Anybody Home, McFly?

About accessibility today, back then, and tomorrow.

Date of lecture: 9th September 2022
Handout version: 1.0.2
Date of this version: 06th October 2022
Date of handout version 1.0.1: 29th September 2022

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Title Slide

Content of title slide

- Anybody Home McFly?
  About Accessibility today, back then, and tomorrow.
  21st ILIAS conference 2022
  8./9. Sept. 2022
- Wolfgang Schmidt-Sielex
  Fachhochschule Dortmund
  ILIAS Kompetenzzentrum
  Digitale Barrierefreiheit in Studium und Lehre
  (Digital Accessibility in Studies and Teaching)
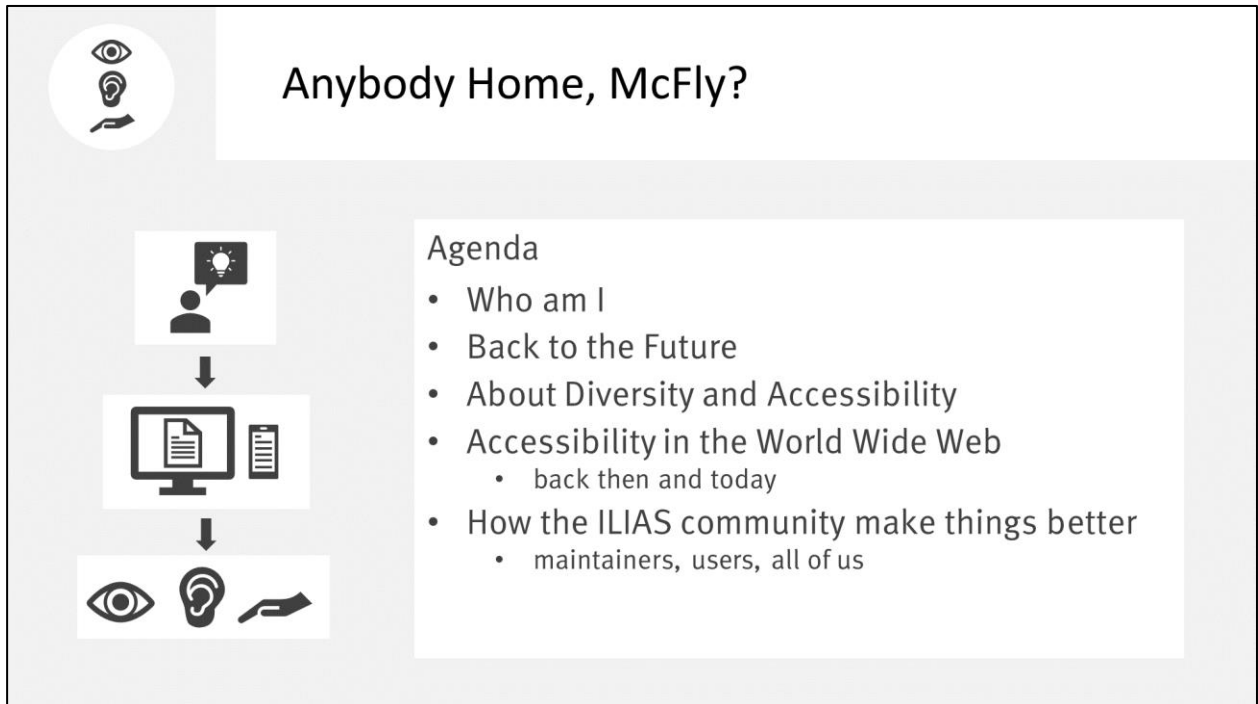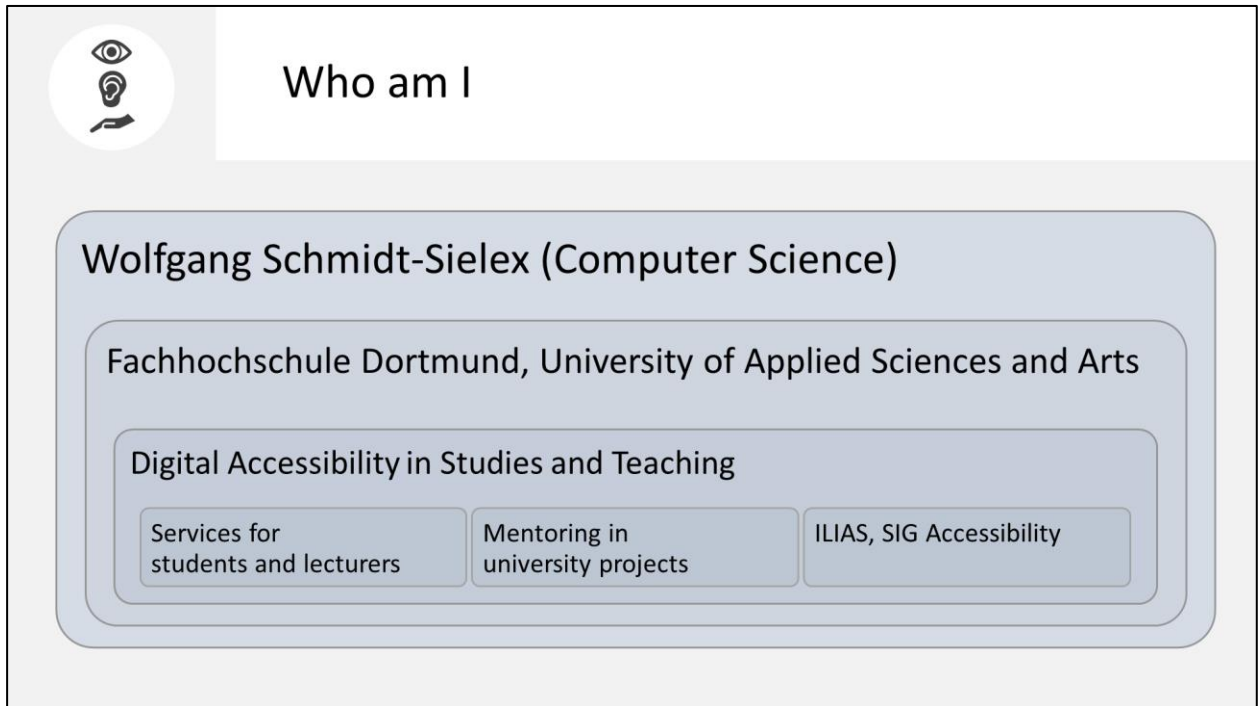
Slide "Anybody Home, McFly? - Agenda"

