Accesible web design

USERS

About 20% of world population has any disability.

Each disability needs an adaptation.

Adaptations helps all the users.

Most accessibility bugs are due to lack of developer knowledge

Web Content Accessibility Guidelines (WCAG) are documents that explain how to make Web content accessible to people with disabilities.

POUR

1. Perceptible: Information and interface components must be presented in such a way that they can be perceived by users.

2. Operable: Navigation and user interface components must be operable.

3. Understandable: The information and operation of the user interface must be understandable.

4. Robust: Content must be robust enough to be interpreted by a wide variety of user agents, including assistive technologies.

DIFFERENT PEOPLE

- Person with Disability (DISCAPACIDAD)
- Person with motor disability (DISCAPACIDAD MOTRIZ)
- hearing impaired person (DISCAPACIDAD AUDITIVA)
- visually impaired person (DISCAPACIDAD VISUAL)
- Person with intellectual disability (DISCAPACIDAD INTELECTUAL)
- Person with psychosocial disability (DISCAPACIDAD PSICOSOCIAL)

ACCESIBLE WEB ARE UGLY

MOST OF THE PRINCIPLES OF WEB ACCESSIBILITY DO NOT AFFECT THE FINAL FINISH (LOOK AND FEEL) OF A WEBSITE.

PEOPLE WITH DISABILITIES DO NOT THEY USE THE WEB

RATHER THE OPPOSITE, SINCE THE NEW TECHNOLOGIES AND THE INTERNET HAS ALLOWED A LARGE NUMBER OF PEOPLE WITH DISABILITIES CARRY AN AUTONOMOUS AND INDEPENDENT LIFE.

WEB PAGES WITH ONLY TEXT ARE ACCESSIBLE

WEB PAGES THAT ONLY CONTAIN TEXT CAN BE DIFFICULT TO UNDERSTAND BY PEOPLE WITH

COGNITIVE DISABILITY OR DIFFICULTIES WITH LANGUAGE LIKE DEAF PEOPLE

ACCESSIBILITY IS EXPENSIVE AND COSTLY

OBVIOUSLY, THE LEARNING PROCESS AND THE SUBSEQUENT ADAPTATION TO THE WEBSITES ALREADY EXISTING ONES IMPLY A COST, BUT JUST AS LEARN A NEW TECHNOLOGY (FOR EXAMPLE, ANGULAR) AND ADAPT WEBSITES TO NEW TECHNOLOGY.

ACCESSIBILITY IS ONLY FOR THE BLIND PEOPLE

THERE ARE USERS WITH DIFFERENT TYPES OF DISABILITIES THAT MAY EXPERIENCE DIFFERENT

PROBLEMS OF ACCESS AND USE OF THE CONTENT OF THE WEBSITES.

