

Design for All
Versus
Design for One
and
Adaptive User Interfaces

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GPII & Cloud4all



GPII



- <http://gpii.net/>
- <http://www.cloud4all.info/>

Liberté 0 / Freedom #0



<http://liberte0.org/>

Design for All

Design for All

- ~ universal design (1990s, USA)
- ~ inclusive design (UK)
- ~ accessible design
- Design philosophy rather than a specific method
- Should be planned from the project's start

Universal Design (Ron Mace)

- “Universal design is the design of products and environments to be usable by all people, **to the greatest extent possible**, without the need for adaptation or specialized design.”
- Opposes unnecessary and stigmatising specialised solutions

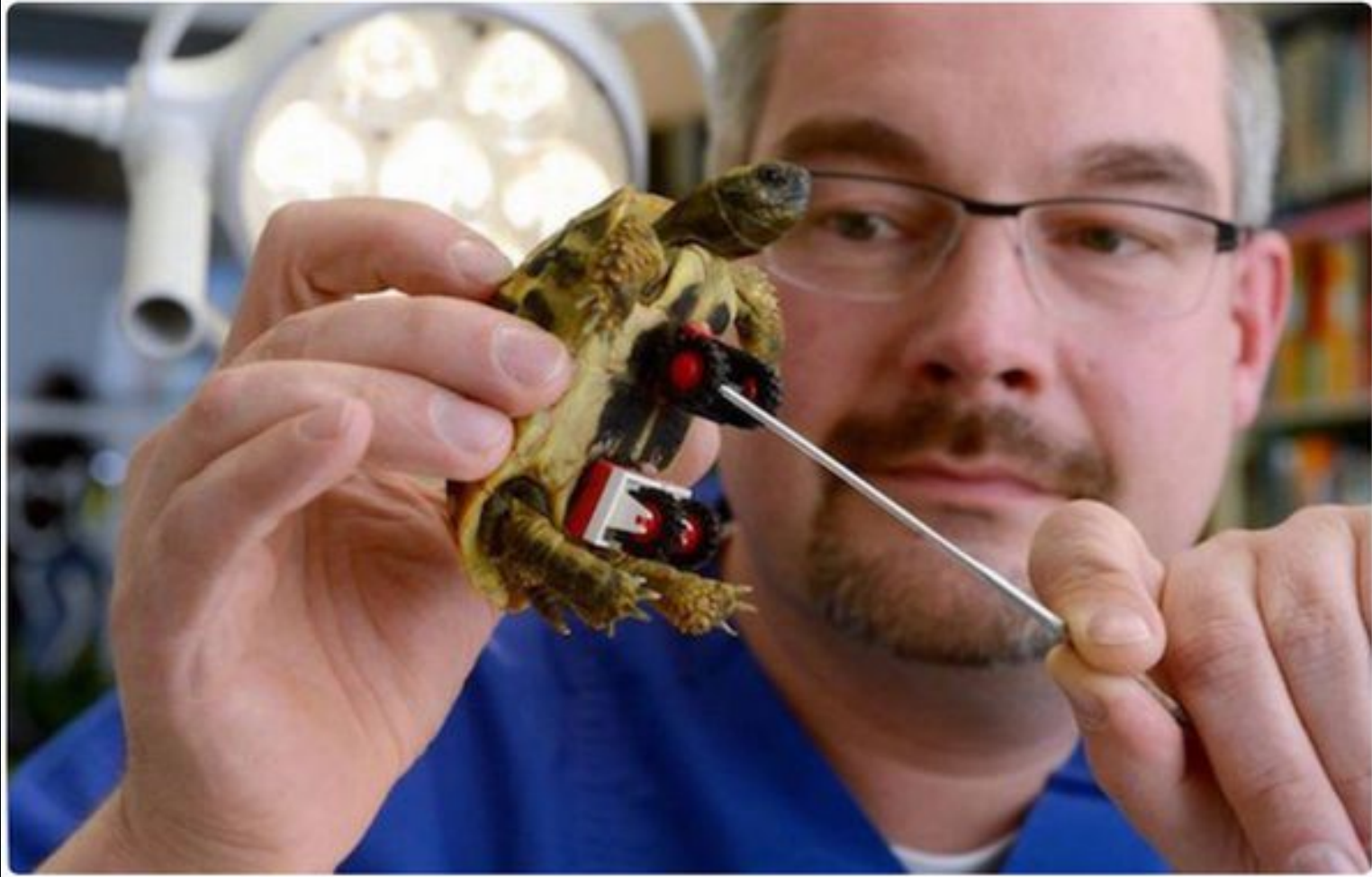
Principles of Universal Design

1. Equitable Use
2. Flexibility in Use
3. Simple and Intuitive Use
4. Perceptible Information
5. Tolerance for Error
6. Low Physical Effort
7. Size and Space for Approach and Use

https://www.ncsu.edu/ncsu/design/cud/about_ud/udprinciplestext.htm

Custom solutions

LEGO Wheelchair Gives Turtle New Chance at Life bit.ly/1OcorQW #Technology



© Digital Ramen:
<http://www.digitalramen.com/lego->

Universal Design and Blindness

- Make application self-voicing?
 - Self-voicing feature "on" for blind people
 - "Off" for most other people
 - = adaptation
- Screen reader to access applications
 - = specialised solution

Design for All: Elements (1)

- Personas

<http://cstrobbe.github.io/AccessibilityResources/personas.html>

- Accessibility API & API testing

- Accessibility checks in automated builds?