Content of the slide "Agenda"

- Who am I
- Back to the Future
- About Diversity and Accessibility
- Accessibility in the World Wide Web
    o back then and today
- How the ILIAS community make things better
    o maintainers, users, all of us

Additional information to the slide "Agenda"

Part of the LILAS conference presentations is given under the topic 'back to the future'. When this topic was announced earlier this year, Wolfgang instantly thought of one particular scene in the 'Back to the Future' movie, which might resemble the struggle of the ILIAS community to improve the learning management system (LMS) in terms of accessibility. Therefore, the lecture combines the two conference topics 'diversity' and 'back to the future'.

Slide "Who am I"

Who am I

Wolfgang Schmidt-Sielex (Computer Science)

Fachhochschule Dortmund, University of Applied Sciences and Arts

Digital Accessibility in Studies and Teaching

| Services for students and lecturers | Mentoring in university projects | ILIAS, SIG Accessibility |

Content of the slide "Who am I"

- Wolfgang Schmidt-Sielex (Computer Science)
  Fachhochschule Dortmund, University of Applied Sciences and Arts
  Digital Accessibility in Studies and Teaching
    - o Services for students and lecturers
    - o Mentoring in university projects
    - o ILIAS, SIG Accessibility

Slide "Back to the Future"

Content of the slide "Back to the Future"

A television screen with a sketch of 6 young men. One man is knocking on another one's head. The others are watching those two. A speech bubble says: "Anybody home, McFly? Think, McFly, think!"

Below the screen there is a note saying "'Back to the Future' (Amblin Entertainement, Universal Pictures)"

Several labelled arrows point to different people on the screen:

- "accessibility expert" points to the man knocking,
- "maintainer" points to the man who gets knocked,
- "users" point to some bystanders,
- "man from the future, wondering what all this is about" points to one particular bystander.

Additional information to the slide "Back to the Future"

The scene is here given as a sketch while in live presentation there was a coloured animated picture of the scene. In the original movie a young man named Biff Tannen is bullying George McFly, saying "Anybody home, McFly?", in order to remind him of doing the homework for both of them. Marty McFly, who is George's future son, travelled 30 years back in time and witnesses this event.

Wolfgang, as an accessibility expert, sometimes feels like 'the bad guy' who annoys maintainers by reminding them what they overlooked and how things should be done. This is why the slide shows different roles assigned to the people of the movie. The guy from the future hopefully does not understand anything of this accessibility issues because he never knew there were such problems back then.

Slide "Diversity means ..."

Content of the slide "Diversity means ..."

- diversity of technology
  - Hardware
  - Software
- diversity of situations
  - in and out of office
- diversity of people
  - ethnic classifications, age, gender, religion, philosophy, physical abilities, socioeconomic background, sexual orientation, gender identity, intelligence, mental health, physical health, genetic attributes, personality, behavior or attractiveness. (queensborough community college)
- (probably more)

The text is complemented by black and white icons that are connected by arrows:

- a person with a light bulb in a speech bubble
- two arrows point from the person to two groups of icons.
  - The first group of icons shows a document on a computer screen and on a smartphone.
  - The second group of icons shows an office building, a private house, a train and the planet Saturn.
- From the two groups of icons two arrows point to more icons that show people of different gender, some standing, some moving, some young, some old, some on their feet, others sitting in a wheelchair or walking with a cane.

Additional information to the slide "Diversity means ..."

- Diversity of technology refers to a wide range of hardware and software in all their combinations. For example, many people use light weighted e-book-readers with a month of time between battery charging processes and with the possibility of adding personal notes to the data. Students would also use this equipment more often to consume knowledge for their studies but often some of the information relies on colours only, for instance in diagrams. E-ink-

displays mainly have black and white screens and even those who are coloured have a limited range of colours. So even some of the most modern technologies have limits that are similar to visual disabilities like a false or reduced sense of colours. If our information is not accessible we force people to use hardware WE want them to use although there are better ways for people. Not everybody wants to use heavy hardware like tablets and notebooks that needs to be recharged at least once a day when they could view our information fairly on a light weighted e-book-reader that needs charging only once in a couple of weeks.

- Diversity of situations refers to all the situations where people can use their hardware to access our content and consume our information. This can be in the office but also at home or in noisy areas like when we are on the train, for example watching a screencast without earphones. In this situation we encounter a disability because we cannot hear properly, so subtitles would be good for us to understand what is going on in the video.
  Planet Saturn, which is also shown in the slide, might give a laugh but astronauts work with big suits in huge gloves which means they have some disabilities in movement. All the tools and the user interfaces they need to access must be (imaginary fanfare!) accessible for them, in case of the interfaces for instance via touch screens with big button sizes. Besides other things, designing accessible web interfaces means that they have individually scalable menu and button sizes and could easily be used by astronauts on their way to Mars even when they are forced to wear their space suits.

- Altogether we need to understand that there are so many different technological ways combined with so many different environments and so many different and even changing abilities of people that everybody of us can get into some sort of disability situation where we urgently need accessibility in order to access the information or function we want to use.

