimera⟩   `\newtheorem{proposition}{\GetTranslation{Proposition}}`
211 ⟨htXimera⟩   `\ConfigureTheoremEnv{proposition}`

paradox	Paradox

212 ⟨classXimera⟩   `\newtheorem{paradox}{\GetTranslation{Paradox}}`
213 ⟨htXimera⟩   `\ConfigureTheoremEnv{paradox}`

procedure	Procedure

214 ⟨classXimera⟩   `\newtheorem{procedure}{\GetTranslation{Procedure}}`
215 ⟨htXimera⟩   `\ConfigureTheoremEnv{procedure}`

remark	Remark

216 ⟨classXimera⟩   `\newtheorem{remark}{\GetTranslation{Remark}}`
217 ⟨htXimera⟩   `\ConfigureTheoremEnv{remark}`

summary	Summary

218 ⟨classXimera⟩   `\newtheorem{summary}{\GetTranslation{Summary}}`
219 ⟨htXimera⟩   `\ConfigureTheoremEnv{summary}`

template	Template

220 ⟨classXimera⟩   `\newtheorem{template}{\GetTranslation{Template}}`
221 ⟨htXimera⟩   `\ConfigureTheoremEnv{template}`

warning	Warning

222 ⟨classXimera⟩   `\newtheorem{warning}{\GetTranslation{Warning}}`
223 ⟨htXimera⟩   `\ConfigureTheoremEnv{warning}`

2.4.3 Enumerate fixes

Make enumerate use a letter

```
224 ⟨*classXimera⟩
225 \renewcommand{\theenumi}{\textup{(\alph{enumi})}}
226 \renewcommand{\labelenumi}{\theenumi}
227 \renewcommand{\theenumii}{\textup{(\roman{enumii})}}
228 \renewcommand{\labelenumii}{\theenumii}
229 ⟨/classXimera⟩
```

2.4.4 Proofs

proof   A mathematical proof environment.

```
230 ⟨*classXimera⟩
231 \renewcommand{\qedsymbol}{$\blacksquare$}
232 \renewenvironment{proof}[1][\proofname]
233   {\begin{trivlist}\item[\hskip \labelsep \itshape \bfseries #1{}\hspace{2ex}]]
234 {\qed\end{trivlist}}
235 ⟨/classXimera⟩
236 ⟨*htXimera⟩
237     % Mmm, (why) do we want/need this ...?
238     \ConfigureTheoremEnv{proof}
239 \ConfigureEnv{proof}{\ifvmode\IgnorePar\fi\EndP\HCode{<div class="proof">}
240 \ConfigureList{trivlist}{\ifvmode\IgnorePar\fi\EndP}{}{}{}
241 }{\ifvmode\IgnorePar\fi\EndP\HCode{</div>}}{}{}
242 ⟨/htXimera⟩
```

2.4.5 Problem environments

These are problem environment decorations (these should be user invoked, not default). The decoration for these environments were inspired by http://tex.stackexchange.com/questions/11098/nice-formatting-for-theorems

```
243 ⟨*classXimera⟩
```

```
244 \newcommand{\hang}{% top theorem decoration
245   \begingroup%
246   \setlength{\unitlength}{.005\linewidth}% \linewidth/200
247 \begin{picture}(0,0)(1.5,0)%
248   \linethickness{1pt} \color{black!50}%
249   \put(-3,2){\line(1,0){206}}% Top line
250   \multido{\iA=2+-1,\iB=50+-10}{5}{% Top hangs
251 \color{black!\iB}%
252 \put(-3,\iA){\line(0,-1){1}}% Top left hang
253 %\put(203,\iA){\line(0,-1){1}}% Top right hang
254   }%
255 \end{picture}%
256   \endgroup%
257 }%
258 \newcommand{\hung}{% bottom theorem decoration
259   \nobreak
260   \begingroup%
261 \setlength{\unitlength}{.005\linewidth}% \linewidth/200
262 \begin{picture}(0,0)(1.5,0)%
263   \linethickness{1pt} \color{black!50}%
264   \put(60,0){\line(1,0){143}}% Bottom line
265   \multido{\iA=0+1,\iB=50+-10}{5}{% Bottom hangs
266 \color{black!\iB}%
267 %\put(-3,\iA){\line(0,1){1}}% Bottom left hang
268 \put(203,\iA){\line(0,1){1}}% Bottom right hang
269 \put(\iB,0){\line(60,0){10}}% Left fade out
270   }%
271 \end{picture}%
272   \endgroup%
273 }%
```

Configure environment configuration commands

The command \problemNumber contains all the format code to determine the number (and the format of the number) for any of the problem environments.

```
274 \MakeCounter{Iteration@probCnt}
275 \MakeCounter{problem}
276 \newcommand{\problemNumber}{
277 % First we determine if we have a counter for this question depth level.
278 \ifcsname c@depth\Roman{problem@Depth}Count\endcsname% Check to see if counter exists
279 %If so, do nothing.
280 \else
281 %If not, create it.
282 \expandafter\newcounter{depth\Roman{problem@Depth}Count}
283 \expandafter\setcounter{depth\Roman{problem@Depth}Count}{0}
284 \fi
285
286 \expandafter\stepcounter{depth\Roman{problem@Depth}Count}
287 \arabic{depthICount}% The first problem depth, what use to be |\theproblem|.
288
289 \forloop{Iteration@probCnt}{2}{\arabic{Iteration@probCnt} < \numexpr \value{problem@Depth} +
290 .\expandafter\arabic{depth\Roman{Iteration@probCnt}Count}% Get the problem number of the next
291 }
292 }
293 %%%%% Configure various problem environment commands
294 \Make@Counter{problem@Depth}
295 %%%% Configure environments start content
296 \newcommand{\problemEnvironmentStart}[2]{%
297 \stepcounter{problem@Depth}% Started a problem, so we've sunk another problem layer.
298 \def\spaceatend{#1}%
299 \begin{trivlist}%
300 \item[\hskip\labelsep\sffamily\bfseries\GetTranslation{#2} \problemNumber% Determine the cor
301 ]%
302 \slshape
303 }
```

```
304 %%%%% Configure environments end content %%%%%
305 \newcommand{\problemEnvironmentEnd}{%This configures all the end content for a problem.
306 \stepcounter{problem@Depth}
307 \ifcsname c@depth\Roman{problem@Depth}Count\endcsname
308 \expandafter\ifnum\expandafter\value{depth\Roman{problem@Depth}Count}>0
309 \expandafter\setcounter{depth\Roman{problem@Depth}Count}{0}
310 \fi
311 \fi
312 \addtocounter{problem@Depth}{-2}% Exited a problem so we've exited a problem layer. Need -2 b
313 \ifhandout
314 \ifnewpage
315 \newpage
316 \fi
317 \fi
318 \end{trivlist}
319 }
320 %% Add a simple command that handles all the problem creation aspects:
321 \newcommand{\createProblemEnv}[2]{% This is a nice command to define a new problem-like envir
322 \newenvironment{#1}[1][2in]%
323 {%Env start code
324 \problemEnvironmentStart{#1}{#2}
325 }
326 {%Env end code
327 \problemEnvironmentEnd
328 }
329 }
330
331 %%%%% Now populate the old environment names
332 %
333 % Old environments were "problem", "exercise", "exploration", and "question".
334 % Note that you can add content to the start/end code on top of these base code pieces if you
335 %
336 % These definitions will be overwritten in ximera.4ht !
337
338 \createProblemEnv{problem}{Problem}
339 \createProblemEnv{exercise}{Exercise}
340 \createProblemEnv{exploration}{Exploration}
341 \createProblemEnv{question}{Question}

342 ⟨/classXimera⟩

343 ⟨*htXimera⟩

344 \newcounter{identification}
345 \setcounter{identification}{0}
346 \newcommand{\ConfigureQuestionEnv}[2]{%
347 \renewenvironment{#1}{
348   }
349   {
350   }%
351   \ConfigureEnv{#1}
352   {
353 %     \ifnumberedProblems% The code below is all to generate online problem numbering if optio
354 %     \stepcounter{problem@Depth}% Started a problem, so we've sunk another problem layer.
355 %     \ifcsname c@depth\Roman{problem@Depth}Count\endcsname
356 %     \else
357 %       \expandafter\newcounter{depth\Roman{problem@Depth}Count}
358 %       \expandafter\setcounter{depth\Roman{problem@Depth}Count}{0}
359 %     \fi
360 %     \expandafter\stepcounter{depth\Roman{problem@Depth}Count}
361 %     \def\problemNumDisp{
362 %     \arabic{depthICount}% Top Level Problem Number: X.1.1.1.1 Number.
363 %       \ifcsname c@depthIICount\endcsname\ifnum\value{problem@Depth}>1 .\arabic{depthIICount}\f
364 %       \ifcsname c@depthIIICount\endcsname\ifnum\value{problem@Depth}>2 .\arabic{depthIIICount}
365 %       \ifcsname c@depthIVCount\endcsname\ifnum\value{problem@Depth}>3 .\arabic{depthIVCount}\f
366 %       \ifcsname c@depthVCount\endcsname\ifnum\value{problem@Depth}>4 .\arabic{depthVCount}\fi%
```

```
367 %     \fi\fi\fi\fi
368 %         }
369 %   \else
370      \def\problemNumDisp{}% Otherwise don't display a problem number.
371 %   \fi
372      \stepcounter{identification}
373      \ifvmode
374      \IgnorePar
375      \fi
376 \EndP
377 \HCode{<div role="article" class="problem-environment #1" id="problem\arabic{identification}"
378 }
379 {
380 \stepcounter{problem@Depth}
381 \ifcsname c@depth\Roman{problem@Depth}Count\endcsname
382 \expandafter\ifnum\expandafter\value{depth\Roman{problem@Depth}Count}>0
383 \expandafter\setcounter{depth\Roman{problem@Depth}Count}{0}
384 \fi
385 \fi
386 \addtocounter{problem@Depth}{-2}% Exited a problem so we've exited a problem layer. Need -2 b
387 \ifvmode
388 \IgnorePar
389 \fi
390 \EndP
391 \HCode{</div>}\IgnoreIndent
392 }{}{}%
393 }
394
395 \ConfigureQuestionEnv{problem}{Problem}
396 \ConfigureQuestionEnv{exercise}{Exercise}
397 \ConfigureQuestionEnv{question}{Question}
398 \ConfigureQuestionEnv{exploration}{Exploration}
399
400 \ifdefined\xmNotHintAsExpandable
401   \ConfigureQuestionEnv{hint}{hint} % 2024: hint is no longer a 'question-environment'.
402 \fi
403 ⟨/htXimera⟩
```

2.4.6 Hints

hint   Hint environments can be embedded inside problems.

```
404 ⟨*classXimera⟩
```

Create a counter that will track how deeply nested the current hint is

```
405 \newcounter{hintLevel}
406 \setcounter{hintLevel}{0}
```