ACCESSIBILITY IS ONLY FOR THE PEOPLE WITH DISABILITIES

ALTHOUGH PEOPLE WITH DISABILITIES MAY BE THE USERS WHO BENEFIT MOST FROM THE APPLY WEB ACCESSIBILITY, YOU ACTUALLY BENEFITS EVERYONE, AS IT ALSO HELPS ANY USER WHO IS IN SPECIAL CIRCUMSTANCES SUCH AS ENVIRONMENTS WITH LOW LIGHTING, NOISY ENVIRONMENTS, ACCESS TO INTERNET WITH CONNECTIONS AND EQUIPMENT WITH CAPACITIES LIMITED ETC
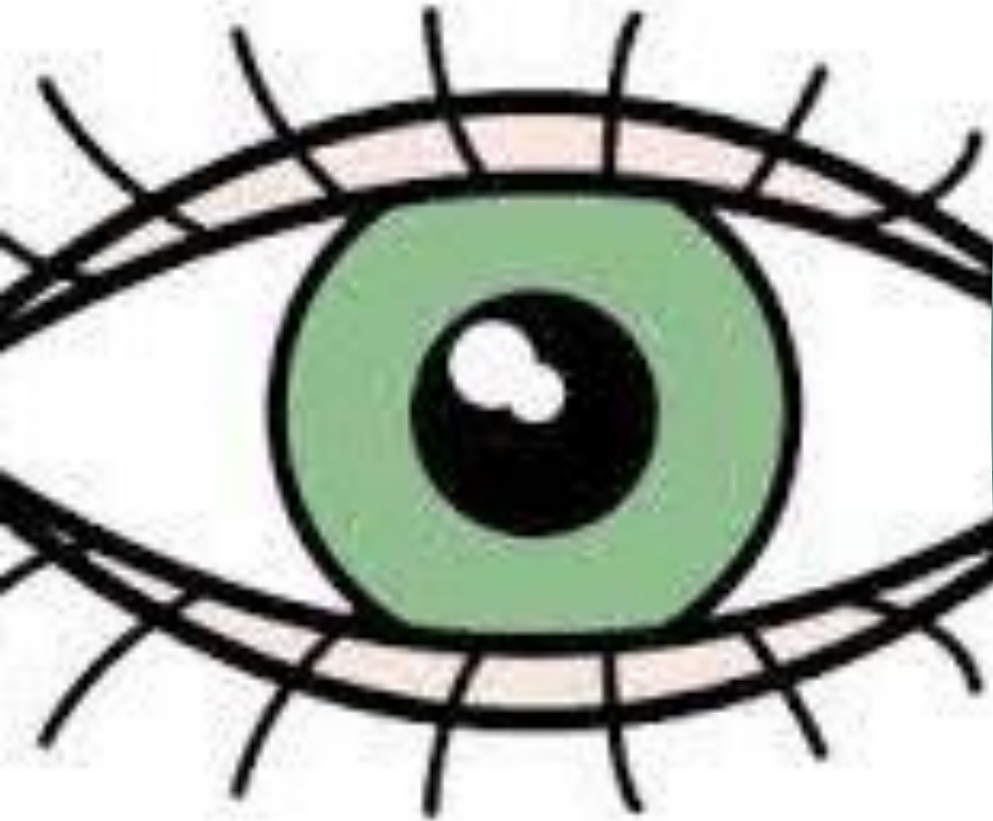
It is a citizen's right to participate and non-discrimination on the basis of disability.

ISSUES OF DISABILITIES

VISUAL

- Images or media without text alternative
- Very small text size
- Information based solely on color
- Low contrast color combinations

PHYSICAL

- User interfaces that can only be used with mouse

- Links and form controls very little ones

- User interfaces that require control very precise

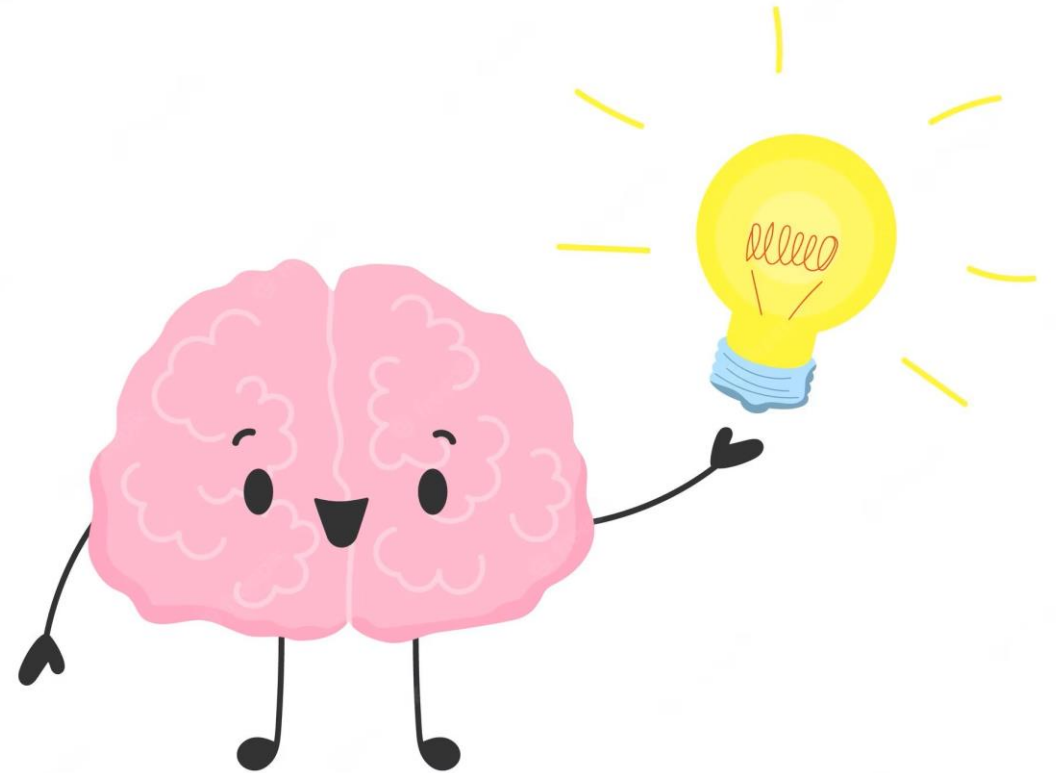- User interfaces with response times by the user very small