Slide "Digital Accessibility means ..."

Content of the slide "Digital Accessibility means ..."

- perceivable, operable, and usable ...
- with all different technologies in all different situations for all different people.
- POUR principle (acronym)
  - Perceivable
  - Operable
  - Usable
  - Robust

The text is complemented by black and white icons that are connected by arrows:

- a person with a light bulb in a speech bubble
- two arrows point from the person to two groups of icons.
  - The first group of icons shows a document on a computer screen and on a smartphone.
  - The second group of icons shows an office building, a private house, a train and the planet Saturn.
- From the two groups of icons two arrows point to the icons of an eye, an ear and a hand.

Additional information to the slide "Digital Accessibility means ..."

The shown icons are similar to the ones on the previous slide, except that the people were replaced by symbols of people's senses.

Besides the POUR principle there is a principle of two senses. Each information must be perceivable by at least two senses. For example, visual information of a video must be hearable (audio description) and audible information of a video must be visible or readable (subtitles or sign language). Another example is that visible text must be hearable. Some of these two-senses-requirements are easily to obtain because integrated assistive technology does it for us (for instance text-to-speech software integrated in all common operating systems for computers and smartphones). Other requirements, like audio description in a movie or description of a picture in a text, are more difficult to obtain and cannot be done by assistive technologies or artificial intelligence (at least not yet).
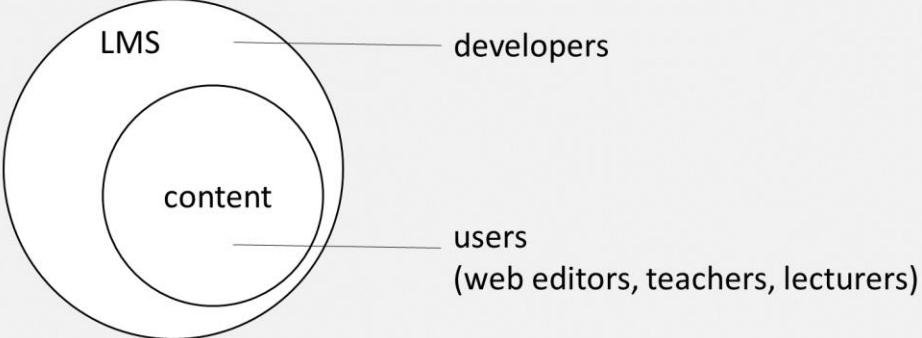
Slide "Accessibility in LMS/CMS means ..."

Content of the slide "Accessibility in LMS/CMS means ..."

- Accessibility of the LMS.
- Accessibility of the content.

Below the text a circle is labelled 'LMS' and a line labelled 'developers' points to this circle. Inside the LMS circle there is a smaller circle labelled 'content'. Another line points to this circle and is labelled 'users (web editors, teachers, lecturers)'.

Additional information to the slide "Accessibility in LMS/CMS means ..."

This is a schematic view of two important responsibilities in content management systems (CMS) or learning management systems (LMS). Developers need to make their system accessible, users need to deliver their content accessible.

There are some other more detailed topics related to accessibility in CMS and LMS like individual skins. All combination needs to be accessible.

Slide "A little Glossary"

Content of the slide "A little Glossary"

Some technical description
(very brief, incomplete description)

- **HTML / hypertext markup language**
  The description of a web page content, including semantics.
- **CSS / cascading style sheets**
  The description of how the content of a web page looks (partially even reacts).
- **JS / javascript**
  programming language used in websites for complex dynamic functionality.
- **User Agent**
  Software that receives internet content and functionality and gives it to users
  (e. g. webbrowser)

Additional information to the slide "A little Glossary"

Some of these terms will be used in further descriptions.

Slide "The Idea of the World Wide Web"

Content of the slide "The Idea of the World Wide Web"

Tim Berners-Lee:

- "The WorldWideWeb (W3) is a wide-area hypermedia information retrieval initiative aiming to give universal access to a large universe of documents."
  (first world wide web page, 1991 - http://info.cern.ch/hypertext/WWW/TheProject.html)
- "The power of the Web is in its universality.
  Access by everyone regardless of disability is an essential aspect."
  (launch of web accessibility initiative, 1997 - https://www.w3.org/Press/IPO-announce)

Both quotations of Berners-Lee have boxes that highlight the important terms of the sentences:

- for the 1991 phrase: hypermedia information, universal access
- for the 1997 phrase: access by everyone

Additional information to the slide "The Idea of the World Wide Web"

It is the initial design of the world wide web to be accessible for everyone. Right from the beginning we have had all the tools to make our content accessible. Mostly because we are unwary or heedless, we use the tools in a way that exclude people from the information and services we actually want them to use.

Slide "The first Webpage"

Content of the slide "The first Webpage"

Headline of the slide: The first Webpage (accessible), http://info.cern.ch.

World Wide Web
The WorldWideWeb (W3) is a wide-area hypermedia information retrieval initiative aiming to give universal access to a large universe of documents.
Everything there is online about W3 is linked directly or indirectly to this document, including an executive summary of the project, Mailing lists , Policy , November's W3 news , Frequently Asked Questions .
What's out there?
    Pointers to the world's online information, subjects , W3 servers, etc.
Help
    on the browser you are using
Software Products
    A list of W3 project components and their current state. (e.g. Line Mode ,X11 Viola , NeXTStep , Servers , Tools , Mail robot , Library)
Technical
    Details of protocols, formats, program internals etc
Bibliography
    Paper documentation on W3 and references.
People
    A list of some people involved in the project.
History
    A summary of the history of the project.
How can I help ?
    If you would like to support the web..
Getting code
    Getting the code by anonymous FTP , etc.