Create an empty shell to renew

```
407 \newenvironment{hint}{}{}
```

Now we renew the environment as needed, this should allow support for any transition code that treats some parts as a "handout" and some parts as non-handout. renewing the environment on the fly is a bit hacky.

```
408 \renewenvironment{hint}
409 {
410 \ifhandout
411 \setbox0\vbox\bgroup
412 \else
413 \begin{trivlist}\item[\hskip \labelsep\small\slshape\bfseries \GetTranslation{Hint}:\hspace{2
414 \small\slshape
415 \fi
416 \stepcounter{hintLevel}
417 }
418 {
```

```
419 \ifhandout
420 \egroup\ignorespacesafterend
421 \else
422 \end{trivlist}
423 \fi
424 \addtocounter{hintLevel}{-1}
425 }
426
427 \ifhints
428 \renewenvironment{hint}{
429 \begin{trivlist}\item[\hskip \labelsep\small\slshape\bfseries \GetTranslation{hint}:\hspace{2
430 \small\slshape
431 }
432 {
433 \end{trivlist}
434 }
435 \fi
436
437 ⟨/classXimera⟩
```

2.4.7 Solution

solution   The solution to a problem.

```
438 ⟨*classXimera⟩
439 %% solution environment
440 \ifhandout % what follows is handout behavior
441 \newenvironment{solution}%
442         {%
443 \setbox0\vbox\bgroup
444         }
445                 {%
446 \egroup
447         }
448 \else
449 \newenvironment{solution}%
450         {%
451 \begin{trivlist}
452 \item[\hskip \labelsep\bfseries \GetTranslation{Solution}:\hspace{2ex}]
453         }
454         % %% line at the bottom}
455         {
456 \end{trivlist}
457 % (202410: no longer \par\addvspace{.5ex}\nobreak\noindent\hung
458         }
459 \fi
460
461
462
463 ⟨/classXimera⟩
```

2.4.8 Code listing environments

code   A code answer environment You cannot use Environ with the fancyvrb/listings package if you want nested environments.

```
464 ⟨*classXimera⟩
465 \DefineVerbatimEnvironment{code}{Verbatim}{numbers=left,frame=lines,label=Code,labelposition=
466 ⟨/classXimera⟩
```

python   A python answer environment You cannot use Environ with the fancyvrb/listings package if you want nested environments

```
467 ⟨*classXimera⟩
468 \DefineVerbatimEnvironment{python}{Verbatim}{numbers=left,frame=lines,label=Python,labelposit
469 ⟨/classXimera⟩
```

javascriptCode A JavaScript answer environment Unfortunately the name `javascript` is already used for the actual, executed (!) JavaScript interactive. environments

```
470 ⟨*classXimera⟩
471 \DefineVerbatimEnvironment{javascriptCode}{Verbatim}{numbers=left,frame=lines,label=JavaScri
472 ⟨/classXimera⟩
473 ⟨*cfgXimera⟩
474 \renewenvironment{javascriptCode}{\NoFonts}{\EndNoFonts}
475 \ScriptEnv{javascriptCode}{\stepcounter{identification}\ifvmode \IgnorePar\fi \EndP\HCode{<di
476 ⟨/cfgXimera⟩
```

On the web, translate verbatim and lstlisting blocks into `<pre>` elements.

```
477 %%%<*cfgXimera>
478 %%\ConfigureEnv{verbatim}{\ifvmode\IgnorePar\fi\EndP\HCode{<pre style="white-space: pre; back
479 %%\ConfigureEnv{lstlisting}{\ifvmode\IgnorePar\fi\EndP\HCode{<pre>}}{\ifvmode\IgnorePar\fi\En
480 %%%</cfgXimera>
481 %%
```

2.4.9 Dialogues

dialogue A dialogue between people.

```
482 ⟨*classXimera⟩
483 \newenvironment{dialogue}{%
484     \renewcommand\descriptionlabel[1]{\hspace{\labelsep}\textbf{##1:}}
485     \begin{description}%
486 }{%
487     \end{description}%
488 }
489 ⟨/classXimera⟩
```

On the web, the resulting `<dl>` should have an appropriate `class` set.

```
490 ⟨*htXimera⟩
491 \renewenvironment{dialogue}{\begin{description}}{\end{description}}
492
493 \ConfigureList{dialogue}%
494     {\EndP\HCode{<dl \a:LRdir class="dialogue">}%
495         \PushMacro\end:itm
496 \global\let\end:itm=\empty}
497     {\PopMacro\end:itm \global\let\end:itm \end:itm
498 \EndP\HCode{</dd></dl>}\ShowPar}
499     {\end:itm \global\def\end:itm{\EndP\Tg</dd>}\HCode{<dt
500         class="actor">}\bgroup \bf}
501     {\egroup\EndP\HCode{</dt><dd\Hnewline class="speech">}}
502 ⟨/htXimera⟩
```

2.4.10 Instructor notes

```
503 ⟨*classXimera⟩
504
505 %% instructor intro/instructor notes
506 %%
507 \ifhandout % what follows is handout behavior
508 \ifinstructornotes
509 \newenvironment{instructorIntro}%
510         {%
511 \begin{trivlist}
512 \item[\hskip \labelsep\bfseries \GetTranslation{Instructor Introduction}:\hspace{2ex}]
513 }
514         % %% line at the bottom}
515         {
516 \end{trivlist}
517 \par\addvspace{.5ex}\nobreak\noindent\hung
518         }
519 \else
520 \newenvironment{instructorIntro}%
```

```
521        {%
522 \setbox0\vbox\bgroup
523        }
524        {%If this mysteriously starts breaking
525                        % remove \ignorespacesafterend
526 \egroup\ignorespacesafterend
527        }
528                \fi
529 \else% for handout, so what follows is default
530 \ifinstructornotes
531 \newenvironment{instructorIntro}%
532        {%
533          \setbox0\vbox\bgroup
534        }
535 {%
536   \egroup
537 }
538                \else
539        \newenvironment{instructorIntro}%
540 {%
541   \begin{trivlist}
542   \item[\hskip \labelsep\bfseries \GetTranslation{Instructor Introduction}:\hspace{2ex}]
543 }
544 % %% line at the bottom}
545 {
546   \end{trivlist}
547   \par\addvspace{.5ex}\nobreak\noindent\hung
548 }
549                \fi
550 \fi
551
552
553
554
555 %% instructorNotes environment
556 \ifhandout % what follows is handout behavior
557 \ifinstructornotes
558 \newenvironment{instructorNotes}%
559        {%
560 \begin{trivlist}
561 \item[\hskip \labelsep\bfseries \GetTranslation{Instructor Notes}:\hspace{2ex}]
562        }
563        % %% line at the bottom}
564        {
565 \end{trivlist}
566 \par\addvspace{.5ex}\nobreak\noindent\hung
567        }
568        \else
569 \newenvironment{instructorNotes}%
570        {%
571          \setbox0\vbox\bgroup
572        }
573 {%
574   \egroup
575 }
576                \fi
577 \else% for handout, so what follows is default
578 \ifinstructornotes
579 \newenvironment{instructorNotes}%
580        {%
581 \setbox0\vbox\bgroup
582        }
583        {%
```

```
584  \egroup
585          }
586          \else
587          \newenvironment{instructorNotes}%
588                  {%
589          \begin{trivlist}
590          \item[\hskip \labelsep\bfseries \GetTranslation{Instructor Notes}:\hspace{2ex}]
591                  }
592                  % %% line at the bottom}
593                  {
594          \end{trivlist}
595          \par\addvspace{.5ex}\nobreak\noindent\hung
596                  }
597                          \fi
598                                  \fi
599
600  ⟨/classXimera⟩
```

2.4.11 Foldable

The package `mdframed` is used to make pretty foldable, but the amsthm/mdframed conflict also messes up the .jax file so we don't load mdframed when performing the xake step. But even the below isn't enough to fix this.

```
601  %\iftikzexport\else\RequirePackage[framemethod=TikZ]{mdframed}\fi
```

foldable   Does it fold?

```
602  ⟨∗classXimera⟩
603
604  \colorlet{textColor}{black} % since textColor is referenced below
605  \colorlet{background}{white} % since background is referenced below
606
607  % The core environments. Find results in 4ht file.
608  %% pretty-foldable
609  %\iftikzexport
610  \newenvironment{foldable}{%
611  }{%
612  }
613  %\else
614  %\renewmdenv[
615  %  font=\upshape,
616  %  outerlinewidth=3,
617  %  topline=false,
618  %  bottomline=false,
619  %  leftline=true,
620  %  rightline=false,
621  %  leftmargin=0,
622  %  innertopmargin=0pt,
623  %  innerbottommargin=0pt,
624  %  skipbelow=\baselineskip,
625  %  linecolor=textColor!20!white,
626  %  fontcolor=textColor,
627  %  backgroundcolor=background
628  %]{foldable}%
629  %\fi
630
631  %% pretty-expandable
632  %\iftikzexport
633  %% Overwritten in .4ht, but probably also in accordion!
634  \ifdefined\xmNotExpandableAsAccordion
635  \newenvironment{expandable}{}{}
636  \else
637  \newenvironment{expandable}[2]{}{}
638  \fi
639  %\else
```

```
640 %\newmdenv[
641 %  font=\upshape,
642 %  outerlinewidth=3,
643 %  topline=false,
644 %  bottomline=false,
645 %  leftline=true,
646 %  rightline=false,
647 %  leftmargin=0,
648 %  innertopmargin=0pt,
649 %  innerbottommargin=0pt,
650 %  skipbelow=\baselineskip,
651 %  linecolor=black,
652 %]{expandable}%
653 %\fi
654
655 \newcommand{\unfoldable}[1]{#1}
656
657 ⟨/classXimera⟩
```

On the web, these foldable elements could be HTML5 details and summary.

```
658 ⟨∗htXimera⟩
659 \renewenvironment{foldable}{\stepcounter{identification}\ifvmode \IgnorePar\fi \EndP\HCode{<‹
660
661 \ifdefined\xmNotExpandableAsAccordion
662 \renewenvironment{expandable}{\stepcounter{identification}\ifvmode \IgnorePar\fi \EndP\HCode‹
663 \fi
664
665 \renewcommand{\unfoldable}[1]{\HCode{<span class="unfoldable">}#1\HCode{</span>}}
666 ⟨/htXimera⟩
```

2.4.12 Leashes

leash   Put content inside a scrollable box.

```
667 ⟨∗classXimera⟩
668
669 \newenvironment{leash}[1]{%
670 }{%
671 }
672
673
674 ⟨/classXimera⟩

675 ⟨∗htXimera⟩
676 \renewenvironment{leash}[1]{\ifvmode \IgnorePar\fi \EndP\HCode{<div style="overflow: auto; he‹
677 ⟨/htXimera⟩
```

2.5 Document metadata

2.5.1 Metadata

To encourage authors to include relevant parseable metadata in the preamble, we define some currently ignored commands.