- Accessibility tests

- Keyboard access?
- Inheritance of contrast themes?
- Screen reader access?
- Focus visibility & magnifier tracking?

Design for All: Elements (2)

- User testing
 - Challenges:
 - Open source projects: distributed teams
 - How recruit people with disabilities?
- Do not (*ab*)use end users to find accessibility issues that can be detected
 - using tools or heuristics
 - through tests with people without disabilities

Wide range of abilities ...



0.4%



0.1%

Cannot use fingers



space	E	A	R	D	U
T	O	I	L	G	B
N	S	F	Y	V	J
H	C	P	K	Q	.
M	W	X	Z	,	?

0.1%

Speech impairment






Dyslexic

Home > L Read&Write for Google™ -

Learn

The Earth's climate is changing, and people's activities are the main cause.



Our world is always changing. Look out your window long enough, and you might see the weather change. Look even longer, and you'll see the seasons change. The Earth's climate is changing, too, but in ways that you can't easily see.

The Earth is getting warmer because people are adding heat-trapping gases to the atmosphere, mainly by burning fossil fuels. These gases are called greenhouse gases. Warmer temperatures are causing other changes around the world, such as melting glaciers and stronger storms. These changes are happening because the Earth's air, water, and land are all linked to the climate. The Earth's climate has changed before, but this time is different. People are causing these changes, which are bigger and happening faster than any climate changes that modern

TAKE A CLIMATE CHANGE EXPEDITION!
Join us!

The Greenhouse Effect

Certain gases in the atmosphere keep the Earth warm through a process called the greenhouse effect. Watch a brief animation to learn more about the greenhouse effect and how people are causing it to become stronger.