AUDITORY

- Absence of audio transcripts
- Absence of subtitles in videos
- Long and complex texts
- Absence of images that complement the
- text information

COGNITIVE AND NEUROLOGICAL

- ▶ Long and complex texts
- ▶ Absence of images that complement the text information
- ▶ Absence of a website map
- ▶ Absence of descriptions and help for interpret form controls
- ▶ Inconsistencies between different pages of a same website

RELATED TO AGING

- Usually problems related to:
  - visual impairment,
  - hearing impairment and
  - physical disability.

HOW DO USERS NAVIGATE

KEY PRINCIPLES

PROVIDE AN ALTERNATIVE TEXT SUITABLE

- Alternative text provides an alternative text to non-text content in the webpages.

- It is especially useful for people who are blind and rely on a screen reader to access the content of a website

PROVIDES HEADERS FOR THE DATA TABLES

- Tables used to organize data tabulated should have proper headings (the <th> element).

- The data cells must be associated with their proper headers, which makes it easier easy for screen reader users navigate and understand data tables

GUARANTEES THAT USERS CAN COMPLETE AND SUBMIT ALL FORMS

- Make sure that each element of a form has an associated <label> tag.

- Also, make sure you can send the form and recover from any errors.

MAKE SURE THE LINKS HAVE MEANING OUT OF CONTEXT

- Each link should make sense if the text of the link is read in isolation.
- Screen reader users can choose for reading only the links of a web page.
- Certain phrases, such as "click here" and "more", they must be avoided.
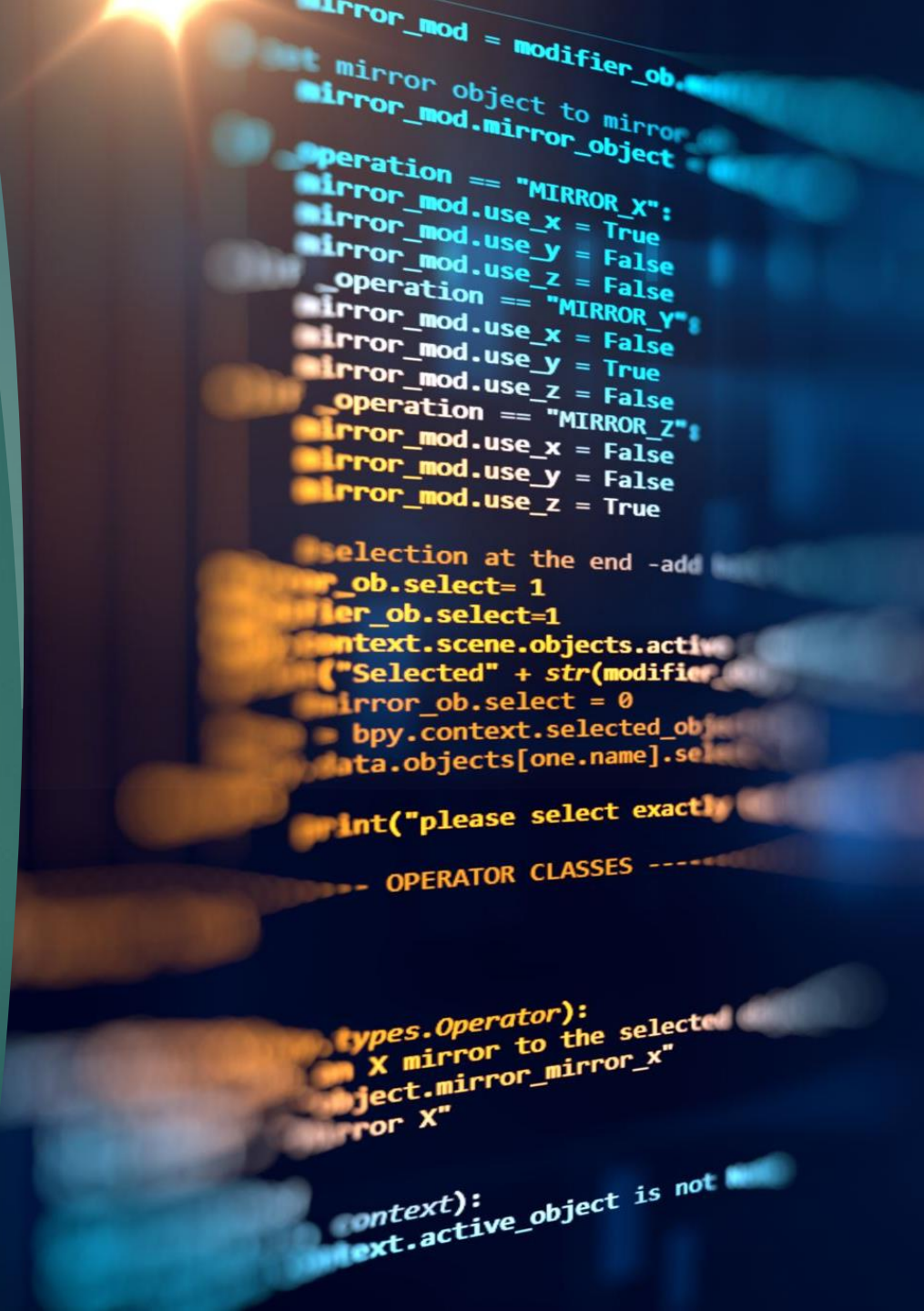
SUBTITLE AND/OR PROVIDE TRANSCRIPTS