\license   In the preamble, use \license with an SPDX license expression.

```
678 ⟨∗classXimera⟩
679 \newcommand{\license}{\excludecomment}
680 ⟨/classXimera⟩
```

\acknowledgement   In the preamble, use \acknowledgement to credit others who contributed to the intellectual content beside the author.

```
681 ⟨∗classXimera⟩
682 \newcommand{\acknowledgement}{\excludecomment}
683 ⟨/classXimera⟩
```

\tag   In the preamble, a \tag provides a free-form taxonomy.

```
684 ⟨∗classXimera⟩
```

15

```
685 \renewcommand{\tag}{\excludecomment}
686 ⟨/classXimera⟩
```

On the HTML side, we mark the file as the appropriate kind of object—either activity or xourse.

```
687 ⟨∗htXourse⟩
688 % Mark this as a xourse file
689 \Configure{@HEAD}{\HCode{<meta name="description" content="xourse" />\Hnewline}}
690 ⟨/htXourse⟩
```

2.5.2   Abstract

abstract   Every activity should include a short abstract.

```
691 ⟨∗classXimera⟩
692 \let\abstract\relax
693 \let\endabstract\relax
694 % Use of environ package, may want to find a better way.
695 % see the messing around with \theabstract in title.dtx ... Is this really needed/wanted?
696 \NewEnviron{abstract}{\protected@xdef\theabstract{\BODY}}
697 ⟨/classXimera⟩
```

The abstract has been stored in **\theabstract** and should be emitted as a div. The code below is required for the abstract to show online.

```
698 ⟨∗cfgXimera⟩
699 \ifvmode\IgnorePar\fi\EndP
700 \ConfigureEnv{abstract}{\ifvmode\IgnorePar\fi\EndP\HCode{\Hnewline<div class="abstract">}\par
701 ⟨/cfgXimera⟩
```

```
702 ⟨∗htXimera⟩
703 \RenewEnviron{abstract}{\BODY}
704 ⟨∗htXimera⟩
```

2.5.3   Titles and authors

2.5.4   Authors

\author   Activities have authors. Warn the user if no author is provided.

```
705 ⟨∗classXimera⟩
706 \let\@emptyauthor\@author
707 \def\@authorfootnote{\gdef\@thefnmark{}\@footnotetext}
708 \def\author#1{\gdef\@author{#1}}
709 \def\@author{\@latex@warning@no@line{No \noexpand\author given}}
710 ⟨/classXimera⟩
```

Include author name in meta tags

```
711 ⟨∗htXimera⟩
712 \Configure{@HEAD}{\HCode{<meta name="author" content="}\@author\HCode{" />\Hnewline}}
713 ⟨/htXimera⟩
```

The **\and** command would emit tabular environments which really should not appear in a meta tag.

```
714 ⟨htXimera | classXimera⟩\def\and{and }
```

2.5.5   Title

\title   Activities have titles.

```
715 ⟨∗classXimera⟩
716 \let\title\relax
717 \newcommand{\title}[1][]{{\protected@xdef\@pretitle{#1}}\protected@xdef\@title}
718
719 \title{}
720
721 \newcounter{titlenumber}
722 \renewcommand{\thetitlenumber}{\arabic{titlenumber}}
723 %\renewcommand{\thesection}{\arabic{titlenumber}} %% Makes section numbers work
```

```
724 \setcounter{titlenumber}{0}
725
726 \newpagestyle{main}{
727 \sethead[\textsl{\ifnumbers\thetitlenumber\hspace{1em}\fi\@title}][][] % even
728 {}{}{\textsl{\ifnumbers\thetitlenumber\hspace{1em}\fi\@title}} % odd
729 \setfoot[\thepage][][] % even
730 {}{}{\thepage} % odd
731 }
732 \pagestyle{main}
```

\maketitle   In a ximera document, redefine \maketitle and put them in a table of contents. The
\phantomsection is to fix the hrefs.

```
733 \renewcommand\maketitle{%
734   \addtocounter{titlenumber}{1}%
735   {\flushleft\large\bfseries \@pretitle\par\vspace{-1em}}
736   {\flushleft\LARGE\bfseries {\ifnumbers\thetitlenumber\fi}{\ifnumbers\hspace{1em}\else\hspac
737   \phantomsection%
738   \ifnumbers\addcontentsline{toc}{section}{\thetitlenumber~\@title}\else\addcontentsline{toc
739   \vskip .6em\noindent\textit\theabstract\setcounter{problem}{0}\setcounter{section}{0}\setco
740   %\ifnooutcomes\else\let\thefootnote\relax\footnote{Learning outcomes: \theoutcomes}\fi% Dep
741   \ifnoauthor\else\@authorfootnote{Author(s):~\@author}\fi
742   \aftergroup\@afterindentfalse
743   \aftergroup\@afterheading}
744
745 \ifnumbers
746 \setcounter{secnumdepth}{2}
747 \renewcommand{\thesection}{\arabic{titlenumber}.\arabic{section}}
748 \renewcommand{\thesubsection}{\arabic{titlenumber}.\arabic{section}.\arabic{subsection}}
749 \else
750 \setcounter{secnumdepth}{-2}
751 \fi
752
753 \def\activitystyle{}
754 \newcounter{sectiontitlenumber}
755 \setcounter{secnumdepth}{2}
756 \setcounter{tocdepth}{2}
757 \newcommand\chapterstyle{%
758   \def\activitystyle{activity-chapter}
759   \def\maketitle{%
760     \addtocounter{titlenumber}{1}%
761                   {\flushleft\small\sffamily\bfseries\@pretitle\par\vspace{-1.5em}}%
762                   {\flushleft\LARGE\sffamily\bfseries\thetitlenumber\hspace{1em}\@title \pa
763                   {\vskip .6em\noindent\textit\theabstract\setcounter{problem}{0}\setcounte
764                   \par\vspace{2em}
765                   \phantomsection\addcontentsline{toc}{section}{\textbf{\thetitlenumber\hsp
766 }}
767
768
769 \newcommand\sectionstyle{%
770   \def\activitystyle{activity-section}
771   \def\maketitle{%
772     \addtocounter{section}{1}
773     \setcounter{sectiontitlenumber}{\value{section}}
774     {\flushleft\small\sffamily\bfseries\@pretitle\par\vspace{-1.5em}}%
775     {\flushleft\Large\sffamily\bfseries\thetitlenumber.\thesectiontitlenumber\hspace{1em}\@ti
776     {\vskip .6em\noindent\textit\theabstract\setcounter{subsection}{0}}%
777     \par\vspace{2em}
778     \phantomsection\addcontentsline{toc}{section}{\thetitlenumber.\thesectiontitlenumber\hspa
779   \renewcommand\section{\@startsection{subsection}{2}{\z@}%
780                                       {-3.25ex\@plus -1ex \@minus -.2ex}%
781                                       {1.5ex \@plus .2ex}%
782                                       {\normalfont\large\bfseries}}
783
784   \renewcommand\subsection{\@startsection{subsubsection}{3}{\z@}%
```

```
785                                          {-3.25ex\@plus -1ex \@minus -.2ex}%
786                                          {1.5ex \@plus .2ex}%
787                                          {\normalfont\normalsize\bfseries}}
788
789 }}
790
791
792 \iftikzexport%% allows xake to handle \chapterstyle and \sectionstye
793 \renewcommand\chapterstyle{\def\activitystyle{chapter}}
794 \renewcommand\sectionstyle{\def\activitystyle{section}}
795 \else
796 \fi
797
798 ⟨/classXimera⟩
```

Eliminate some formatting that we'll handle later with CSS

```
799 ⟨∗htXimera⟩
800 \renewcommand{\maketitle}{}
801 ⟨/htXimera⟩
```

2.5.6 Only in HTML or PDF

Ximera provides several techniques to display some content only in the PDF, or only online. The `prompt` environment can be used to hide the data-entry part of a problem from the PDF: it's contents only get displayed online.

The lower level commands `\pdfOnly` and `\htmlOnly` also limit the output to either PDF or online, similarly to the environments `onlyPdf` and `onlyHtml`.

If `\xmPrintHtmlOnlyAlsoInPdf` is set, the online/html only things are printed in the PDF anyway (e.g. for review).

Unfortunately it is not possible in LATEX to have a command and an environment with the same name. We opted for the above (confusing...) names.

For backward compatibility, the deprecated environment `onlineOnly` is identical to `onlyHtml`.

For more advanced usage also commands `\ifonline` and `ifonlineTF` are provided.

The technique used to distinguish between the PDF-version and the online HTML-version is always the existence of the TeX4ht macro `\HCode`. Older distinctions such as `\ifxake`, `ifhandout` or `\iftikzexport` should no longer be used for this purpose.

prompt   The prompt part for mathmode

```
802 ⟨∗classXimera⟩
803 \ifxake
804         \newenvironment{prompt}{}{}
805 \else
806 \ifhandout
807 \NewEnviron{prompt}{}
808     % Breaks when put in mathmode ?
809     % \newenvironment{prompt}{\suppress}{\endsuppress}
810 \else
811 \newenvironment{prompt}{\bgroup\color{gray!50!black}}{\egroup}
812 \fi
813 \fi
```

onlyHtml   Only display online
onlyPdf   Only display in the PDF
onlineOnly Only display online (deprecated: use onlyHtml instead)

```
814 \ifdefined\HCode
815 \newenvironment{onlyPdf}{\setbox0\vbox\bgroup}{\egroup}
816 \newenvironment{onlyHtml}{\bgroup}{\egroup}
817 \newenvironment{onlineOnly}{\bgroup}{\egroup}
818 \else
819 \newenvironment{onlyPdf}{\bgroup}{\egroup}
820 \ifdefined\xmPrintHtmlOnlyAlsoInPdf
821 \newenvironment{onlyHtml}{\bgroup\color{red!50!black}}{\egroup}
822 \newenvironment{onlineOnly}{\bgroup\color{red!50!black}}{\egroup}
```

```
823  \else
824  \newenvironment{onlyHtml}{\setbox0\vbox\bgroup}{\egroup}
825  \newenvironment{onlineOnly}{\setbox0\vbox\bgroup}{\egroup}
826  \fi
827  \fi
828
```

\htmlOnly   Only display online
\pdfOnly   Only display in the PDF

```
829
830  \ifdefined\HCode
831  \newcommand{\pdfOnly}[1]{}
832  \newcommand{\htmlOnly}[1]{#1}
833  \else
834  \ifdefined\xmPrintHtmlOnlyAlsoInPdf
835  \newcommand{\pdfOnly}[1]{#1}
836  \newcommand{\htmlOnly}[1]{\bgroup\color{red!50!black}#1\egroup}
837  \else
838  \newcommand{\pdfOnly}[1]{#1}
839  \newcommand{\htmlOnly}[1]{}
840  \fi
841  \fi
842
```