> 1%

Reduced strength

280%

Intellectually impaired

30%



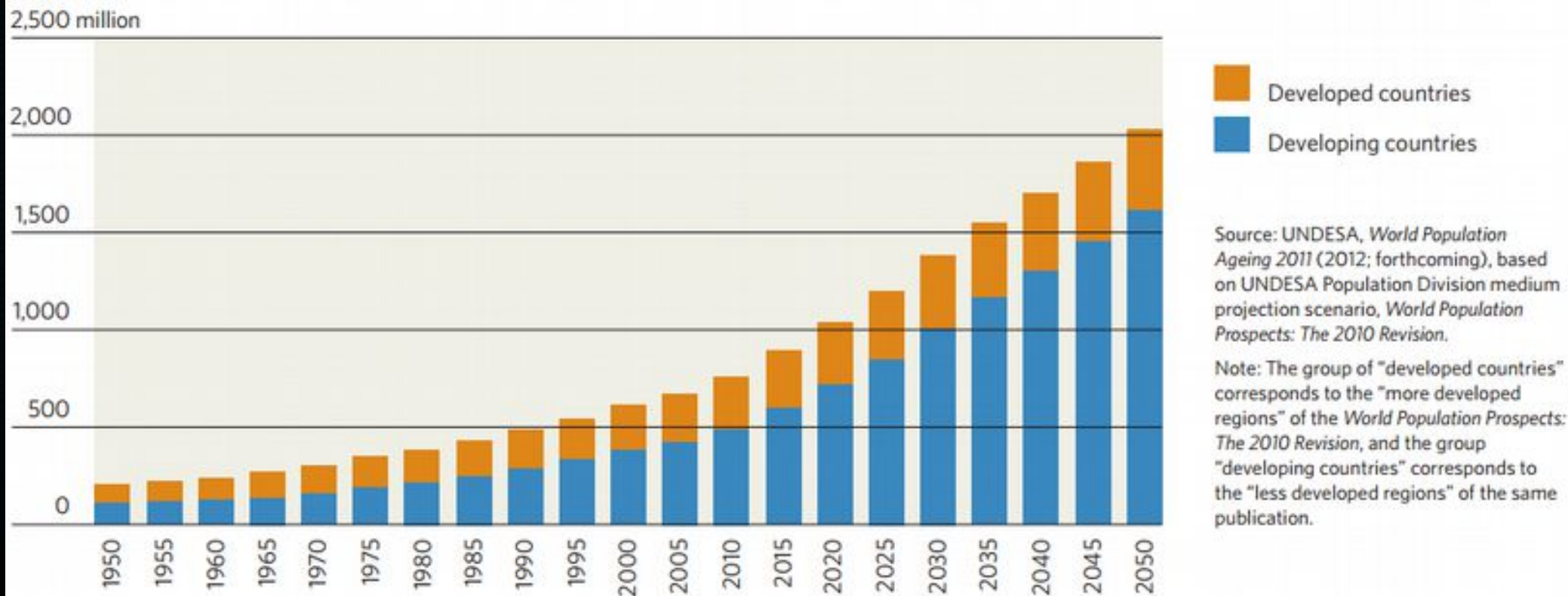
Hard of hearing

60%

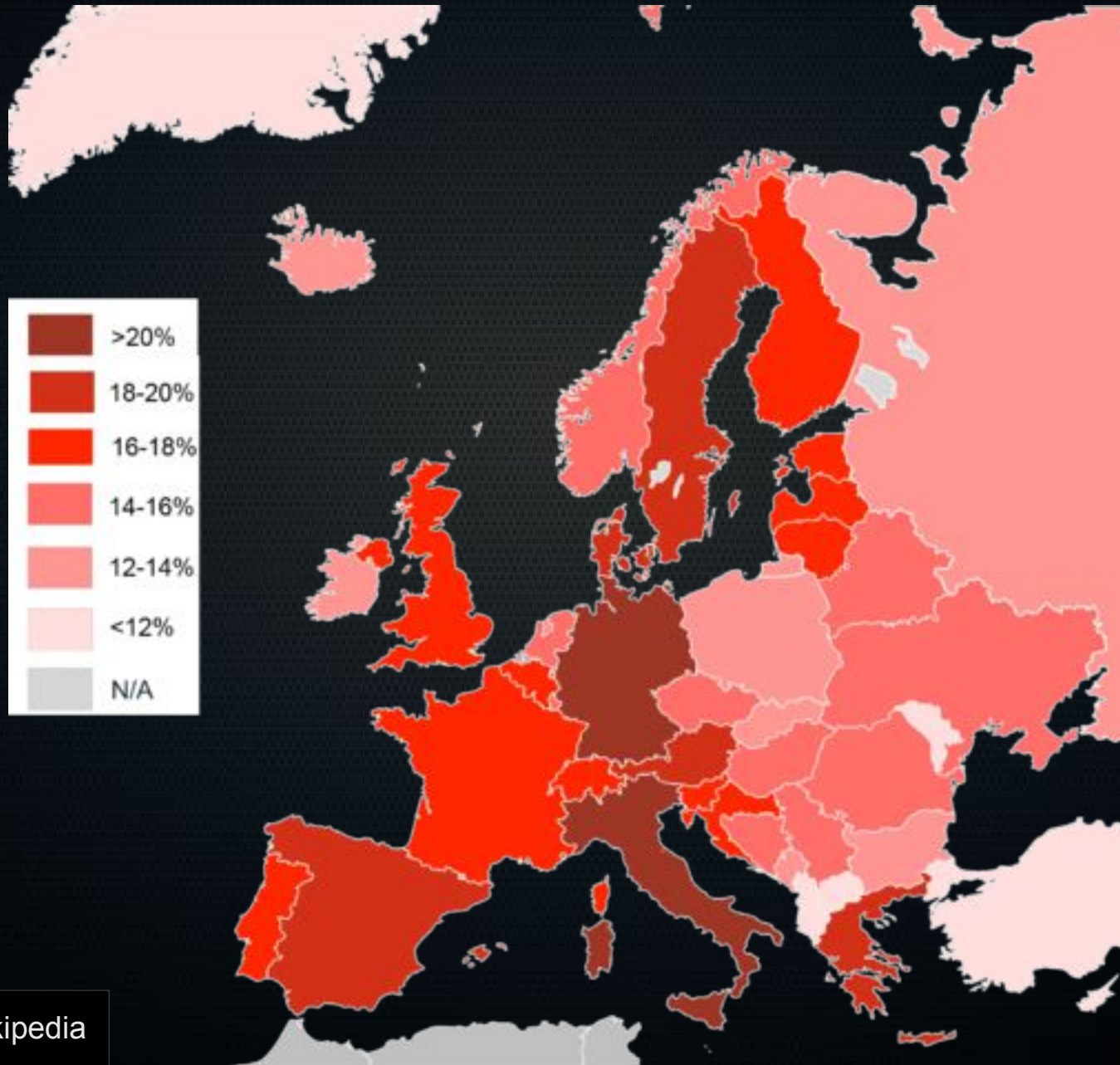
Ageing

Ageing world population (2012)