Additional information to the slide "The first Webpage"

In this handout the content of the first web page is given as pure text in plain paragraphs. The original has a proper headline, a definition list, and a couple of hyperlinks. For the original, see the CERN web page:

http://info.cern.ch/hypertext/WWW/TheProject.html

Slide "Designing Web Pages (1)"

Content of the slide "Designing Web Pages (1)"

- designers (and design amateurs) discover the new 'playground'
    - design-thinking like for print media
      (which is bad for dynamic visual concepts)
    - implementation methods interfere with functionality
      (instead of 'form follows function')
    - different new innovative(?) web techniques
      invented by organizations (not standarised).
    - above all: egocentric view,
      diversity of technology, (situations) and
      web page visitors is not valued
- (Amateurs do whatever they want.)

The slide also shows a screenshot of a web page with the introduction 'you are going to see the strange world of Wolfgang Schmidt-Sielex'. The web site has a background with grey tiled pattern, text in different colours and sizes, a photograph of a baby in two reversed versions, and a menu area on the left side with a background with blueish tiles.

Below the screenshot a text line says: 'designer/amateur says: best web site ever!'

Additional information to the slide "Designing Web Pages (1)"

During the presentation this slide was followed by a live presentation of Wolfgang's early web site. The page layout was designed in 1995, the shown version is from 1999.
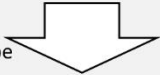
Slide "Designing Web Pages: Example A (1995)"

Content of the slide "Designing Web Pages: Example A (1995)"

On the right side there are miniature pictures of Wolfgang's first web page layout. Two different parts of the web page, the menu area and the content area are shown in different pictures. An arrow points to the whole web page with the combination of both. A text next to the arrow says: 'two different files in one view: technique invented by Netscape'.

On the left side of the slide there is the following text:
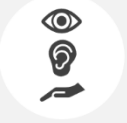
- Wolfgang's first website (established 1995/96)
    - frames
      (functionally bad)
    - background tiles
      (visually bad)
    - contrasts
      (visually bad)
    - text decoration
      (e. g. underline, web conceptually bad)
    - pictures lack alternative texts
      (bad for two-senses-concept)
      surprisingly, at least the link graphics have alternative texts.

Additional information to the slide "Designing Web Pages: Example A (1995)"

The graphical explanation on the slide, that shows two different files presented in one view, is the frames concept which is described as 'functionally bad'.

In 1995 Wolfgang was a web design amateur and did many things wrong. But obviously in 1999 he had already given some thought to web accessibility because at least he used alterative texts in the menu which is composed of different pictures with hyperlinks to other pages. Pictures cannot be read by screen readers for blind people so they need hidden text alternatives that explain what you see in the picture. By 1999 that was done in the web site by repeating the menu item texts.

Slide "Designing Web Pages (2)"

Designing Web Pages (2)

- design problems identified, e.g.
  - questionable innovations (like frames, marquee …)
  - web pages miss a technical concept for "dynamic design"
- new idea: style sheets (idea 1993)
  - first official CSS recommendation in 1996
  - above all: web accessibility initiative (WAI) launched in 1997
- design problem solved?
  - designers still used html-based design instead of css-based design
  - website tools (e. g. offline content management) still used html-based design output instead of css-based output
  - Amateurs still did whatever they wanted.

Content of the slide "Designing Web Pages (2)"

- design problems identified, e.g.
  - questionable innovations (like frames, marquee …)
  - web pages miss a technical concept for "dynamic design"
- new idea: style sheets (idea 1993)
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- design problem solved?
  - designers still used html-based design instead of CSS-based design
  - website tools (e. g. offline content management) still used html-based design output instead of CSS-based output
  - Amateurs still did whatever they wanted.

The slide also shows a screenshot of a commercial web page that belonged to a nursing service. header and footer of the page have a yellow background, in between is the text content on a white background.
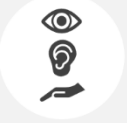
Additional information to the slide "Designing Web Pages (2)"

People already talked a lot about accessibility but most web designers or web developers would not listen or would not care.

During the presentation this slide was followed by a live view of the nursing service website in two different versions. The first version that is also seen in the slide, was designed around 2004 and stayed this way until 2011, when it was followed by a more modern version with more accessible web design techniques.

Slide "Designing Web Pages: Example B (2004)"

Content of the slide "Designing Web Pages: Example B (2004)"

1. commercial web page, nursing service
   - o 2004: table layout
     problem, but can be made usable
     (if you know what you are doing)
   - o 2011: CSS layout
     much better
     (easier to use & perceive for everybody, easier to maintain)

Two screenshots show both versions of the website with an arrow that points from the older version to the newer one. The optical design of the content has not changed much. Only the coloured area of the header has been reduced from a rectangle into a smoothly rolling shape and the footer went completely white.

Additional information to the slide "Designing Web Pages: Example B (2004)"

Sometime between 2004 and 2011 the table layout had already been improved with HTML and CSS properties so that the website was usable by most people. Nonetheless HTML tables were made for data tables not for page layout, and they are always a problem when they are used for layout purposes.

The redesign made the website much more accessible and much easier to maintain. During the lecture the latter was demonstrated by comparing the complexity of the HTML source codes. Even when you do not know HTML you can instantly see that the code is much shorter and tidier in the newer web design:
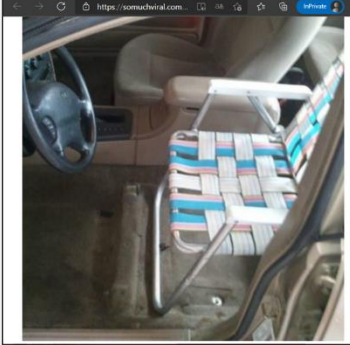
There are two screenshots in this picture. They show miniatured versions of the source codes of the two different web page layouts: the table layout on the left, the CSS layout on the right. The actual main content of the page is marked blue in both versions. The CSS layout is much shorter and easier to maintain than the HTML table layout. The HTML code of the table layout has altogether 7081 characters in 171 structured lines, the HTML code of the CSS layout has only 4067 characters in 79 lines.

