Towards accessible complete plain text to general public reader

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Introduction

• Enable anybody to communicate with everybody
• From plain text to formatted and accessible document
• Target audience:
  ➢ visually impaired
  ➢ and also: sighted people;
• Two objectives:
  ➢ to create any type of document easily;
  ➢ to make it accessible and intelligible for all audiences.
Presentation overview

Slides 4-5 Definition of Foundations
Slides 6-8 Designing a document
Slides 9-12 Structuring text, tables and figures
Slide 13-14 Building tables & Drawing diagrams
Slide 15 Conclusion
What is accessibility?

Four dimensions for accessibility:

- Readability
- Time spending
- Cognitive load
- Understanding
How to improve existing solutions?

- Enhancement of the efficiency of screen readers for tables, 2D objects (graphics)
- Initial textual document facilitated by creation of a lightweight tag syntax
  - Inspired of the existing
  - Audible through vocalisation
- Final document reading is facilitated by inserting additional tags and attributes proposed by HTML and WAI-ARIA.
Latitude

Light and Accessible Text Including Tags and Using Universal Design

Our project:

• Focus on the substance,
• Let the form to the software.
• Do not increase the number of constraints proposed by the WCAG
• Decrease the quantity of rules that an editor must have in mind.
Text document creation process

Raw text → parse → Latitude Factory (LttdFty) → create → HTML document (finalDoc.html)

Diagram Factory (DiagFty) → call → generate → Document description file (mainDesc.txt)

Diagram Factory (DiagFty) → draw → SVG file (fig.svg)

Diagram Factory (DiagFty) → generate → Figure description file (figDesc.txt)
Additional Descriptions

• Factories create a description document and indicate some other informations

• The description file therefore helps blind people who do not have a global perception of the document, but also students who want to benefit from an indicative feedback.

• According to the target audience, blinds and students, the description texts are very useful. This is why we would like to draw your attention to these complementary documents. They contain
  ➢ statistical elements (size, complexity),
  ➢ warnings such as typographical elements (paragraphs or sentences that are too long)
  ➢ suggestions for improvement.
Structuring text, tables and figures

Text composition
- Plain text
- Tags inspired from Markdown et al.
Sections

• Section is
  ➢ A title
  ➢ Begin with paragraphs
  ➢ Contain subsections

• Special tag to detect the title
  ===== level 1, main title
  ==== level 2, direct subsection
Structure Description 1/2

• For texts or tables, it will give indications such as size and reading complexity (Flesch score),
• Point out titles, items, sentences or paragraphs that are too long.

<table>
<thead>
<tr>
<th>Flesch score</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>100–80</td>
<td>Easy to read, children</td>
</tr>
<tr>
<td>80–60</td>
<td>Plain English, newspaper.</td>
</tr>
<tr>
<td>60–30</td>
<td>Difficult to read, graduates.</td>
</tr>
<tr>
<td>30–0</td>
<td>Very difficult to read, academic style</td>
</tr>
</tbody>
</table>
Structure Description 2/2

• Each section is composed of a title, paragraphs and optionally, subsections.
  ➢ Automatical study of the balance of these sections inside the document
  ➢ Suggestion, if necessary, to add sections and subdivisions
• Guidelines for blind and novice writers
  ➢ Perception of a good distribution of sections is geometric.
  ➢ Calculate the number of sections and subsections desired
  ➢ Indicate the imbalances found among sections.
## Building tables

Code to create tables

```
<table>
<thead>
<tr>
<th>Country</th>
<th>Main Cities</th>
<th>Residents (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>Algiers</td>
<td>34</td>
</tr>
<tr>
<td>Australia</td>
<td>Canberra</td>
<td>Sydney</td>
</tr>
<tr>
<td>Belgium</td>
<td>Brussels</td>
<td>12</td>
</tr>
<tr>
<td>Brazil</td>
<td>Brasilia</td>
<td>Sao Paulo</td>
</tr>
</tbody>
</table>
```

___table \textit{caption of the table}

Country|Main Cities|Residents
|---|---|---
|Capital|Metropole|(millions)

Algeria|Algiers|34
Australia|Canberra|Sydney|42
Belgium
Brazil|Brasilia|Sao Paulo|110

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Drawing diagrams

__classdiag caption of the figure

Section
*abstract Individual
 *Paragraph
 *Table
 *Scheme
Graphics

Section 1 <<>>------ * Individual
Scheme 1 <>------ 1 Graphics
__end
Conclusion

• The proposed approach may be attractive for other audiences: students learning to design inclusive text with graphics, web designers who must design accessible sites, etc.

• Moreover, it gives the opportunity to discover new ways to data and knowledge acquisition, and new ways for learning (inclusive) strategies.
Thank you for your attention

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