\ifonline   Only execute online (ie in HTML version)
\ifonlineTF   Different output online vs PDF

```
843  % An alternatife for \pdfOnly/\begin{htmlOnly} :
844  % Usage: Hello \ifonlineTF{online reader}{PDF reader}
845  \providecommand{\ifonlineTF}[2]{\htmlOnly{#1}\pdfOnly{#2}}
846  \newif{\ifonline}
847  \ifdefined\HCode
848  \onlinetrue
849  \else
850  \onlinefalse
851  \fi
852  ⟨/classXimera⟩
```

2.5.7   Learning Outcomes

```
853  ⟨*classXimera⟩
854  \newcommand{\preOutcomeLine}{\item }
855  \newcommand{\postOutcomeLine}{}
856  \newcommand{\preOutcomeBlock}{After completing this content, students should be able to: \beg
857  \newcommand{\postOutcomeBlock}{\end{itemize} So go forth and learn!}
858
859  \newcommand{\outcomeHeader}{Goals for this Section}
860  \htmlOnly{
861    \newcommand{\outcomeBlock}{\ifvmode\IgnorePar\fi\EndP\HCode{<div class="outcomeHead">} \ou
862  }
863
864
865  \newwrite\outcomefile
866  \immediate\openout\outcomefile=\jobname.oc
867  \newcommand{\outcome}[1]{%
868    \immediate\write\outcomefile{\expandafter\unexpanded\expandafter{\preOutcomeLine #1} \expa
869  }
870
871  \newcommand{\displayOutcomes}[1][]{%
872    \immediate\closeout\outcomefile
873    \IfFileExists{\currfiledir\currfilebase.oc}{
874      \htmlOnly{\outcomeBlock}
875        \expandafter\preOutcomeBlock
876        \input{\currfiledir\currfilebase.oc}
877        \postOutcomeBlock
```

```
878        \htmlOnly{\ifvmode\IgnorePar\fi\EndP\HCode{</div>}}
879      }
880      {
881      \IfFileExists{\currfilebase.oc}{
882        \htmlOnly{\outcomeBlock}
883          \expandafter\preOutcomeBlock
884          \input{\currfilebase.oc}
885          \postOutcomeBlock
886        \htmlOnly{\ifvmode\IgnorePar\fi\EndP\HCode{</div>}}
887      }
888      {
889        No outcome file found.
890      }
891    }
892  }
893 %
894 ⟨/classXimera⟩
```

These can appear in either the preamble or in problem environments. with pdflatex, we produce the .oc file which includes ALL the outcomes; in the tex4ht world, we just produce spans for the specific outcomes.

```
895 ⟨∗cfgXimera⟩
896 \renewcommand{\outcome}[1]{
897   \Configure{@HEAD}{\HCode{<meta name="learning-outcome" content="#1"/>\Hnewline}}
898 }
899 % Sometimes there are no outcomes at all
900 \IfFileExists{\jobname.oc}{\input{\jobname.oc}}{}
901
902 \renewcommand{\outcome}[1]{%
903   \HCode{<span class="learning-outcome">#1</span>}
904 }
905 ⟨/cfgXimera⟩
```

2.5.8 Labels and references

\label   Labels and refs both generate anchors. A \label can be referenced from any file in the xourse.

```
906 ⟨∗htXimera⟩
907 \let\oldlabel\label
908 \renewcommand{\label}[1]{\oldlabel{#1}\HCode{<a class="ximera-label" id="#1"></a>}}
909 ⟨/htXimera⟩
```

\ref   A \ref can connect one TeX file to another if they are in the same xourse.

```
910 ⟨∗htXimera⟩
911 \renewcommand{\ref}[1]{\HCode{<a class="reference" href="\##1">#1</a>}}
912 ⟨/htXimera⟩
```

2.6 Images

2.6.1 Images

image   Place images inside an image environment. On paper, this centers the image. On the
\xmDefaultGraphicsPath   web, this provides additional benefits. Base graphicspath, deafult '/xmPictures'. Can only be changed BEFORE loading ximera.cls!

```
913 ⟨∗classXimera⟩
914 % Provide a default graphicspath
915 % (somewhat tricky: an activity can be included in a xourse in a wildly different path !)
916 % Suggested convention: put all images in i /pictures folder in the root of your project
917 \providecommand{\xmDefaultGraphicsPath}{/xmPictures}
918 \graphicspath{  %% When looking for images,
919 {./}              %% look here first,
920 {.\xmDefaultGraphicsPath/}    %% then look for a pictures folder,
921 {..\xmDefaultGraphicsPath/}   %% then look for a pictures folder,
922 {../..\xmDefaultGraphicsPath/}   %% then look for a pictures folder,
923 {../../..\xmDefaultGraphicsPath/}   %% then look for a pictures folder,
```

```
924 }
925 %\newenvironment{image}[1][]{\begin{center}}{\end{center}}
926 \NewEnviron{image}[1][3in]{%
927   \begin{center}\resizebox{#1}{!}{\BODY}\end{center}% resize and center
928 }
929 ⟨/classXimera⟩
```

\alt   Inside an `image` environment, `\alt` provides alt-text for assistive technology like screen-readers.

```
930 ⟨∗classXimera⟩
931 \newcommand{\alt}[1]{}
932 ⟨/classXimera⟩
```

The `image` environment doesn't actually work in tex4ht as defined with NewEnviron; so this renewenvironment is needed. image-environment also gets formatted in a well, and when the user clicks on the image, it zooms in.

```
933 ⟨∗htXimera⟩
934 \newcounter{imagealt}
935 \setcounter{imagealt}{0}
936 \renewenvironment{image}[1][]{\stepcounter{imagealt}%
937   \ifvmode \IgnorePar\fi \EndP%
938   \HCode{<div class="image-environment" role="img" aria-labelledby="image-alt-\arabic{imagea
939 }{\HCode{</div>}}
940 \renewcommand{\alt}[1]{\HCode{<div style="display: none;" id="image-alt-\arabic{imagealt}">}#
941 ⟨/htXimera⟩
942 ⟨∗cfgXimera⟩
943 %%  Although we accept many formats, SVG is preferred on the web.
944 %%  Since we have a different mechanism for producing |alt| text, we
945 %%  want to ignore tex4ht's own method fo producing alt text.
946 %%  2024: is now in TeX4ht ...
947 % \DeclareGraphicsExtensions{.jpg,.png,.gif,.svg}
948 % \Configure{graphics*}
949 % {svg}{
950 %   {\Configure{Needs}{File: \Gin@base.svg}\Needs{}}
951 %   \Picture[]{\csname Gin@base\endcsname.svg \csname a:Gin-dim\endcsname}%
952 % }
953 ⟨/cfgXimera⟩
```

This is a hack to kill `includegraphics` commands in `\documentclass{standalone}` files

```
954 ⟨∗cfgXimera⟩
955 \ifcsname ifstandalone\endcsname
956   \ifstandalone
957     \renewcommand\includegraphics[2][]{}
958   \fi
959 ⟨/cfgXimera⟩
```

PGF sometimes causes trouble, but we simply don't care in tex4ht mode.

```
960 ⟨∗htXimera⟩
961 \providecommand{\pgfsyspdfmark}[3]{}
962 ⟨/htXimera⟩
```

2.6.2   TikZ export

2024: We DON NOT ANYMORE generate SVGs and PNGs for any TikZ images, via the "externalize" feature of TikZ.

Previously TikZ didn't compile natively into the website because of how the xake bake compilation works. In order to make Tikz work, you need to get the tool `mutool` on the machine that is performing `xake bake`.

```
963 ⟨∗classXimera⟩
964 % everything skipped, assumle TeX4ht does the jjb now
965 \ifdefined\reallyneverever
966
967 \ifdefined\HCode
```

```
968     \tikzexporttrue
969  \fi
970
971  \iftikzexport
972     \usetikzlibrary{external}
973
974     \ifdefined\HCode
975       % in htlatex, just include the svg files
976       \def\pgfsys@imagesuffixlist{.svg}
977
978       \tikzexternalize[prefix=./,mode=graphics if exists]
979     \else
980       % in pdflatex, actually generate the svg files
981       \tikzset{
982         /tikz/external/system call={
983           pdflatex \tikzexternalcheckshellescape
984           -halt-on-error -interaction=batchmode
985           -jobname "\image" "\\PassOptionsToClass{tikzexport}{ximera}\texsource";
986           mutool draw -F svg \image.pdf > \image.svg ;      % mutool adds "1" to filename ????
987           mutool draw -o \image.svg \image.pdf ;
988           mutool draw -r 150 -c rgbalpha -o \image.png \image.pdf ;
989           ebb -x \image.png
990         }
991       }
992       \tikzexternalize[optimize=false,prefix=./]
993     \fi
994
995     \fi
996  \fi
997  ⟨/classXimera⟩
```

2.6.3 XKCD

\xkcd   Reference an XKCD cartoon.

```
998  ⟨∗classXimera⟩
999  \newcommand{\xkcd}[1]{#1}
1000 ⟨/classXimera⟩
```

On the web, this should be an image linked to the actual XKCD website.

```
1001 ⟨∗htXimera⟩
1002 \renewcommand{\xkcd}[1]{\ifvmode \IgnorePar\fi \EndP\HCode{<img src="https://imgs.xkcd.com/co
1003 ⟨/htXimera⟩
```

2.7 Links

We put hyperref after all other packages becuase that is better.

```
1004 ⟨∗classXimera⟩
1005 % Don't use hyperref when using Tex4ht
1006 \ifdefined\HCode
1007 \RequirePackage{hyperref}
1008 \else
1009 \RequirePackage[pdfpagelabels,colorlinks=true,allcolors=blue!30!black]{hyperref}
1010 \pdfstringdefDisableCommands{\def\hskip{}}%% quiets warning
1011 \fi
1012 ⟨/classXimera⟩
```

2.8 Interactives

2.8.1 Including widgets

\includeinteractive   Cognate to `includegraphics` but instead of a graphics file, accepts a `.js` file which will
be loaded as an interactive widget.

```
1013 ⟨∗classXimera⟩
```

```
1014 \define@key{interactive}{id}{\def\interactive@id{#1}}
1015 \setkeys{interactive}{id=}
1016 \newcommand{\includeinteractive}[2][]{
1017 \setkeys*{interactive}{#1}%
1018 \ifthenelse{\equal{\interactive@id}{}}{}{\recordvariable{\interactive@id}}
1019 Interactive
1020 }
1021 ⟨/classXimera⟩

1022 ⟨∗htXimera⟩
1023 \renewcommand{\includeinteractive}[2][]{\stepcounter{identification}\ifvmode \IgnorePar\fi \l
1024 ⟨/htXimera⟩
```