Slide "Using wrong html elements"

Content of the slide "Using wrong html elements"

Using wrong html elements is similar to using the wrong parts when building or repairing cars:
open the "door" and have a "seat".

Screenshots taken from <https://somuchviral.com/fix-your-car/>

1. A car with a plank mounted to the passenger side with iron hinges. A headline says: 'And any wood can double as a door'.
2. An old folding camp chair inside a car where the driver's seat used to be.

Additional information to the slide "Using wrong html elements"

Those cars still run as intended and they can still be used, but it is the wrong way to build things, some people might not be comfortable with the construction, and there are laws that say you should do better than that - at least in Europe.

Slide "Some of today's reasons for accessibility issues"

Content of the slide "Some of today's reasons for accessibility issues"

Some of today's reasons for accessibility issues (which are in responsibility of web developers)

- Still: diversity of technology, situations and people is rarely considered
- Still: third party innovations are preferred over standardized recommendations
  - tested and approved only for few browsers in few operating systems,
  - does not work with the whole variety of ...
    - hardware and operating systems,
    - web browsers,
    - assistive technologies,
    - individual configurations,
    - etc.
- Still: HTML not used the correct way.
  - e.g. semantics ignored.
  - e.g. look more important than consistent data.

Three arrows point from different parts of the previous text to the following text:

New since web 2.0:
web content is edited online by many people.
most web editors are web technique amateurs.
this means: systems need to help with content accessibility and everybody needs to know about digital accessibility.

Additional information to the slide "Some of today's reasons for accessibility issues"

True example 1: A web development agency says: 'How could we know that you really meant it when you asked for an accessible web site? We thought your call for bids just mentioned accessibility because it's a fashion.'

True Example 2: Lately a problem with the LMS in the rarely used Mozilla Seamonkey browser. (Problems like that often indicate there is a problem with fixed web standards.) The issue was not

accepted as a bug because of the use of 'unusual technology' and people should use one of the few recommended browsers. Nonetheless the problem was fixed shortly later, probably because there was something else that did not work properly.

Slide "Examples for accessibility problems (1)"

Content of the slide "Examples for accessibility problems (1)"

Examples for accessibility problems (here: user generated content)

- confusing table structure
  https://en.wikipedia.org/wiki/58th_Academy_Awards (1986)

Screenshot of an HTML data table that is used for layout purposes. The table is not straight. Instead it has various numbers of columns (1 to 3) in its lines and various numbers of lines (6 to 12) in its columns. The table contains different data types in its columns and has neither a straight nor a predictable structure.
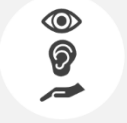
Additional information to the slide "Examples for accessibility problems (1)"

The shown data table is an overview of the history of the Academy Awards (The Oscars). It is presented at the end of every modern Academy Award page in the Wikipedia and uses a data table structure for content layout which is similar to using a wooden plank as a car door. In this special case, a couple of tables are put into each other's data fields which makes it almost impossible to understand it semantically. Screen reader users are lost.

Recommendations:

- Tables should be used only for data tables (tables are tables are tables ...),
  which means ...
- Tables should always be straight (overall the same rows and columns).
- Tables should have headlines.
- Tables should not be placed inside other table contents ('table nesting').

Slide "Examples for accessibility problems (2)"

Content of the slide "Examples for accessibility problems (2)"

Examples for accessibility problems (here: developer generated content)

- wrong use of html elements

Two German screenshots of ILIAS web pages with parts of the HTML source codes shown in the developer toolbar of the browser. The source codes refer to the ILIAS main menu.

The picture on the left side shows an ILIAS 6 with the subtitle 'ILIAS 6, wrong elements (div = 'some container' without meaning). On the right there is an ILIAS 7 screenshot with the subtitle 'ILIAS 7, correct elements (ul & li = lists).
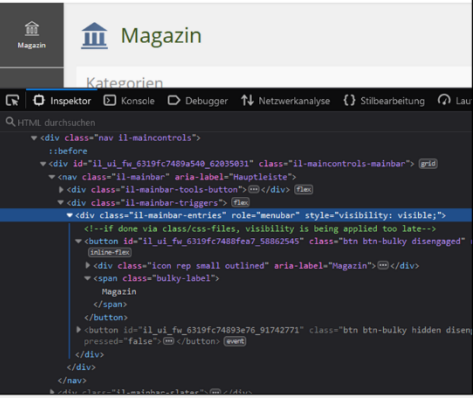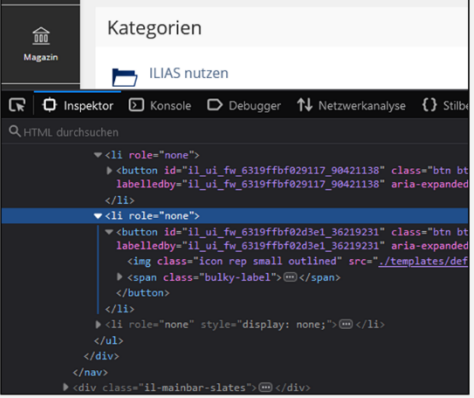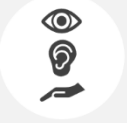
Additional information to the slide "Examples for accessibility problems (2)"

This is one fine example of how things can get straightened in ILIAS when experts work together - in this case the maintaining experts and the accessibility experts of the ILIAS community. The design of the ILIAS user interface had been changed with ILIAS 6. Visually the main menus in ILIAS 6 and ILIAS 7 are equal and hardly distinguishable from each other, but menus have to be constructed as HTML lists, so there were technical construction problems in ILIAS 6 that made the menu far less accessible. After the maintainers were informed about this and a couple of other issues, the HTML had been changed and the menu became more accessible.