- Videos must have subtitles and audio transcription.

- This is especially useful for people with hearing impairment, but not only for a them, because anyone can be interested have a video's subtitles or transcript of an audio, such as to be able to translate it into another language

GUARANTEES THE ACCESSIBILITY OF THE NON-HTML CONTENT

- PDF documents and other content that are not HTML should be as accessible as possible.

- If you can't make it accessible, consider using of HTML instead, or at least offers an accessible alternative

ALLOWS USERS TO SKIP THE REPETITIVE ELEMENTS

▶ Provide a method (for example a link "Skip to content" at the top of the page) that allows skipping navigation or other elements that are repeated on each page.

▶ It is usually annoying when browsing with a screen reader that every time you reload a page repeat again the header which is usually identical.

DON'T RELY SOLELY ON COLOR TO CONVEY THE MEANING

The use of color can enhance comprehension, but do not use only color to convey information.

That information may not be available to a person who is color blind and will not be available to users of readers of screen.

MAKE SURE THE CONTENT IS CLEARLY WRITTEN AND IS EASY TO READ

WRITE CLEARLY, USE FONTS OBVIOUS, AND USES THE HEADINGS AND READY PROPERLY.

DESIGN ACCORDING TO STANDARDS

Valid HTML and accessible pages are more robust and provide better positioning in search engines.

Cascading Style Sheets (CSS) allow you to separate the presentation content.

```
<p>
 Teléfono de contacto:
 <img src="./img/telefono.gif"
   alt="Teléfono de contacto" />
</p>
```

```
<a href="anterior.html">
 <img src="./img/flecha-izq.gif"
   alt="Flecha roja izquierda" ></a>
<a href="indice.html">Índice</a>
<a href="siguiente.html">
 <img src="./img/flecha-der.gif"
   alt="Flecha roja derecha" ></a>
```

```
<a href="unete.html">
 <img src="./img/logo.png"
   alt="Únete" />Únete</a>
```

```html
<p>
 Teléfono de contacto:
 <img src="./img/telefono.gif"
   alt="999123456" />
</p>
```

```html
<a href="anterior.html">
 <img src="./img/flecha-izq.gif"
   alt="Anterior" ></a>
<a href="indice.html">Índice</a>
<a href="siguiente.html">
 <img src="./img/flecha-der.gif"
   alt="Siguiente" ></a>
```

```html
<a href="unete.html">
 <img src="./img/logo.png"
   alt="" />Únete</a>
```
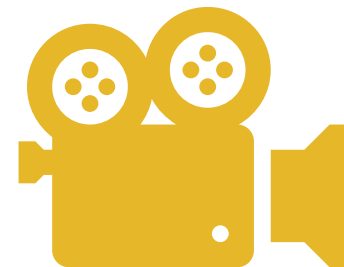
MULTIMEDIA

MULTIMEDIA ELEMENTS CAN CAUSE ACCESSIBILITY PROBLEMS, NOT ONLY TO THE PEOPLE WITH SOME KIND OF DISABILITY, BUT THE WHOLE WORLD IN GENERAL, WELL, ALTHOUGH EVERY TIME LESS, IN MANY CASES, REQUIRE THE INSTALLATION OF PLUGIN.

