PreTeXt Documents
For an article
<?xml version="1.0" encoding="UTF-8"?>
<pretext>
<article>
<title>Hello World!</title>
<p>This is a PreTeXt document.</p>
</article>
</pretext>
or a book
<?xml version="1.0" encoding="UTF-8"?>
<pretext>
<title>Hello World!</title>
</book>
</pretext>
Structure of a PreTeXt Document
PreTeXt documents are structured and may contain divisions such as <chapter> (for books), <section>, <subsection>, and <p> (paragraphs).

<section>
<title>Mandatory</title>
<p>First paragraph. </p>
</section>

<p>Second paragraph. </p>
</section>

Divisions may contain other divisions. Divisions require a <title>.

<section>
<title>Mandatory</title>
<p>Introduction. (Optional.)</p>
</section>

<subsection>
<title>Mandatory</title>
<p>Subsection content.</p>
</subsection>

Images, Figures, sidebyside
Images can be included using the <image> tag with the @source attribute. The @width attribute can be used to control the size of the image. Images can be wrapped inside a <figure>. A <figure> must have a <caption>, and the figure will be numbered. The <sidebyside> tag provides flexible options for placing several images together or combining figures with subcaptions. PreTeXt provides support for authoring with graphics languages such as Asymptote, TikZ, PGF, PSTricks, and xy-pic in addition to using Sage code to describe a plot or image. In most cases output can be obtained as smoothly-scalable SVG images, in addition to other formats like PDF or PNG. For accessibility, every <image> should either have a <description> child.

<figure xml:id="figure-spring-mass" width="60\%" xref="spring-mass">
<description>A spring-mass system</description>
</figure>

Lists
The structure of ordered lists (numbered), unordered lists (bullets) and description lists (defined terms) is given by the <ol>, <ul>, <dl> tags (respectively). List items are delimited with the <li> tag.

Theorem-Like Elements
The tags <theorem>, <algorithm>, <claim>, <corollary>, <fact>, <identity>, <lemma>, and <proposition> have the same structure in PreTeXt:

<theorem>
<title>Optional</title>
<p>Here's the statement of the theorem.</p>
</theorem>

Example-Like Elements
The tags <example>, <problem>, and <question> have the same structure in PreTeXt:

Example-

Axiom-Like Elements
The tags `<assumption>`, `<axiom>`, `<conjecture>`, `<heuristic>`, `<hypothesis>`, and `<principle>` have the same structure in PreTeXt.

```xml
<axiom>
  <title>Optional</title>
  <creator>Peano</creator>
  <statement>
    <p>Here's the statement of the axiom.</p>
  </statement>
</axiom>
```

**Remark-Like Elements**
The tags `<convention>`, `<insight>`, `<note>`, `<observation>`, `<remark>`, and `<warning>` have the same structure in PreTeXt.

```xml
<remark>
  <title>A little remark</title>
  <p>This is a remark.</p>
</remark>
```

**Project-Like Elements**
The tags `<activity>`, `<exploration>`, `<investigation>`, and `<project>` have the same structure in PreTeXt.

```xml
<project>
  <title>A structured project</title>
  <introduction>
    <p>Here is the introduction.</p>
  </introduction>
  <task>
    <statement>
      <p>The first step to do.</p>
    </statement>
  </task>
  <task>
    <statement>
      <p>The second step to do.</p>
    </statement>
  </task>
  <conclusion>
    <p>A little wrap up.</p>
  </conclusion>
</project>
```

**Exercises**
An `<exercise>` in the middle of a division, intermixed between theorems and paragraphs and figures. In this case, it is labeled as a “Checkpoint.” You can put several `<exercise>`s as part of an `<exercises>` element within a division, which is the typical way for creating a collection of exercises together at the end of a division such as a chapter or section. An `<exercisegroup>` can group together a collection of exercises that have a set of common instructions.

A specialized division, `<reading-questions>`, can be used to house `<exercise>`s designed to test or guide a reader’s comprehension of the material in that division. It is possible to embed WeBWorK exercises into a PreTeXt document.

An `<exercise>` has the following structure.

```xml
<exercise>
  <statement>
    <p>The `<statement>` is mandatory.</p>
  </statement>
  <optional-signal/>
  <hint>
    <p>Optional.</p>
  </hint>
  <answer>
    <p>Optional.</p>
  </answer>
  <solution>
    <p>Optional.</p>
  </solution>
</exercise>
```

An element we generically call a “signal” is an important component of an exercise if you want to add something that will be interactive in HTML and Runestone. Signals include `<choices>` for multiple choice questions, `<blocks>` for Parsons (mixed up blocks) problems, `<match>` for matching, `<areas>` for clickable area, `<response>` for short answer, and `<setup>` for fill-in-the-blank. A True/False question simply uses a `<correct>` attribute on `<statement>` as a signal. The signal element usually has further structure, see pretextbook.org for examples and source.

**Worksheets**
A `<worksheet>` is a specialized division that can be a child of most divisions and can contain most PreTeXt tags.

**Tables**
Similar to LaTeX PreTeXt provides a `<table>` tag and a `<tabular>` tag. The `<tabular>` tag is used for producing the array of data, while the `<table>` tag provides the number and title.

**SageMath Content**
A SageMath cell can be included in a PreTeXt document.

```xml
<sage>
  <input>
    2+2
  </input>
  <output>
    4
  </output>
</sage>
```

SageMath can be used to created an image in a PreTeXt document.

```xml
<figure xml:id="fig-sage-cubic" width="50%">
  <caption>A cubic plotted by SageMath on [-3,2]</caption>
  <sageplot>
    f(x) = (x-1)*(x+1)*(x-2)
    plot(f, (x, -3, 2), color='blue', thickness=3)
  </sageplot>
</figure>
```