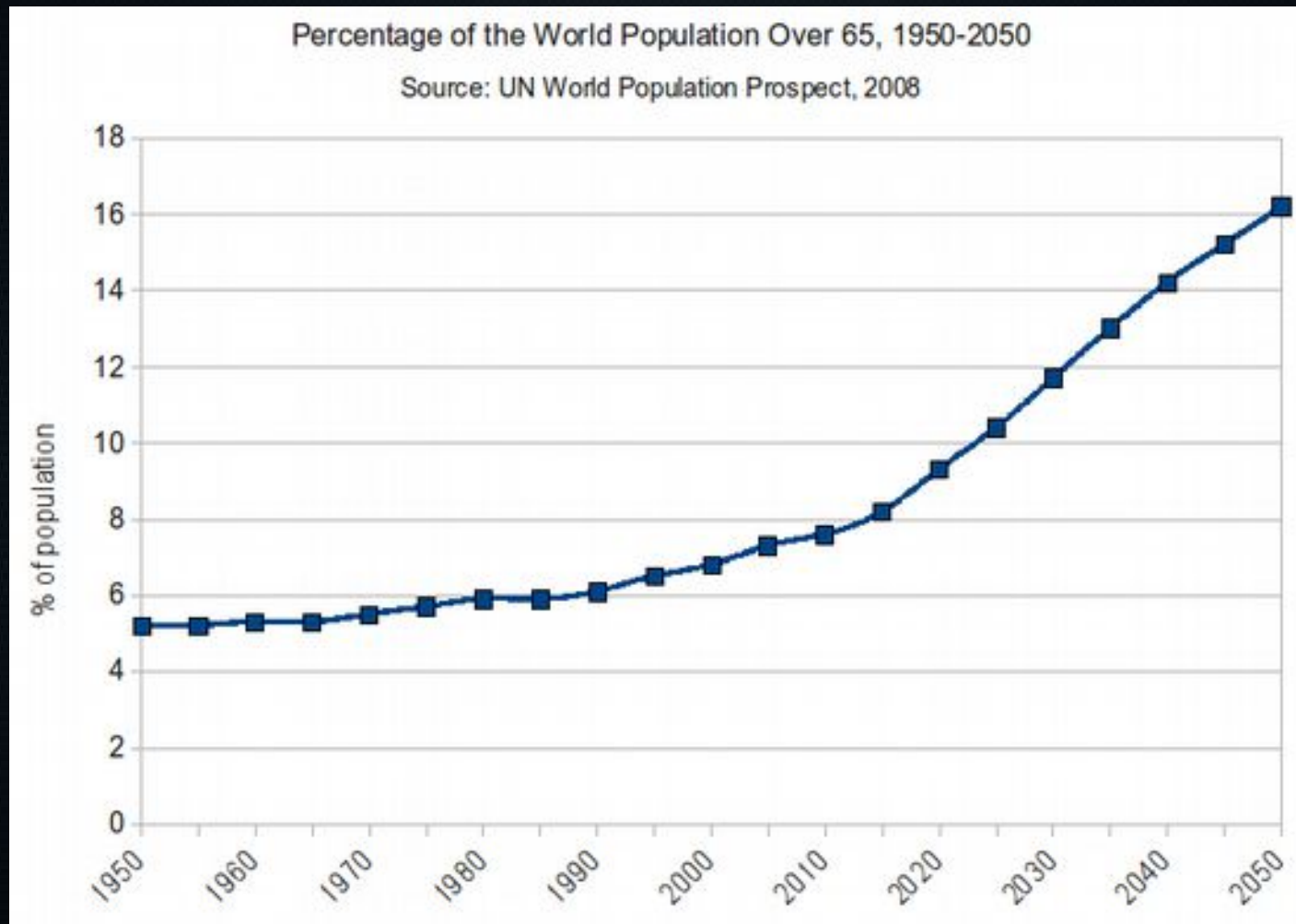
Number of people aged 60 or over:
World, developed and developing countries, 1950-2050



The "Ageing of Europe"



Ageing world population (2008)



20%

over 45 (UN 2012)

15%

age 65-74: declining eyesight

55%

age 60+ :
deaf or hard of hearing²⁷

50%

age 65+ : arthritis

Accessible design

=

**Designing
for
*our future selves***

“Without the need for
adaptation ...”

People don't change settings!

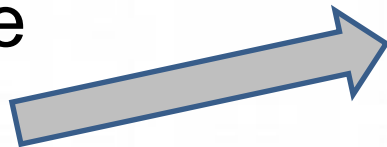
- Jared Spool (2011): “**Less than 5%** of the users we surveyed had changed any settings at all.” [MS Word]
- Don't know settings can be changed
- Can't find where to change the settings
- Fear of breaking something
 - or ending up in a state they can't get out of

“One size fits one”