TRANSCRIPT AND SUBTITLES

You must provide a transcript of the dialogues and a description of the sounds.

In the case of videos, you also have to provide a description of the video itself (from image)

LINKS

OUT OF CONTEXT

- Some browsers and some programs help allow you to display the list of links of a Web page.

- For the link to make sense in that list of links, the link text has to have meaning out of context

```
<p>Estabamos desayunando cuando de repente sucedió.
<a href="noticia-hija-mayor.html">Más información.</a></p>
```

```
<p>Estabamos desayunando cuando de repente sucedió.
<a href="noticia-hija-mayor.html">Más información
<span>sobre la noticia titulada
"A mi hija mayor se le ha caído su primer diente"</span>.</a></p>
```

Try to link in the same language as the page, and
if you have to, and it's not obvious, indicate the language of the link in parentheses.

ORGANIZATION OF THE PAGES

STRUCTURAL ELEMENTS

The web pages have to be correctly structured.

For this, you have to use the tags of HTML that define the structure of a page, such as: <title>, <h1>, <h2>, ..., <ul>, <ol>, <p>, <blockquote>

TITLE

- Every web page should have a descriptive title. but at the same time brief defined with the label <title> that summarizes the content or function of the page.

- It is convenient to include the name of the website to define the page context.

- The page title is the first thing that visitors read. screen readers.

- Since it reads on all pages, it should be short and should not be the same on all pages.

HEADERS

- The content of the pages must be structure with header tags <h1>, <h2>, ...

- Most screen readers and some browsers allow the user to scroll

- within a web page "jumping" from a header to another header, allows it to reach faster way to information what is wanted

- Use a single <h1> header for the main title of the web page. Use different <h2> headers to each main section of the page.

- Use the rest of the headers (<h3> ... <6>) to add more detail in the page structure

- Be consistent in the use of headings: for example, don't go from <h2> to <h4> without using <h3>.

LAYOUT

- Many web page developers use the <div> and <span> tags to define

- section headers and structure content, however, these <div> and <span> tags do not provide semantic content, so its use should be avoided.

- On a web page you should never use the tables for layout, since they represent a serious accessibility problem.
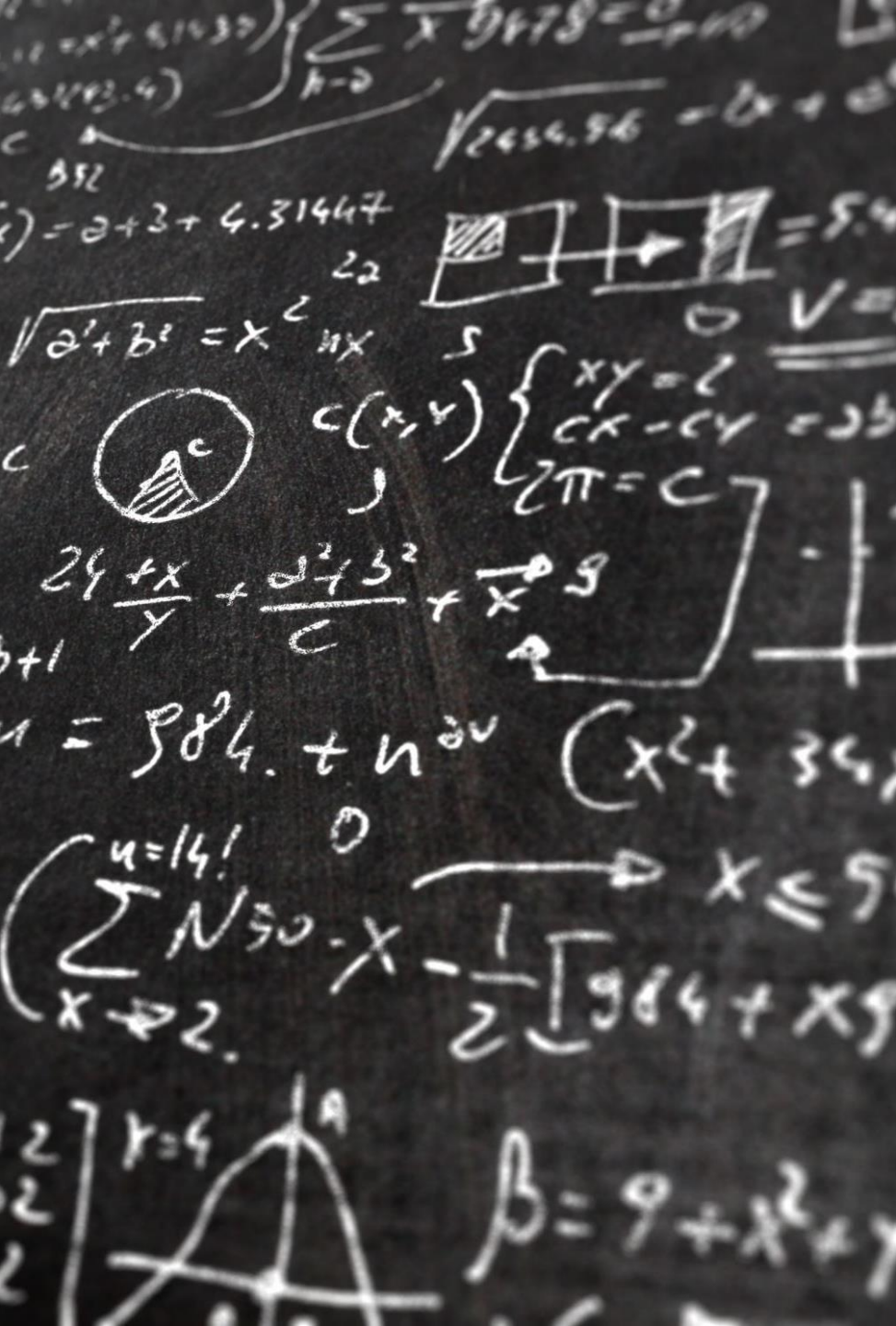
FIGURES AND DIAGRAMS