2.8.2 Google Sheet

\googleSheet googleSheet command. Requires id, width, and height as arguments. optional arguments
are gid for sheet ID and range for cell range. command definition

```
1025 ⟨∗classXimera⟩
1026 % Google Spreadsheet link (read only)
1027 \newcommand{\googleSheet}[5]{%
1028   Google Spreadsheet link: \expandafter\url{\detokenize{https://docs.google.com/spreadsheets/
1029 }
1030 ⟨/classXimera⟩

1031 ⟨∗htXimera⟩
1032 \renewcommand{\googleSheet}[5]{%
1033   \ifthenelse{\equal{#4}{}}%
1034     {\HCode{<iframe width="#2px" height="#3px" src="https://docs.google.com/spreadsheets/d/#1
1035     {\ifthenelse{\equal{#5}{}}%
1036       {\HCode{<iframe width="#2px" height="#3px" src="https://docs.google.com/spreadsheets/d
1037       {\HCode{<iframe width="#2px" height="#3px" src="https://docs.google.com/spreadsheets/d
1038     }%
1039   }%
1040 ⟨/htXimera⟩
```

2.8.3 Geogebra

\geogebra Geogebra command. Requires id, width, and height as arguments.

```
1041 ⟨∗classXimera⟩
1042 %Geogebra link
1043 \newcommand{\geogebra}[3]{GeoGebra link: \url{https://www.geogebra.org/m/#1}}
1044 ⟨/classXimera⟩
```

Define keys for answer geogebra key=value pairs.

```
1045 ⟨∗htXimera⟩
1046 \define@key{geogebra}{rc}[true]{\def\geo@rc{#1}}
1047 \define@key{geogebra}{sdz}[true]{\def\geo@sdz{#1}}
1048 \define@key{geogebra}{smb}[true]{\def\geo@smb{#1}}
1049 \define@key{geogebra}{stb}[true]{\def\geo@stb{#1}}
1050 \define@key{geogebra}{stbh}[true]{\def\geo@stbh{#1}}
1051 \define@key{geogebra}{ld}[true]{\def\geo@ld{#1}}
1052 \define@key{geogebra}{sri}[true]{\def\geo@sri{#1}}
1053 %set default key values
1054 \setkeys{geogebra}{rc=false,sdz=false,smb=false,stb=false,stbh=false,ld=false,sri=false}
1055 %command definition
1056 \renewcommand{\geogebra}[4][]{%
1057   \setkeys{geogebra}{#1}% Set new keys
1058   \HCode{<iframe scrolling="no" src="https://www.geogebra.org/material/iframe/id/#2/width/#3/
1059 ⟨/htXimera⟩
```

2.8.4 Desmos

\desmos Desmos command. Requires id, width, and height as arguments.

```
1060 ⟨∗classXimera⟩
```

23

1061 ⟨classXimera⟩ `\newcommand{\desmos}[3]{Desmos link: \url{https://www.desmos.com/calculator/#1}}`
1062 `\newcommand{\desmosThreeD}[3]{Desmos3D link: \url{https://www.desmos.com/3d/#1}}`
1063 ⟨/classXimera⟩

1064 ⟨∗htXimera⟩
1065 `\catcode`\%=11`
1066 `\renewcommand{\desmos}[3]{\HCode{<iframe src="https://www.desmos.com/calculator/#1" width="10`
1067 `\catcode`\%=14`
1068 `\renewcommand{\desmosThreeD}[3]{\HCode{<iframe src="https://www.desmos.com/3d/#1" width="#2px`
1069 ⟨/htXimera⟩

2.8.5 Graphs

\graph   An embedded graph (in math mode).

1070 ⟨∗classXimera⟩
1071 `\newcommand{\graph}[2][]{\text{Graph of $#2$}}`
1072 ⟨/classXimera⟩

1073 ⟨∗htXimera⟩
1074 `\renewcommand{\graph}[2][]{\HCode{<div class="graph" data-options="#1">}#2\HCode{</div>}}`
1075 ⟨/htXimera⟩

2.8.6 Video

\youtube   Youtube command. Requires id.

1076 ⟨∗classXimera⟩
1077 `\newcommand{\youtube}[1]{YouTube link: \url{https://www.youtube.com/watch?v=#1}}`
1078 ⟨/classXimera⟩

1079 ⟨∗htXimera⟩
1080 `%% \renewcommand{\youtube}[1]{\ifvmode \IgnorePar\fi \EndP\HCode{<div class="video youtube-pl`
1081 `% Fixes no-youtube-when-no-cookies-accepted. Class xmyoutube allows for css customization.`
1082 `\renewcommand{\youtube}[1]{\ifvmode \IgnorePar\fi \EndP\HCode{<iframe class="xmyoutube" src="`
1083
1084 ⟨/htXimera⟩

Video commands are also emitted, slightly differently, when placed at top-level in a xourse file.

1085 ⟨∗htXourse⟩
1086 `\renewcommand\youtube[1]{%`
1087 `\ifvmode \IgnorePar\fi \EndP\HCode{<a class="youtube" href="https://www.youtube.com/watch?v=#`
1088 `}`
1089 ⟨/htXourse⟩

2.8.7 JavaScript

javascript   Code inside a javascript environment is printed on paper, but executed on the web.

1090 ⟨∗classXimera⟩
1091 `\DefineVerbatimEnvironment{javascript}{Verbatim}{numbers=left,frame=lines,label=JavaScript,la`
1092 ⟨/classXimera⟩

1093 ⟨∗htXimera⟩
1094 `% for programming javascript`
1095 `\renewenvironment{javascript}{\NoFonts}{\EndNoFonts}`
1096 `\ScriptEnv{javascript}{\stepcounter{identification}\ifvmode \IgnorePar\fi \EndP\HCode{<div cl`
1097 ⟨/htXimera⟩

\js   Code inside a \js macro is evaluated and replaced with its value.

1098 ⟨∗classXimera⟩
1099 `\def\js#1{\mbox{\texttt{\detokenize{#1}}}}`
1100 ⟨/classXimera⟩

1101 ⟨∗htXimera⟩
1102 `\def\js#1{\stepcounter{identification}\HCode{<span class="inline-javascript" id="javascript\a`
1103 ⟨/htXimera⟩

24

2.9   SageMath support

Load SageTeX if it exists.

```
1104 ⟨∗classXimera⟩
1105 \IfFileExists{sagetex.sty}{\RequirePackage{sagetex}}{}
1106 ⟨/classXimera⟩
```

sageCell   Create an interactive SageMath widget.

```
1107 ⟨∗classXimera⟩
1108 \DefineVerbatimEnvironment{sageCell}{Verbatim}{numbers=left,frame=lines,label=SAGE,labelposi
1109 ⟨/classXimera⟩

1110 ⟨∗htXimera⟩
1111 \renewenvironment{sageCell}{\NoFonts}{\EndNoFonts}
1112 \ScriptEnv{sageCell}{\ifvmode \IgnorePar\fi \EndP\HCode{<div class="sage"><script type="text/
1113 ⟨/htXimera⟩
```

sageOutput   Execute SageMath code and output the result.

```
1114 ⟨∗classXimera⟩
1115 \DefineVerbatimEnvironment{sageOutput}{Verbatim}{numbers=left,frame=lines,label=SAGE-Output,l
1116 ⟨/classXimera⟩

1117 ⟨∗htXimera⟩
1118 \renewenvironment{sageOutput}{\NoFonts}{\EndNoFonts}
1119 \ScriptEnv{sageOutput}{\ifvmode \IgnorePar\fi \EndP\HCode{<div class="sageOutput"><script typ
1120 ⟨/htXimera⟩
```

sageSilent   Execute SageMath code without outputting the result.

```
1121 ⟨∗htXimera⟩
1122 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
1123 \ifdefined\sagesilent
1124    \renewenvironment{sagesilent}{\NoFonts}{\EndNoFonts}
1125 \fi
1126 \ScriptEnv{sagesilent}{\ifvmode \IgnorePar\fi \EndP\HCode{<script type="text/sagemath">}\Html
1127 ⟨/htXimera⟩
```

2.10   Answerables

2.10.1   Answers

\answer   A math answer

```
1128 ⟨∗classXimera⟩
1129
1130 \ifdefined\HCode
1131 \newcommand{\recordvariable}[1]{}
1132 \else
1133 \newwrite\idfile
1134 \immediate\openout\idfile=\jobname.ids
1135 \newcommand{\recordvariable}[1]{\ifthenelse{\equal{#1}{}}{}{\immediate\write\idfile{var #1;}
1136 \fi
```

Determines if answer is shown in handout mode. when `given=true`, show answer in handout mode, show answer in "given box" outside handout mode. When `given=false`, do not show answer in handout mode, show answer outside handout mode

```
1137 \define@key{answer}{given}[true]{\def\ans@given{#1}}
```

Used for setting numeric answer tolerance for online student input.

```
1138 \define@key{answer}{tolerance}{\def\ans@tol{#1}}
```

Used to run dynamic js code on student provided answers. Note: currently pdf outputs the validator code itself.

```
1139 \define@key{answer}{validator}{}
```

Used for assigning a js ID to answer for dynamic code (eg validators).

```
1140 \define@key{answer}{id}{\def\ans@id{#1}}
```

Used to set anticipated input format; eg "string".

```
1141 \define@key{answer}{format}{}
```

Used to hide the answer input box on the web.

```
1142 \define@key{answer}{onlinenoinput}[false]{}
```

Used to add a 'show answer' button to the answer blank.

```
1143 \define@key{answer}{onlineshowanswerbutton}[false]{}
```

Set default values for \answer command key=value pairs. Default values are given = false.

```
1144 \setkeys{answer}{id=,given=false,onlinenoinput=false,onlineshowanswerbutton=false}
```