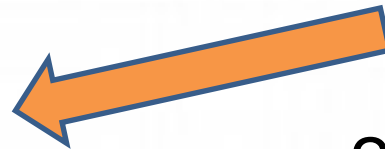
Automatic adaptation: GPII

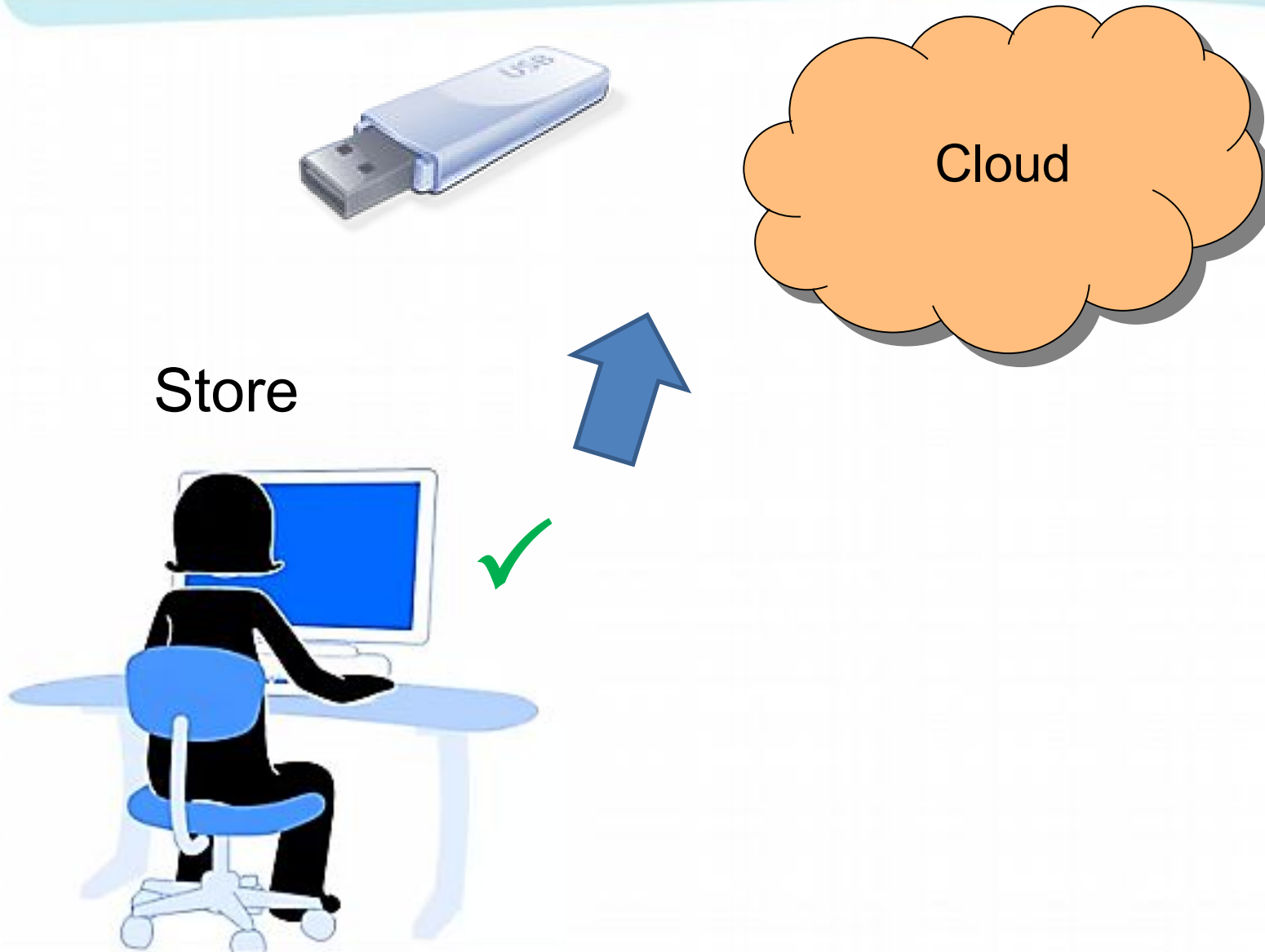
- GPII = Global Public Inclusive Infrastructure
 - Users have a personal “preference set”
 - Preference set triggers adaptations in the system they want to use
 - Adaptation = activating existing accessibility features