Speaking of the 'div' elements in HTML, also see the next slide.

Slide "A possible problem maker"

Content of the slide "A possible problem maker"

A possible problem maker (here: developer generated html)
the 'div disease'

Screenshot that shows some of the HTML source code of a Moodle website. It starts with a div element which has a couple of properties like a class, an id, a role, and so on. Inside the div element is a second div element with its own properties, and inside that a third div with properties, and inside that a fourth div with properties. Inside this fourth div there is a headline element with text, another div element that contains text, and a hyperlink.

Below the screenshot there is a note which says: 'https://moodle.org (but we have this in ILIAS, too; sometimes hard to avoid). More complicated to render, more complicated to maintain.'

In the bottom right corner there is a picture of a couple of opened cardboard boxes that are tucked into each other, each box containing nothing else than the next box which is a bit smaller than the previous one.

Additional information to the slide "A possible problem maker"

The 'div disease' is a phenomenon that can be observed in many websites these days. It describes two issues:

1. The use of the HTML element 'div' for a special purpose, although this purpose is already defined and connected with a specific HTML element that does exactly what a web developer intends to do, and although the 'div' is just a container element with no function at all. Therefore, divs must be programmed to do what the correct elements can already do all by themselves. Divs must be redesigned in a complicated way for example as hyperlinks (which should be an 'a' element), images ('img' element), buttons ('button' element), lists ('li' in combination with 'ul' or 'ol' elements), dropdown lists ('select' element) and so on. Using the correct HTML element for the given purpose makes it work instantly. Using a 'div' needs more maintenance, because 'div' is just a container that was made for grouping content and that has

for itself no function like other purpose-oriented HTML elements, for example 'I am a picture' of img-elements, 'I am a list' of ul-elements or 'I am a dropdown list' of a select-element.

2. Using div not for grouping content but for wrapping up just one other element, very often repeatedly with one div inside another like in the screenshot above.
User agents need to look into all the properties of all the 'empty' div elements to recognise what the web developer wants to do. This increases the complexity of the rendering process of websites and is more complicated to maintain. In the screenshot above it would be much simpler to have just one single 'div' that contains the headline, the text, and the hyperlink. Instead we have a couple of 'divs' with different properties that influence each other. All this is more difficult to follow, for the browsers as well as for the maintainers.

In complex systems it is sometimes not easy to avoid multiple divs like in (2.) because there are many different people involved in the development of the different parts of a content (or learning) management system. So, when one developer creates an area where other developers can place content themselves, there might be a div from the second developer placed inside the div of the first developer.
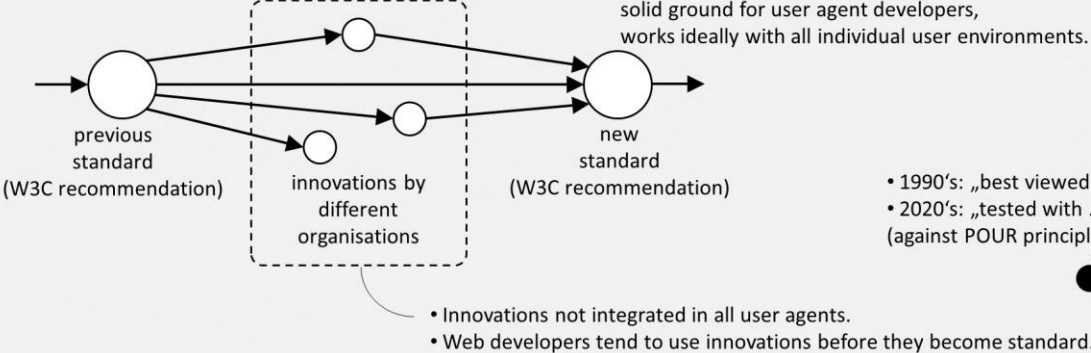
Nonetheless this should be avoided wherever possible, because it enhances the technical complexity of the user interface and increases the possibility for unpredicted behaviour of the interface.

Slide "Web Standards?"

Content of the slide "Web Standards?"

W3C (World Wide Web Consortium, 1994),
WhatWG (Web Hypertext Application Technology Working Group, 2004)

Figure with labelled circles that are connected by arrows from left to right.
On the left side a circle, labelled 'previous standard (W3C recommendation)'.
In the middle a group of three smaller circles, labelled 'innovations by different organisations'.
On the right side a circle, labelled 'new standard (W3C recommendation)'. It has also a descriptive text which says: 'solid ground for user agent developers, works ideally with all individual user environments.' Arrows point from the first circle to the smaller ones in the middle. Only two of the middle circles have arrows to the circle on the right, but there is one large arrow going straight from the left to the right circle.

The group of small circles in the middle is surrounded by a dashed line with the text: 'Innovations not integrated in all user agents. Web developers tend to use innovations before they become standard.' An icon of a cloud with lightning indicates a conflict. It is accompanied by the following text:
1990's: 'best viewed with ...'; 2020's: 'tested with ...' (against POUR principles)

Additional information to the slide "Web Standards?"

The figure indicates that some innovations are dropped and do not find their way into a new recommendation. Web developers tend to use innovations before they become standard because they think of them as a new standard, although they are not. Web development can only be safe for all users, all user agents and all operating systems when we stick to THE most common standard and avoid using techniques that in the meantime are additionally developed by companies or organisations and have not yet become standard.

The use of non-standardised techniques can be compared to a real life example in German traffic, where we have had a booming e-scooter development, ignoring traffic and security regularities. More specific laws were given later (like new recommendations, new standards), and already purchased e-scooters were invalid for further use and from that time on were just for the trash bin. In web development we see such developments all the time.