Basic code for \answer.

```
1145
1146 % Options for handout
1147 \newcommand{\answerFormatLength}{2cm}
1148
1149 \newcommand{\answerFormatDots}[1]{\ldots\ldots}
1150 \newcommand{\answerFormatLine}[1]{\protect\rule{\answerFormatLength}{0.4pt}}
1151 \newcommand{\answerFormatFlexibleLine}[1]{\protect\rule{\widthof{$#1$}*2}{0.4pt}}
1152 \newcommand{\answerFormatFlexibleBox}[1]{\fbox{\scalebox{2}{\phantom{$#1$}}}}
1153
1154 % options for default (i.e with answers filled in)
1155 \newcommand{\answerFormatPlain}[1]{\ensuremath{#1}}
1156 \newcommand{\answerFormatBlue}[1]{\color{blue}\ensuremath{#1}}
1157 \newcommand{\answerFormatBoxed}[1]{\fbox{\ensuremath{#1}}}
1158 \newcommand{\answerFormatBoxedGiven}[1]{\underset{\scriptstyle\mathrm{given}}{\fbox{\ensurema
1159
1160 % defaults for handout and default mode, and for \answer[given]
1161 \let\handoutAnswerFormat\answerFormatDots
1162 \let\defaultAnswerFormat\answerFormatBlue
1163 \let\givenAnswerFormat\answerFormatBoxedGiven
1164
1165 \newcommand{\answer}[2][]{%
1166 \ifmmode%
1167 \setkeys{answer}{#1}%
1168 \recordvariable{\ans@id}
1169 \ifthenelse{\boolean{\ans@given}}
1170 {% Start then statement
1171 \ifhandout
1172 #2
1173 \else
1174 \givenAnswerFormat{#2} %% in case the argument helps formatting
1175 \fi
1176 }% End then statement
1177 {% Start else statement
1178 \ifhandout
1179 \handoutAnswerFormat{#2} %% in case the argument helps formatting
1180 \else% show answer in box outside handout mode
1181 \defaultAnswerFormat{#2} %% in case the argument helps formatting
1182 \fi
1183 }% End else statement
1184 \else%
1185 \GenericError{\space\space\space\space}% Throw an error based on... something? -- Jason
1186 {Attempt to use \@backslashchar answer outside of math mode}
1187 {See https://github.com/ximeraProject/ximeraLatex for explanation.}
1188 {Need to use either inline or display math.}%
1189 \fi
1190 }
1191 ⟨/classXimera⟩
```

On the HTML side, \answer emits spans—but it is usually just handled directly by MathJax.

```
1192 ⟨*htXimera⟩
1193 \renewcommand{\answer}[2][false]{\HCode{<span class="answer respondable">}#2\HCode{</span>}}
1194
1195 \def\validator[#1]{\stepcounter{identification}\HCode{<div class="validator" id="validator\a
1196 \def\endvalidator{\HCode{</div>}}
```

```
1197
1198 ⟨/htXimera⟩
```

2.10.2   Multiple choice and the like

multipleChoice   Multiple choice

```
1199 ⟨∗classXimera⟩
1200 % Jim: Originally this was \renewcommand{\theenumi}{$(\mathrm{\alph{enumi}})$}
1201 % but that breaks tex4ht because mathmode can only be processed by mathjax.
1202 % so now I made this just italicized.
```

2.10.3   Options

```
1203 \define@key{choice}{value}[]{\def\choice@value{#1}}
```

This flags the answer as the correct answer
```
1204 \define@boolkey{choice}{correct}[true]{\def\choice@correct{#1}}
```

Use an ID to refer to the choice.
```
1205 \define@key{multipleChoice}{id}{\def\mc@id{#1}}
```

\otherchoice outputs the item if correct and nothing if incorrect.
```
1206 \define@key{otherchoice}{value}[]{\def\otherchoice@value{#1}}
1207 \define@boolkey{otherchoice}{correct}[true]{\def\otherchoice@correct{#1}}
```

Default key choices for multiple choice options. Default for choice pairs. Default: answers without the option "correct=true" is "incorrect".
```
1208 \setkeys{choice}{correct=false,value=}
```

Defaults for multipleChoice pairs. Default to no id? – Jason
```
1209 \setkeys{multipleChoice}{id=}
```

Defaults for otherchoice pairs. Default "otherchoice" to behave like "choice" for error checking.
```
1210 \setkeys{otherchoice}{correct=false,value=}
1211 ⟨/classXimera⟩
```
2.10.4   Choices

\choice   Like \item but for choice environments. choice command denotes a possible answer choice for the multiple choice question.

```
1212 ⟨∗classXimera⟩
1213 \newcommand{\choice}[2][]{%
1214 \setkeys{choice}{#1}%
1215 \item{#2}
1216 \ifthenelse{\boolean{\choice@correct}}
1217     {% Begin then result
1218     \ifhandout% if it's a handout do nothing.
1219     \else% otherwise place a checkmark when you select the "correct choice"... maybe? -- Jaso
1220         \,\checkmark\,\setkeys{choice}{correct=false}
1221     \fi
1222     }% End then result
1223     {}% Begin/End else result.
1224 }
1225
1226 %Define an expandable version of choice Not really meant to be used outside this package (use
1227 % Is there a reason we can't just always use this as default? -- Jason
1228 \newcommand{\choiceEXP}[2][]{%
1229 \expandafter\setkeys\expandafter{choice}{#1}%
1230 \item{#2}
1231 \ifthenelse{\boolean{\choice@correct}}
1232 {% Begin then result
1233 \ifhandout
1234 \else
1235 \,\checkmark\,\setkeys{choice}{correct=false}
1236 \fi
1237 }% End then result
1238 {}% Begin/End else result.
```

```
1239 } %% note all the {} are needed in case the choice has [] in it.
1240
1241 % \otherchoice is the \choice used in wordChoice command.
1242 \newcommand{\otherchoice}[2][]{%
1243 \ignorespaces%
1244 \setkeys{otherchoice}{#1}%
1245 \ifthenelse{\boolean{\otherchoice@correct}}%
1246 {% Start then result
1247 #2\ignorespaces\setkeys{otherchoice}{correct=false}\ignorespaces%
1248 }% End then result
1249 {}% Start/End else result
1250 \ignorespaces%
1251 }%
1252 \newcommand{\inlinechoice}[2][]{%
1253 \setkeys{choice}{#1}%
1254 \iffirstinlinechoice
1255 (\hspace{-.25em}
1256 \firstinlinechoicefalse
1257 \else
1258 /
1259 \fi
1260 #2
1261 \ifthenelse{\boolean{\choice@correct}}%
1262 {% Start then result
1263 \ifhandout\else\checkmark\ignorespaces\setkeys{choice}{correct=false}\ignorespaces\fi%
1264 }% End then result
1265 {}% Start/End else result
1266 \hspace{-.25em}\ignorespaces%
1267 }
1268
1269 ⟨/classXimera⟩
```

On the HTML side, \choice emits `<span>`s.

```
1270 ⟨*htXimera⟩
1271 \newcounter{choiceId}
1272 \renewcommand{\choice}[2][]{%
1273 \setkeys{choice}{correct=false}%
1274 \setkeys{choice}{#1}%
1275 \stepcounter{choiceId}\IgnorePar%
1276 \HCode{<span class="choice }%
1277 \ifthenelse{\boolean{\choice@correct}}{\HCode{correct}}{}
1278 \HCode{" }
1279 \ifthenelse{\equal{\choice@value}{}}{}{\HCode{data-value="\choice@value" }}
1280 \HCode{id="choice\arabic{choiceId}">}%
1281 #2\HCode{</span>}}
1282 \let\inlinechoice\choice
1283 ⟨/htXimera⟩
```

2.10.5 Environment(s)

multipleChoice The environment `multipleChoice@` is for internal use only. Wrap \choices in a `multipleChoice` environment to make a multiple choice question.

```
1284 ⟨*classXimera⟩
1285 \newenvironment{multipleChoice}[1][]
1286 {% Environment Start Code
1287 \setkeys{multipleChoice}{#1}%
1288 \recordvariable{\mc@id}%
1289 \begin{trivlist}
1290 \item[\hskip \labelsep\small\bfseries \GetTranslation{Multiple Choice}:]\hfil
1291 \begin{enumerate}
1292 }% Note this means that \item has to be the first line after \begin{multipleChoice}.
1293 {% Environment End Code
1294 \end{enumerate}
1295 \end{trivlist}
```

28

```
1296 }
1297
1298 %multipleChoice@ is for internal use only! (used in wordChoice)
1299 %this is simply a wrapper for the sole showing (other)choice.
1300 \newenvironment{multipleChoice@}[1][]{}{}
1301 ⟨/classXimera⟩
```

On the web, you might also expect these to be "problem environments" but they aren't – they're respondables. You might expect a `\setcounter{choiceId}{0}` here — that would be wrong, because then the generated IDs would no longer be unique.

```
1302 ⟨*htXimera⟩
1303 \renewenvironment{multipleChoice}[1][]
1304 {\setkeys{multipleChoice}{#1}%
1305 \stepcounter{identification}\ifvmode \IgnorePar\fi \EndP\HCode{<div class="multiple-choice"
1306 \ifthenelse{\equal{\mc@id}{}}{}{\HCode{data-id="\mc@id" }}%
1307 \HCode{id="problem\arabic{identification}" titletext=" \GetTranslation{Multiple Choice}">}%
1308 }{\HCode{</div>}\IgnoreIndent}
1309 \ConfigureEnv{multipleChoice}{}{}{}{}
1310 ⟨/htXimera⟩
```

2.11 Word choice

`\wordChoice` An in-line version of multipleChoice: uses enumitem package note, it is coded as a single line to avoid unwanted spaces in "given" mode.

```
1311 ⟨*classXimera⟩
1312 \newcommand{\wordChoice}[1]{%
1313 \let\choicetemp\choice% Assign a "choicetemp" command to duplicate choice.
1314 \ifwordchoicegiven% If wordchoice option is on, we need to juggle around some definitions.
1315 \let\choice\otherchoice%
1316 %\begin{multipleChoice@}% -unnecessary (REMOVE THIS LINE IF THE YEAR IS 2019 or Beyond)
1317 #1
1318 %\end{multipleChoice@}% -unnecessary (REMOVE THIS LINE IF THE YEAR IS 2019 or Beyond)
1319 \else% If it isn't the regular "choice" command should work.
1320 \let\choice\inlinechoice%
1321 \begin{multipleChoice@}%
1322 #1%
1323 \end{multipleChoice@}%
1324 \fi%
1325 \let\choice\choicetemp% Now that choicetmp has been manipulated to what we want, replace cho:
1326 }%
1327
1328
1329 ⟨/classXimera⟩
```

This is actually just word choice

```
1330 ⟨*htXimera⟩
1331 \renewenvironment{multipleChoice@}{\refstepcounter{problem}}{}%
1332 \ConfigureEnv{multipleChoice@}{\stepcounter{identification}\IgnorePar\HCode{<span class="word
1333 ⟨/htXimera⟩
```

2.12 Select all

`selectAll` A multiple-multiple choice question

```
1334 ⟨*classXimera⟩
1335 \newenvironment{selectAll}[1][]
1336 {\begin{trivlist}\item[\hskip \labelsep\small\bfseries \GetTranslation{Select All Correct Ans
1337    {\end{enumerate}\end{trivlist}}
1338 ⟨/classXimera⟩
```

In the future we need this to (optionally) be displayed in the problem, while the actual code lives in the solution. Here is how this could be implemented: Like the title/maketitle commands, the multiple-choice could be stored in `\themultiplechoice`, flip a boolean, and execute `\makemultiplechoice` at the `\end` of the problem. We should also make a command called `\showchoices` that will show choices in the handout.