1. Store



2. Personal Key





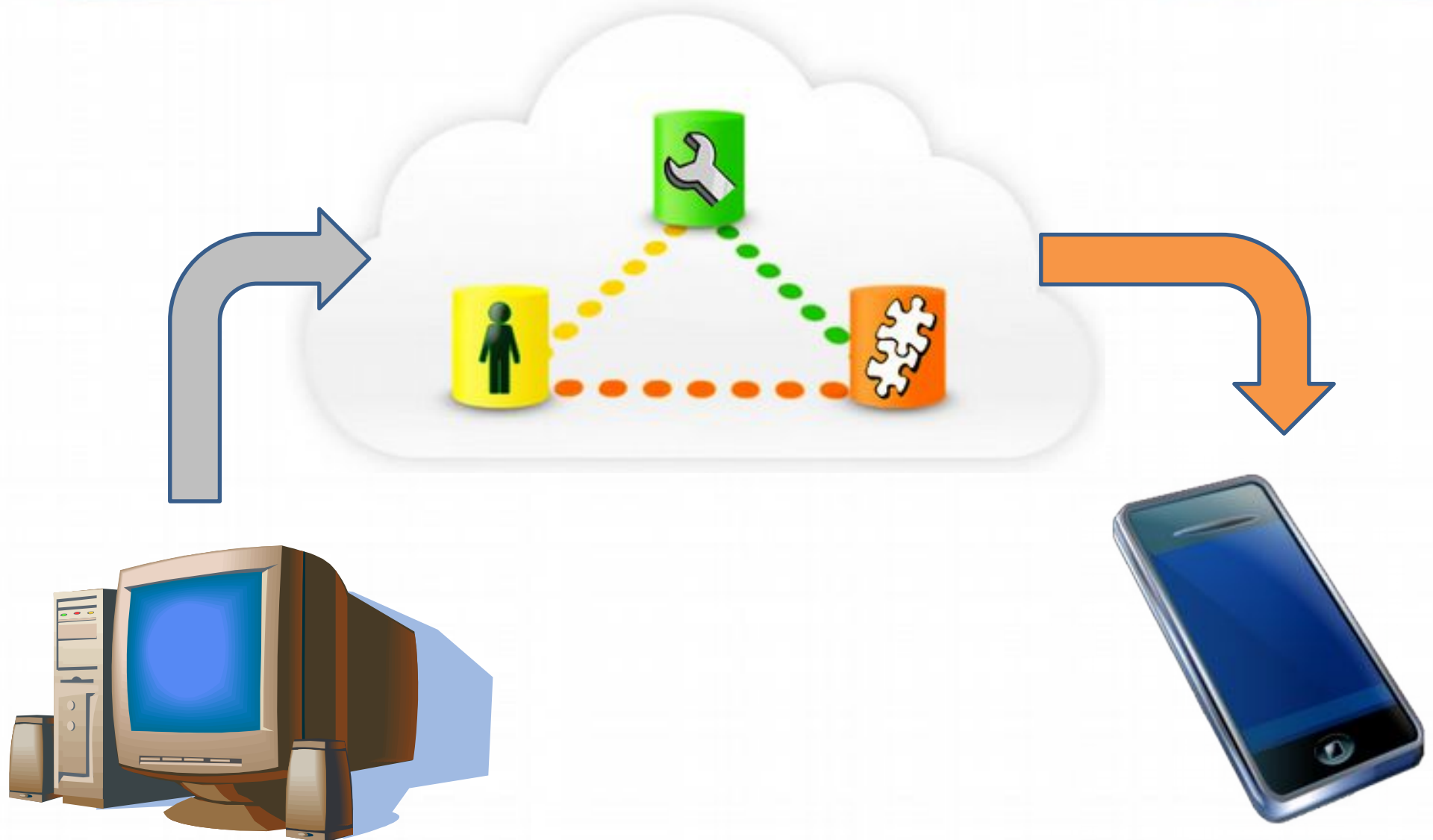


User can

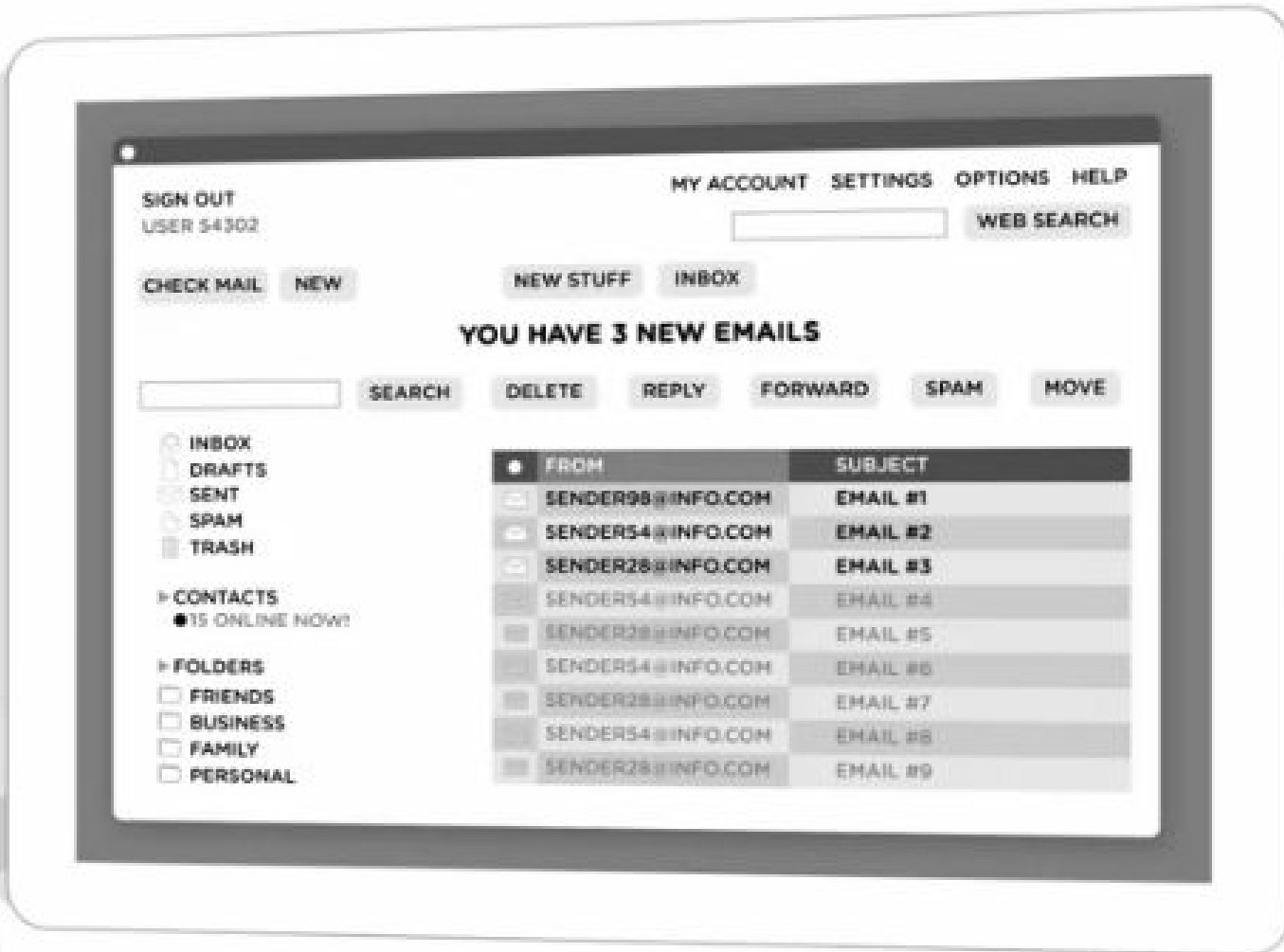
- view
- modify
- delete

their preferences

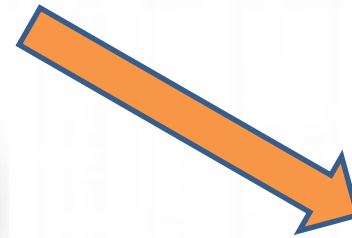
Transform Preferences Between Devices



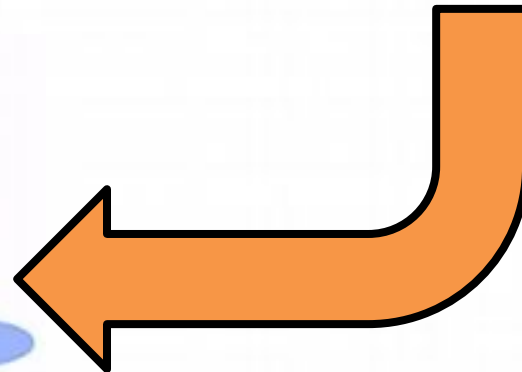
Alternative User Interfaces (Complexity)



Alternative User Interfaces (Simplified UI)