LONGDESC

▶ When images are used on a website, the common practice is to give them alternative text using the alt attribute, or leave said attribute empty attribute in case the function of the image is merely decorative.

▶ But we can find ourselves with the case of having an image to which a text must be associated alternative, but said text is excessively long, for those occasions there is the attribute longdesc.

▶ The longdesc attribute must always be a URL leading to a description of the image, on the same or on another page.

```html
<img src="./img/disenio-centrado-usuario.png"
 alt="Diagrama de Diseño Centrado en el Usuario"
 longdesc="#descripcion1" >
<span id="descripcion1">El Diseño Centrado en el usuario tiene varias fases: planificación, diseño,
```

SCRIPTS

LITTLE ACCESSIBLE

► Some of the browsers that use the disabled people are unable to interpret JavaScript code or some multimedia elements such as applets or objects that require a plugin.

► As a general rule, Dynamic HTML does not will work with a non-visual browser and will not be accessible.

► The solution is to make a web page work correctly without having to run the javascript code

LAYERS

HTML the Skeleton   CSS the Skin   Javascript the Brain

TABLES

DIFFICULT TO UNDERSTAND

- A data table is very difficult to understand if only one isolated piece of data can be seen at a time, What is the problem experienced by users who use non-visual browsers.

- To avoid this problem, you have to label tables correctly.

CAPTION

ADD A TITLE THAT PROVIDES A SHORT DESCRIPTION IN THE <CAPTION> TAG, RIGHT AFTER THE <TABLE> TAG.

SUMMARY

- Put a summary that complements the title in the summary attribute of the <table> tag:
  - with the structure of the table (number of rows, number of columns)
  - with description headings
  - with the relationship that the table has with the rest of the page etc.

TH

- Define the headers both vertical and horizontal with <th> tag

```html
<table summary="5 columnas (días de la semana) y 4 filas (horas)">
<caption>Horario de clase</caption>
<tr>
 <th></th>
 <th id="columnaLunes">Lunes</th>
</tr>
<tr>
 <th id="filaHora10">10:00</th>
 <td
  headers="columnaLunes filaHora10">
   Matemáticas</td>
</tr>
</table>
```

FROMS

MAKE SURE THAT EACH ELEMENT OF A FORM HAS AN ASSOCIATED <LABEL> TAG

```html
<form name="contacto" method="post" action="#">
<fieldset>
 <legend>Información personal</legend>
  <label for="nombre" tabindex="1">Nombre:</label>
  <input type="text" id="nombre" name="nombre" autofocus required  ><br>
```

Task.

CASTILLA Y LEÓN.