On the web, `selectAll` is handled just like `multipleChoice`.

```
1339 ⟨∗htXimera⟩
1340 \renewenvironment{selectAll}{\refstepcounter{problem}}{}%
1341 \ConfigureEnv{selectAll}{\stepcounter{identification}\ifvmode \IgnorePar\fi \EndP\HCode{<div
1342 ⟨/htXimera⟩
```

2.12.1 Free response

freeResponse A freeform input box.

```
1343 ⟨∗classXimera⟩
1344 \newboolean{given} %% required for freeResponse
1345 \setboolean{given}{true} %% could be replaced by a key=value pair later if needed
1346
1347 \ifhandout
1348 \newenvironment{freeResponse}[1][false]%
1349 {%
1350 \def\givenatend{\boolean{#1}}
1351 \ifthenelse{\boolean{#1}}
1352 {% Begin then result
1353 \begin{trivlist}
1354 \item
1355 }% End then result
1356 {% Begin else result
1357 \setbox0\vbox\bgroup
1358 }% End else result
1359 % {}% Don't think this is doing anything? -- Jason
1360 }
1361 {%
1362 \ifthenelse{\givenatend}
1363 {% Begin then result
1364 \end{trivlist}
1365 }% End then result
1366 {% Begin else result
1367 \egroup
1368 }% End else result
1369 % {}% Don't think this is doing anything? -- Jason
1370 }
1371 \else
1372 \newenvironment{freeResponse}[1][false]%
1373 {% Environment Beginning Code
1374   \ifthenelse{\boolean{#1}}%% Could probably change this with just putting the (given) in the
1375     {% Begin then result
1376     \begin{trivlist}
1377     \item[\hskip \labelsep\bfseries \GetTranslation{Free Response (Given)}:\hspace{2ex}]
1378     }% End then result
1379 {% Begin else result
1380 \begin{trivlist}
1381 \item[\hskip \labelsep\bfseries \GetTranslation{Free Response}:\hspace{2ex}]
1382 }% End else result
1383 }
1384 {% Environment Ending Code
1385 \end{trivlist}
1386 }
1387 \fi
1388
1389 ⟨/classXimera⟩

1390 ⟨∗htXimera⟩
1391
1392 \renewenvironment{freeResponse}{\refstepcounter{problem}}{}%
1393 \ConfigureEnv{freeResponse}{\stepcounter{identification}\ifvmode \IgnorePar\fi \EndP\HCode{<
1394
1395 ⟨/htXimera⟩
```

2.12.2 Feedback

feedback An initially hidden environment that uncovers itself at an appropriate time. New Valida-
tor rewrite code added by Jason Nowell. Original code provided by Jim Fowler. Validator
is an environment designed to run a custom check on answers (usually) using javascript
code.

Define a placeholder command for validator and feedback.

```
1396 ⟨∗classXimera⟩
1397 \newcommand{\PH@Command}{}
```

Validator should take an argument and detokenize it and display it at the start of the
environment. The original Validator environment had everything framed in an mbox;
presumably to make the text look a bit nicer, although this seems redundant with `texttt`.
It shouldn't cause any harm so I have left it in for now.

```
1398 \newenvironment{validator}[1][]{
1399 \def\PH@Command{#1}% Use PH@Command to hold the content and be a target for "\expandafter" to
1400 \mbox{\texttt{\detokenize\expandafter{\PH@Command}}}% Now expand PH@Command once and then de
1401 }{}
```

First, if it's a handout, we want feedback to eat everything and then disappear entirely.
So we do this:

```
1402 \ifhandout%
1403 \newenvironment{feedback}
1404                 {%
1405   \setbox0\vbox\bgroup
1406        }
1407                 {%
1408   \egroup
1409        }
```

If this isn't a handout, then we want to display the Feedback by using a label, positioned
and formated as a `\item` in a trivlist. It is important that we also detokenize the content
of the optional argument, as it is likely to contain javascript or other code that latex
won't be able to make sense of.

```
1410 \else
1411 \newenvironment{feedback}[1][attempt]{
1412
1413 \edef\PH@Command{\GetTranslation{#1}}% Use PH@Command to hold the content and be a target fo
1414
1415 \begin{trivlist}% Begin the trivlist to use formating of the "Feedback" label.
1416 \item[\hskip \labelsep\small\slshape\bfseries \GetTranslation{Feedback}% Format the "Feedbac
1417 \ifonlineTF{% If the feedback is on a pdf, we don't need to detokenize - which messes with t
1418 (\texttt{\expandafter\detokenize\expandafter{\PH@Command}})}% Keep the online version the sa
1419 {(\expandafter\texttt{\PH@Command})}:% No need for detokenize in the pdf version
1420 \hspace{2ex}]\small\slshape% Insert some space before the actual feedback given.
1421 }{
1422 \end{trivlist}
1423 }
1424
1425 \fi
1426 ⟨/classXimera⟩
```

Feedback environments take an optional parameter (which describes when the feedback
is to be provided)

```
1427 ⟨∗htXimera⟩
1428 \def\feedback{\@ifnextchar[{\@feedbackcode}{\@feedbackattempt}}
1429 \def\@feedbackattempt{\@feedbackcode[attempt]}
1430 \def\@feedbackcode[#1]{\stepcounter{identification}%
1431 \ifvmode \IgnorePar\fi \EndP%
1432 \ifthenelse{\equal{#1}{attempt}}{\HCode{<div class="feedback" data-feedback="attempt" id="fe
1433 {\ifthenelse{\equal{#1}{correct}}{\HCode{<div class="feedback" data-feedback="correct" id="fe
1434 {\HCode{<div class="feedback" data-feedback="script" id="feedback\arabic{identification}" ti
1435 \def\endfeedback{\HCode{</div>}\IgnoreIndent}
1436 ⟨/htXimera⟩
```

2.12.3 Ungraded activities

ungraded The `ungraded` environment is used to record that certain parts of activities should not be worth points. For example, if you want to use a multipleChoice as a survey question, you can place it inside an `ungraded` environment. On the LaTeX side, the `ungraded` environment does nothing.

```
1437 ⟨*classXimera⟩
1438 \newenvironment{ungraded}{}{}
1439 ⟨/classXimera⟩
```

But on the html side, `ungraded` wraps the activities in a div in order to assign some weight to them for grading.

```
1440 ⟨*htXimera⟩
1441 \renewenvironment{ungraded}{%
1442 \ifvmode \IgnorePar\fi \EndP\HCode{<div class="ungraded">}\IgnoreIndent%
1443 }{
1444 \ifvmode \IgnorePar\fi \EndP\HCode{</div>}\IgnoreIndent%
1445 }
1446 ⟨/htXimera⟩
```

2.13 Support for the web

2.13.1 MathJax support

When using mathjax, dump all the `\newcommand`s to a `.jax` file.

First, create the `.jax` file. Redefine newcommand appropriately.

```
1447 ⟨*classXimera⟩
1448 %% Pre-202412: .jax file written in non-\HCode, and in a next run inserted by ximera.cfg in .
1449 %% Post-202501: .mjax file written only in \HCode, and in luaxake post-processing inserted in
1450 %%    ( used luaxake rather than sed ...)
1451 \newwrite\myfile
1452 \ifdefined\HCode
1453 \immediate\openout\myfile=\jobname.xmjax
1454
1455 %% From |only.dtx| we must also create |prompt| on the MathJax side.
1456 \immediate\write\myfile{\unexpanded{\newenvironment}{prompt}{}{}}
1457
1458 %% Write all newcommands to .xmjax file, that will be included in the .html via luaxake
1459 \let\@oldargdef\@argdef
1460 \long\def\@argdef#1[#2]#3{%
1461 \immediate\write\myfile{\unexpanded{\newcommand}{\unexpanded{#1}}[\unexpanded{#2}]{\unexpande
1462 \@oldargdef#1[#2]{#3}%
1463 }
1464
1465 %% Same for \DeclareMathOperator
1466 \let\@OldDeclareMathOperator\DeclareMathOperator
1467 \renewcommand{\DeclareMathOperator}[2]{\@OldDeclareMathOperator{#1}{#2}\immediate\write\myfil
1468
1469 \fi
1470
1471
1472 ⟨/classXimera⟩
```

Include the jax'ed newcommands (pre-202412 versions ....)

```
1473 ⟨*cfgXimera⟩
1474
1475 % 202501: removed sed-manipulation of .jax file; see luaxake now
1476
1477 \Configure{BVerbatimInput}{}{}{}{}
1478
1479 \Configure{verbatiminput}{}{}{}{}
1480
1481 % Instead of a nonbreaking space, use a standard space
1482 \makeatletter
```

```
1483 \def\FV@Space{\space}
1484 \makeatother
1485
1486 % Include the (problem-?) .ids in a text/javascript script right at the beginning of the body
1487 \Configure{BODY}{%
1488 \HCode{<body>\Hnewline}%
1489 \Tg<div class="preamble">%
1490 %% 202501: removed .jax inclusion  (see luaxake)
1491
1492 %% Include the .ids file
1493 \IfFileExists{\jobname.ids}{\HCode{<script type="text/javascript">\Hnewline}%
1494 \BVerbatimInput{\jobname.ids}%
1495 \HCode{</script>\Hnewline}%
1496 }{}
1497 \Tg</div>%
1498 }{%
1499 \ifvmode\IgnorePar\fi\EndP\HCode{</body>\Hnewline}%
1500 }
1501
1502 % 202501: removed 'prevent spaces as in  "\begin {align}": this is done in luaxake now
1503
1504 % This is a fix for the LAODE book, which uses matlabEquation as if it were an equation
1505 \ScriptEnv{matlabEquation}{\ifvmode \IgnorePar\fi \EndP\HCode{<script type="math/tex; mode=d:
1506
1507 ⟨/cfgXimera⟩
```

2.13.2 Semantic HTML

\textbf   Using \textbf emits a `<strong>` tag.

```
1508 ⟨∗cfgXimera⟩
1509 \Configure{textbf}{\ifvmode\ShowPar\fi\HCode{<strong>}}{\HCode{</strong>}}
1510 ⟨/cfgXimera⟩
```

\textit   Using \textit or similar emits an `<em>` tag.

```
1511 ⟨∗cfgXimera⟩
1512 \Configure{textit}{\ifvmode\ShowPar\fi\HCode{<em>}}{\HCode{</em>}}
1513 \Configure{emph}{\ifvmode\ShowPar\fi\HCode{<em>}}{\HCode{</em>}}
1514 ⟨/cfgXimera⟩
```

\texttt   Using \texttt emits a `<code>` tag.

```
1515 ⟨∗cfgXimera⟩
1516 \Configure{texttt}{\ifvmode\ShowPar\fi\HCode{<code>}}{\HCode{</code>}}
1517 ⟨/cfgXimera⟩
```