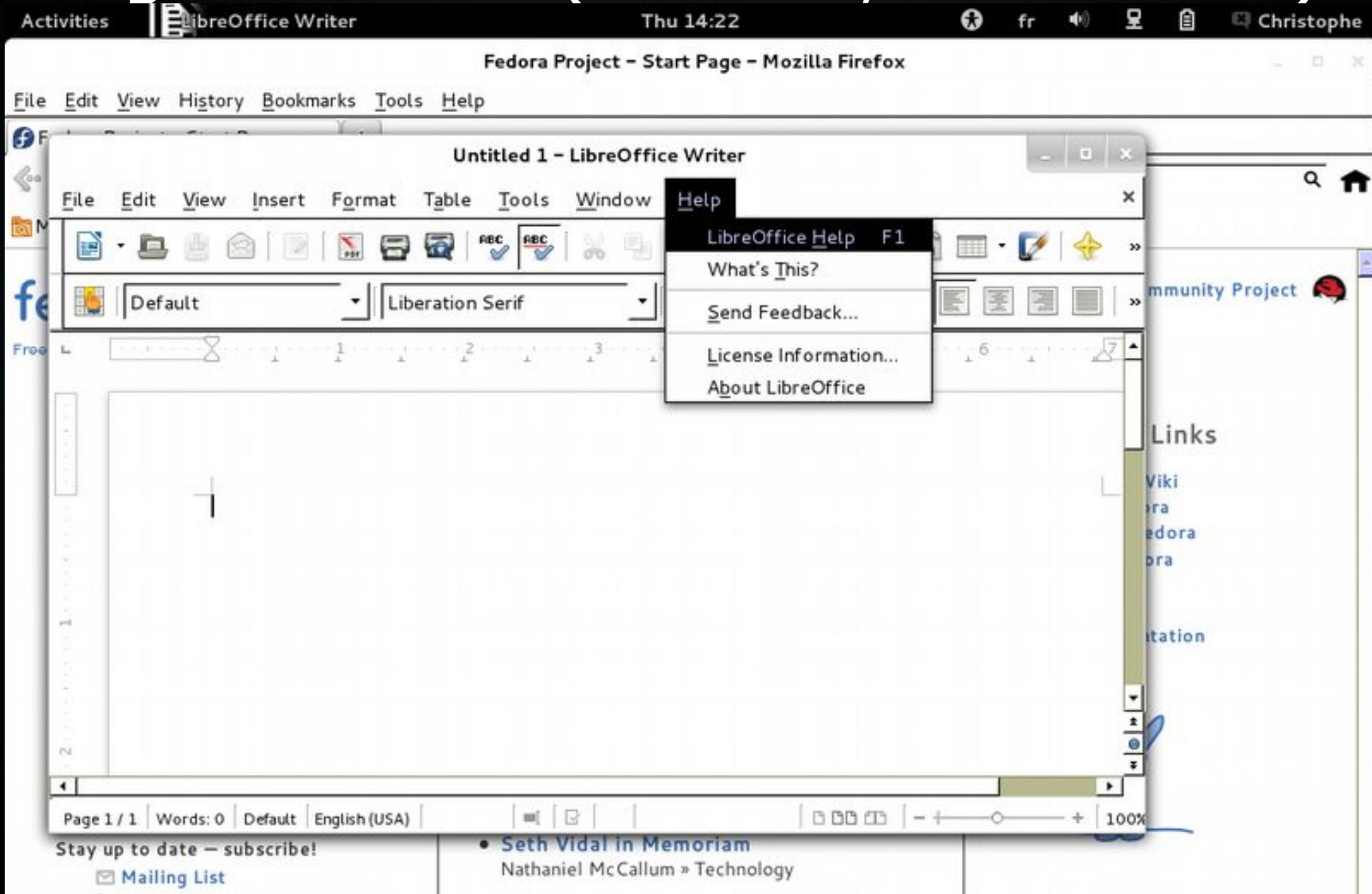


Library

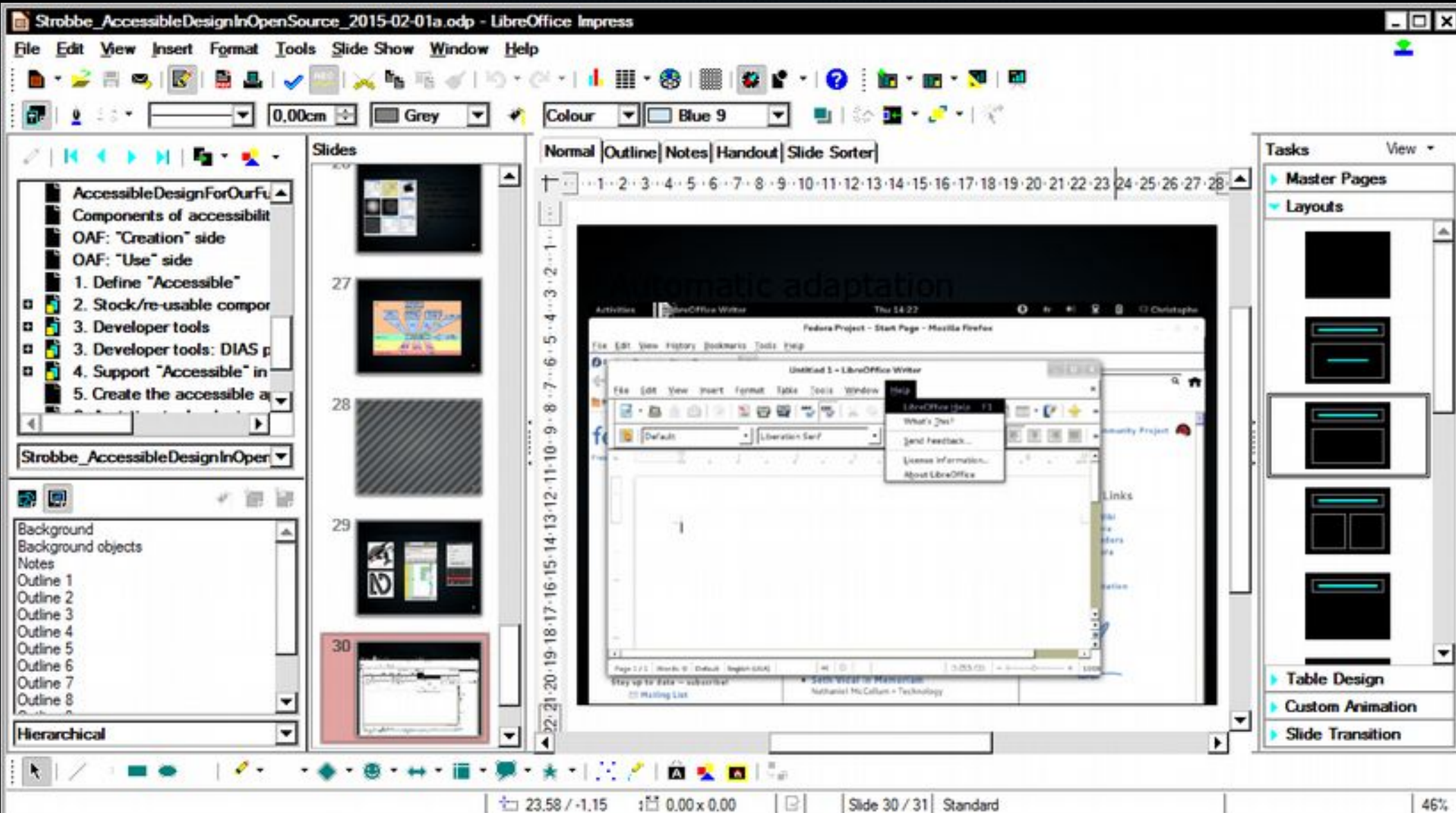


Demo

High contrast (GNOME, LibreOffice)



High contrast (Windows)



GPII & Design for All

- GPII does not assume that all applications are *universally* accessible
- GPII does not replace AT & accessibility features but relies on them
- GPII can choose the application(s) that best suit the user's needs

GPII & Cloud4all



GPII



- <http://gpii.net/>
- <http://www.cloud4all.info/>

感谢诸位的时间

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