Slide "Improvements in ILIAS' accessibility"
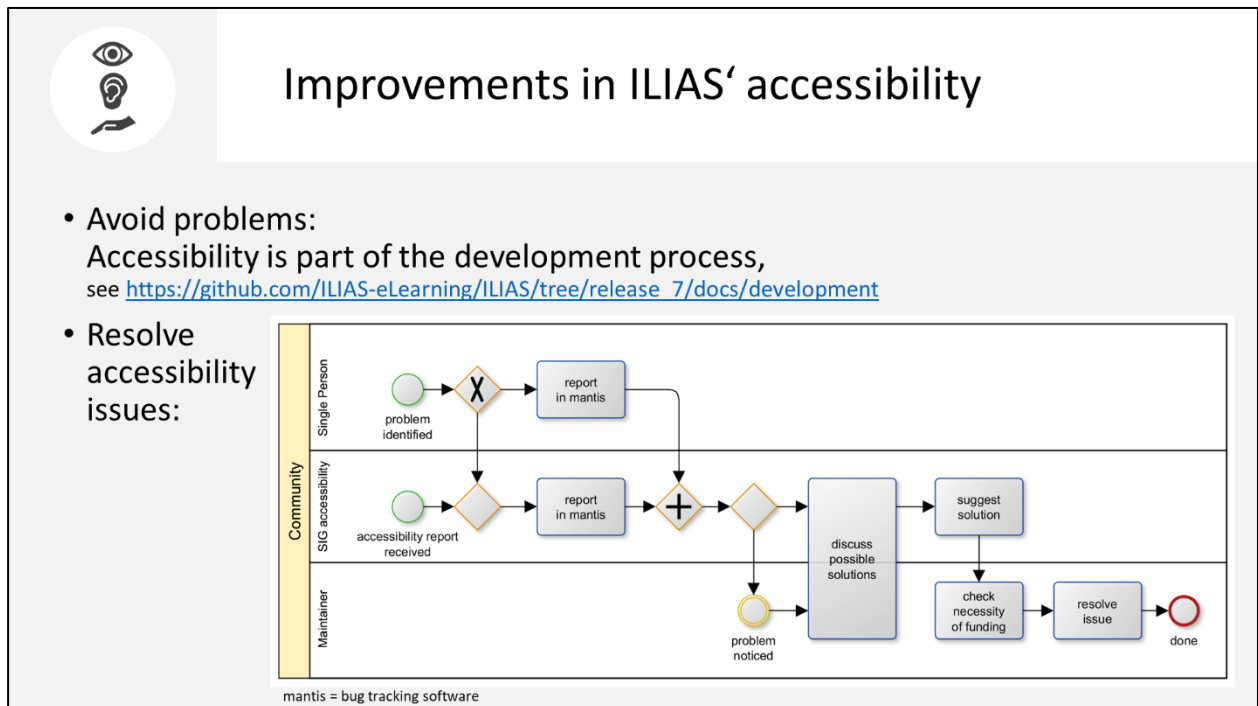
Content of the slide "Improvements in ILIAS' accessibility"

- Avoid problems:
  Accessibility is part of the development process,
  see https://github.com/ILIAS-eLearning/ILIAS/tree/release_7/docs/development
- Resolve accessibility issues:
  A picture of a flowchart in BPMN notation. Either a single person or the 'Special Interest Group (SIG) Accessibility' reports an issue in Mantis, which is the bug tracking software that is used by the ILIAS community. Experienced members of the SIG and the responsible maintainers discuss the issues and possible solutions until there is a suggestion for solving the problem. The maintainers resolve the issue, funded if necessary.

Additional information to the slide "Improvements in ILIAS' accessibility"

The flowchart is a simplified presentation of how accessibility issues can be resolved within the community. We use the same tools and processes that are used in ordinary bug reports. In Mantis the bugs are tagged and categorized as an accessibility issue.

Slide "Improvements in ILIAS' accessibility (tools)"

Content of the slide "Improvements in ILIAS' accessibility (tools)"

- discuss, report, work on accessibility issues.
    - e.g. communication via Special Interest Group (SIG)
    - e.g. Mantis Bug Tracker
    - e.g. Feature Wiki

Four screenshots of the webpage 'docu.ilias.de', the ILIAS page of the SIG Accessibility, a bug list in Mantis bug tracking software, and a Feature Wiki page of ILIAS. Arrows go back and forth between the screenshots.

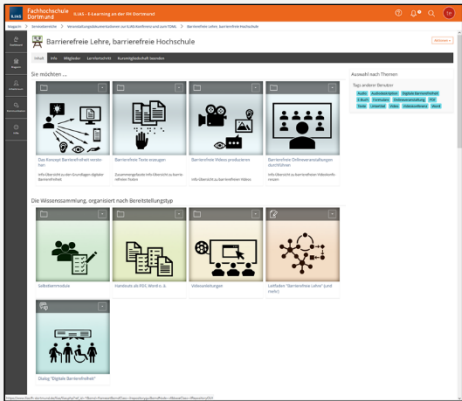Additional information to the slide "Improvements in ILIAS' accessibility (tools)"

The screenshots and arrows indicate that these tools are used in combination, as it was described beforehand.

Slide "Assistance for ILIAS-users"

Content of the slide "Assistance for ILIAS-users"

- ILIAS courses with knowledge collections!
  (SIG members are working on it, open educational resources, CC-BY-SA)
    - e.g. project on help.ilias.de
    - e.g. corporate university projects like ILIAS.nrw
    - e.g. single universities like Fachhochschule Dortmund

A screenshot of an ILIAS course in tiles view at the Fachhochschule Dortmund. The first row of labelled tiles lead to further information about accessibility, for example how to create accessible text documents or videos, or what to consider when organising a lecture via online video conference. More tiles below the first row present the accessibility information according to their content type, for example screencasts, downloadable handouts, or interactive trainings.