2.14   Tools

2.14.1 Suppress

suppress   The suppress environment is a good way to suppress output without commenting it. This way we can avoid many of the places we use environ package and this should also avoid most of the verbatim conflicts. This is code adapted from `syntonly.sty`.

```
1518 ⟨∗classXimera⟩
1519 \font\dummyft@=dummy \relax
1520 \def\suppress{%
1521   \begingroup\par
1522   \parskip\z@
1523   \offinterlineskip
1524   \baselineskip=\z@skip
1525   \lineskip=\z@skip
1526   \lineskiplimit=\maxdimen
1527   \dummyft@
1528   \count@\sixt@@n
1529   \loop\ifnum\count@ >\z@
1530     \advance\count@\m@ne
```

```
1531        \textfont\count@\dummyft@
1532        \scriptfont\count@\dummyft@
1533        \scriptscriptfont\count@\dummyft@
1534     \repeat
1535     \let\selectfont\relax
1536     \let\mathversion\@gobble
1537     \let\getanddefine@fonts\@gobbletwo
1538     \tracinglostchars\z@
1539     \frenchspacing
1540     \hbadness\@M}
1541 \def\endsuppress{\par\endgroup}
1542 ⟨/classXimera⟩
```

2.14.2   The End

It seems that some of the files need to conclude with something or another.

```
1543 ⟨∗htXimera⟩
1544 \Hinput{ximera}
1545 ⟨/htXimera⟩

1546 ⟨∗htXourse⟩
1547 \Hinput{xourse}
1548 ⟨/htXourse⟩

1549 ⟨∗cfgXimera⟩
1550 \begin{document}
1551 \EndPreamble
1552 ⟨/cfgXimera⟩
```

3   xourse.cls

```
1553 ⟨∗classXourse⟩
```

notoc   The default behavior of the class is to provide a table of contents listing all activities in the course. This option will supress this table of contents.

```
1554 \newif\ifnotoc
1555 \notocfalse
1556 \DeclareOption{notoc}{\notoctrue}
```

nonewpage   The default behavior of the class is to start each activity on a new page. This option will start activities without making a new page.

```
1557 \newif\ifnonewpage
1558 \nonewpagefalse
1559 \DeclareOption{nonewpage}{\nonewpagetrue}

1560 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{ximera}}
1561 \ProcessOptions\relax
1562 \LoadClass{ximera}
1563 %      \begin{macrocode}
1564 ⟨/classXourse⟩
```

3.1   Activities

The core of the xourse system. It works by redefining the document environment, thus making the \begin and \end{document} of the subfile 'transparent' to the inclusion. The redefinition of \documentclass is analogous, just having a required and an optional arguments which mean nothing to \subfile.

```
1565 ⟨∗classXourse⟩
1566 \newcommand{\skip@preamble}{%
1567     \let\document\relax\let\enddocument\relax%
1568     \newenvironment{document}{\let\input\otherinput}{}%
1569     \renewcommand{\documentclass}[2][subfiles]{}}
```

Note that the new command \subfile calls for \skip@preamble *within a group*. The changes to document and \documentclass are undone after the inclusion of the subfile.

Numbering starts a page too soon without this:

```
1570 \let\otherinput\input
```

Store usual \maketitle as \othermaketitle

```
1571 \let\othermaketitle\maketitle
```

\maketitle   In a xourse file, \maketitle is redefined to give course packet title page and toc.

```
1572 \renewcommand{\maketitle}{ %
1573 \pagestyle{empty}
1574 \begin{center}
1575 ~\\ %puts space at top of page to move title down.
1576 \vskip .25\textheight
1577 \hrulefill\\
1578 \vskip 1em
1579 \bfseries{\Huge \@title} \\
1580 \hrulefill\\
1581 \vskip 3em
1582 {\Large \@author}
1583 \vskip 2em
1584 {\large \@date}
1585 \end{center}
1586 \clearpage
```

When notoc option is used, we do not include a table of contents. Otherwise we include a table of contents in every course packet.

```
1587 \ifnotoc
1588 \else
1589   \tableofcontents\clearpage
1590   \clearpage
1591 \fi
```

Switch to main pagestyle, just like a document with documentclass ximera.

```
1592 \pagestyle{main}
```

Renew maketitle to usual definition.

```
1593 \let\maketitle\othermaketitle
```

And we finish with our redefinition of \maketitle.

```
1594 }
1595 \relax
1596 ⟨/classXourse⟩
```

3.1.1   Regular activities

\activity   Documents included with \activity will be included in the body of the xourse document. Any \input commands within included ximera documents will be ignored. Any \usepackage commands within included ximera documents will cause an error. Overlapping \newcommand definitions within multiple ximera documents included simultaneously will cause an error. The \activity command inputs the file name provided without \documentclass, without \begin{document}/\end{document} and without any inputs in the preamble of the included file.

```
1597 ⟨*classXourse⟩
1598 \ifnonewpage
1599 \newcommand{\activity}[2][]{%
1600 \setkeys{activity}{#1}
1601   \renewcommand{\input}[1]{}
1602   \begingroup\skip@preamble\otherinput{#2}\endgroup\par\vspace{\topsep}
1603   \let\input\otherinput}
1604 \else
1605 \newcommand{\activity}[2][]{%
1606 \setkeys{activity}{#1}
1607   \renewcommand{\input}[1]{}
1608   \begingroup\skip@preamble\otherinput{#2}\endgroup\clearpage
```

```
1609    \let\input\otherinput}
1610 \fi
1611 \relax
1612 ⟨/classXourse⟩

1613 ⟨*htXourse⟩
1614 \renewcommand\activity[2][]{%
1615 \ifvmode \IgnorePar\fi \EndP\HCode{<a class="activity card \activitystyle" href="#2" data-op
1616 }
1617 ⟨/htXourse⟩
```

When running xake, we can just ignore activities

```
1618 ⟨*classXourse⟩
1619 \ifxake
1620 \renewcommand\activity[2][]{}
1621 \fi
1622 ⟨/classXourse⟩
```

3.1.2   Practice activities

\practice   Like \activity but not expecting a title.

```
1623 ⟨*classXourse⟩
1624 \ifhandout
1625 \newcommand{\practice}[2][]{
1626 \setkeys{practice}{#1}%!!!!!
1627    \renewcommand{\input}[1]{}
1628    \begingroup\skip@preamble\otherinput{#2}\endgroup
1629    \let\input\otherinput}
1630 \else
1631 \newcommand{\practice}[2][]{\texttt{\detokenize{#2}}%% gives file name for practice
1632 \setkeys{practice}{#1}%!!!!!
1633    \renewcommand{\input}[1]{}
1634    \begingroup\skip@preamble\otherinput{#2}\endgroup
1635    \let\input\otherinput}
1636 \fi
1637 \relax
1638 ⟨/classXourse⟩
```

The practice environment does nothing, but will eventually produce exercises at the
end of an activity

```
1639 ⟨*classXourse⟩
1640 \ifxake
1641 \renewcommand\practice[2][]{}
1642 \fi
1643 ⟨/classXourse⟩
```

I suppose it is reasonable for practice cards to NOT have an activitystyle, since the
activitystyle is basically PRACTICE.

```
1644 ⟨*htXourse⟩
1645 \renewcommand\practice[2][]{%
1646    \ifvmode\IgnorePar\fi\EndP%
1647    \HCode{<a class="activity card practice" href="#2" data-options="#1">#2</a>}%
1648    \IgnoreIndent%
1649 }
1650 ⟨/htXourse⟩
```

3.2   Sectioning

Makes the table of contents look a bit better. This can be redefined in the preamble if
\section   you do not like the appearance. The name of a section inside an activity.

```
1651 ⟨*classXourse⟩
1652 \renewcommand*\l@section{\@dottedtocline{1}{1.5em}{4.2em}}
1653 ⟨/classXourse⟩
```

\subsection The name of a subsection inside an activity.

```
1654 ⟨*classXourse⟩
1655 \renewcommand*\l@subsection{\@dottedtocline{2}{3.8em}{4.2em}}
1656 ⟨/classXourse⟩
```

\part Xourse files can have parts. The name of a large part of a xourse.

```
1657 ⟨*htXourse⟩
1658 \newcounter{ximera@part}
1659 \setcounter{ximera@part}{0}
1660 \renewcommand\part[1]{%
1661 \stepcounter{ximera@part}%
1662 \ifvmode \IgnorePar\fi \EndP%
1663 %\HCode{<h1 id="part\arabic{ximera@part}" class="card part">}#1\HCode{</h1>}% makes cards dis
1664 \HCode{<h1 id="part\arabic{ximera@part}" class="card part">#1</h1>}%
1665 \IgnoreIndent%
1666 }
1667 ⟨/htXourse⟩
```

\paragraph Paragraph commands emit spans. A small heading.

```
1668 ⟨*cfgXimera⟩
1669 \renewcommand{\paragraph}[1]{%
1670   \HCode{<span class="paragraphHead">}%
1671   #1%
1672   \HCode{</span>}\par\IgnorePar}
1673 ⟨/cfgXimera⟩
```

\subparagraph An even smaller heading.

```
1674 ⟨*cfgXimera⟩
1675 \renewcommand{\subparagraph}[1]{%
1676   \HCode{<span class="subparagraphHead">}%
1677   #1%
1678   \HCode{</span>}\par\IgnorePar}
1679 ⟨/cfgXimera⟩
```

3.3 Grading by points

graded The `graded` environment does nothing in latex, but in html, it wraps the activities in a div in order to assign some weight to them for grading.

```
1680 ⟨*classXourse⟩
1681 \newenvironment{graded}[1]{}{}
1682 ⟨/classXourse⟩
```

So indeed this environment in html wraps the activities in a div in order to assign some number of points to them.

```
1683 ⟨*htXourse⟩
1684 \renewenvironment{graded}[1]{%
1685 \ifvmode \IgnorePar\fi \EndP\HCode{<div class="graded" data-weight="#1">}\IgnoreIndent%
1686 }{
1687 \ifvmode \IgnorePar\fi \EndP\HCode{</div>}\IgnoreIndent%
1688 }
1689 ⟨/htXourse⟩
```

3.4 Logos

\logo A logo for the xourse.

```
1690 ⟨*classXourse⟩
1691 \newcommand*{\logo}[1]{%
1692   \ifx\@onlypreamble\@notprerr
1693     \ClassError{xourse}{logo can only be used in the preamble}
1694       {Move your logo command to the preamble}
1695   \else %
1696     \IfFileExists{#1}%
1697       {\gdef\xourse@logo{#1}}%
1698       {\ClassError{xourse}{logo file does not exist}
```

```
1699            {To use logo, make sure that the referenced image file exists}}%
1700     \fi%
1701 }
1702
1703 ⟨/classXourse⟩
```

The xourse logo is an `og:image` in the opengraph taxonomy.

```
1704 ⟨∗htXourse⟩
1705 \Configure{@HEAD}{%
1706     \HCode{<meta name="og:image" content="}%
1707 \ifdefined\xourse@logo%
1708     \xourse@logo%
1709 \fi%
1710 \HCode{" />\Hnewline}}%
1711 ⟨/htXourse⟩
```