Additional information to the slide "Assistance for ILIAS-users"

Currently some of the newer projects that are mentioned above exchange their content and benefit from each other. One of these collections is authorized by the University of Hannover and is meant to be exportable by the end of 2022 using a license complied to OER (open educational resources). This first export will be available in German but can be used and edited in terms of OER.

Slide "Overview – similarities 1997 & 2022"

Content of the slide "Overview – similarities 1997 & 2022"

Web Development	1990's	2020's
Page Layout	frame layout very common table layout very common	'div disease' layout very common
Use of HTML	occasionally wrong semantics	occasionally wrong semantics
Standards	occasionally not followed	occasionally not followed
Diversity of tech, of situations, of people	often forgotten	often forgotten

BUT: Today ILIAS maintainers are more aware of accessibility than Wolfgang was in 1997.
Web technology is more complex today than it was in those days.

Additional information to the slide "Overview – similarities 1997 & 2022"

All of the listed problems are the same or alike.

Today most ILIAS maintainers are eager to solve accessibility issues. The whole community is very cooperative in interests of accessibility. Naturally there are still differences and difficulties in understanding the relevance of specific issues. Nonetheless discussions and suggestions are mostly very constructive and the wish to resolve accessibility bugs is strong on all sides.

Many issues could be avoided by sticking to web standards that people rely on when they use a large variety of hardware and software in combination with thousands of different configurations. If we all would think more in terms of the diversity of the world (things, situations, people, and so on), and not just in terms of 3 or 4 different specially tested user agents that run in a 'typical' computer or smartphone, we automatically make our products more accessible.

Slide "Main Task"

Content of the slide "Main Task"

- Diversity is the normal way of the world. So: 'Think, McFly, think!'
- If we think and live diversity as it is, and integrate it in our work, this would solve most problems before they even occur.

What happens if we don't achieve this?

On the left side there is the number 2022 and the sketch from slide 4 with the 6 young men, one of them knocking on another one's head. On the right side the number 2052 with a sketch of an older man knocking on another man's head. Below both pictures there is a note saying "'Back to the Future' trilogy (Amblin Entertainement, Universal Pictures)".

Additional information to the slide "Main Task"

So, if we do not achieve this, in 30 years Wolfgang will still be going around, knocking on maintainer's heads and shouting: 'Think!'

The motion picture scenes are here given as sketches while in live presentation there were coloured animated pictures of the scenes. The new scene is from a different movie than the first one and it shows just Biff Tannen and George McFly, 30 years older in a similar situation than before.

Ending Slide "Anybody Home, McFly?"
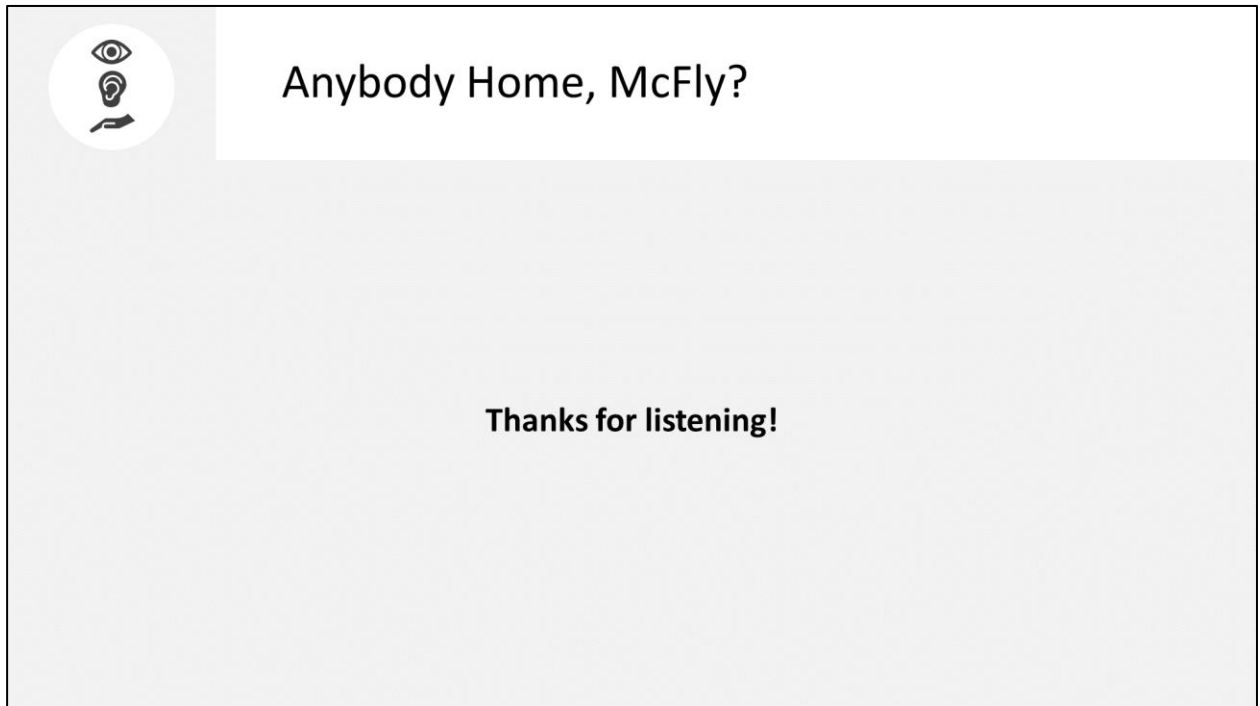
Content of the ending slide "Anybody Home, McFly?"

Thanks for listening!

Additional information to the ending slide "Anybody Home, McFly?"

(none)