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Edition 47

Editor's Desk

Dear friends,

Today knowledge has power. It controls access to opportunity and advancement-Peter Drucker

And I strongly believe that power is gained by sharing knowledge and not by hoarding it.

Happy Reading and sharing !!

Regards,
Bhavna Botta
connectspecial.in

From The Heart

Technology for Equal Empowerment

Imagine a world where everyone could be equally empowered. Even those differently-abled . A world, where technology could play a key role in shaping lives, making it more inclusive and easier. ***ARTILAB makes it possible.***

Tell us about the vision and mission of *ARTILAB*

The disability sector is not a homogeneous segment and remains very scattered across the length and breadth of nations. They are predominant and mostly unattended to in economically lower sections of society. These sections do not have a financial cushion in terms of insurance support and remain neglected and are expected to rely upon a good Samaritans to help them live with dignity. Thus making it hard to break away from this life of being "reliant upon" unless there are viable and affordable products that help this cause.

ARTILAB's vision is to nurture social ventures that possess great ideas and can in turn have these ideas evolve into the needed products.

How did *ARTILAB* evolve and who is the brain behind this

ARTILAB evolved from the vision of Mr. Mohan Sundaram and Mr. Pavan Kumar to build affordable and appropriate solutions to cater to the disabled community through innovation & technology.

In 2015 at the behest of The International Committee of the Red Cross (ICRC), they conducted Enable Makeathon - a 60-day hackathon (http://www.enablemakeathon.org) in Bengaluru from November 2015. This evolved out of a prolonged engagement of over 14 months running an experiment in a crucible format with a variety of partners.

This event produced 15 working prototypes in the loco motor challenge space. These prototypes were displayed at the Global Programme for Humanitarian Innovation and Impact (GPHI2) held at Lausanne in March 2016, attracting significant plaudits.

MOHAN SUNDARAM

President, APD Bangalore (NGO)
Advisor, Disability NGOs Alliance
Mentor, NSRCEL, IIMB
IIM Ahmedabad 1984

PAVAN KUMAR

Founder CEO, Workbench Projects
3D Prototyping device industry experience.
Makerspace pioneer and Maker Faire licence holder
MS Mech (Clemson)

That's phenomenal ,what was the impact

This whole innovation event was also studied by MIT's GO-LAB They noted that:*"There has never been a large concerted event of this sort which could possibly culminate into a movement that looks at specifically building solutions for this space.*

First, beyond idea generation (where "hackathons" often stop) the Enable Makeathon went a step further by placing deliberate emphasis on the physical creation of solutions—from ideation to impact. Second, the strategy of using global crowdsourcing enabled the team to draw upon a broad and diverse collection of entrepreneurs to bring life-changing innovations to persons living with disabilities across the globe. The Enable Makeathon was successfully executed; however, the process of planning and executing such an event stretched conventional processes, resources, and the individuals who supported it."

As a follow-on step to ensure impact, it was logical to create structured support to take these innovations to market. To engender this over the long term in a concerted fashion, the successful amorphous aggregate was transformed into an organisation. Thus, ARTILAB was born.

Great,How has the Journey been so far...

ARTILAB Foundation is a technology business incubator (TBI), supported by the Department of Science and Technology (DST), Govt of India. Set up in Bangalore in 2018, ARTILAB Foundation is a not-for-profit (Section-8) company.

ARTILAB envisions to incubate economically sustainable social ventures that wish to build affordable technology healthcare solutions for the disabled section of society in India and third world countries.

It is vital these ventures can stand on their feet, to be able to continue with research and innovation and at the same time reach out the needy with their solution offerings. ARTILAB offers its incubatees, technological/technical support towards prototyping and product development, as well as business support ranging from go-to-market strategies to organization structuring to financial planning.

ARTILAB has recently setup a 10,000 sq. feet infrastructure very close to the small-scale industrial estate that has good manufacturing facilities, a 60-seater accommodation capacity and a high end prototyping facility with high precision polyjet 3D printers, precision milling station, SMT PCB station, PCB fabrication, FABLAB etc.

Very inspirational and pioneering work ,Tell us about the start ups you have supported

ARTILAB has identified 8 promising start-ups and incubated them:

Rise Legs is a team of dedicated individuals making well-designed and cost-effective mobility aids for physically challenged individuals, including athletes.Rise legs has passed Army trials and is providing prosthetics to our Jawans.

TURNPLUS offers easy entry & exit into the front seat of a passenger car, for people with special medical conditions like, arthritis, knee & back issues, etc. Travel to work, airport & recreational activities now made easy in the comfort of your own car without any compromise on safety.TURNPLUS recently won the Social Alpha Assistive Tech Challenge.

Vembi Systems is developing technology aids that make STEM education accessible to visual impaired students.

Xfinito Biodesigns is looking to solve issues of accessibility and affordability by means of Customized Medical Device Developments with specific focus on Pain, Rehabilitation and Rare Diseases.

Nautilus Hearing, a new kind of hearing care company that is using best technologies to make Hearing Care Simple, Accessible and Reliable.

Spectra Innovations is developing a product for hands free usage of computers for locomotor disabled with facial muscles-based navigation and voice for dictation.

Brahmansh Technologies is developing affordable bone conduction actuators for use in hearing aids.

Sonant Technologiesis developing an innovative solution for communication between abled and speech and hearing impaired persons.

Thank you,We wish you great success in making technology available for all !

Access For All

Designing for accessibility is not that hard

uxdesign-.cc- Shared byJessica Ivins

Originally published at Access and Inclusion through Technology-**https://uxdesign.cc/designing-for-accessibility-is-not-that-hard-c04cc4779d94**

Digital accessibility refers to the practice of building digital content and applications that can be used by a wide range of people, including individuals who have visual, motor, auditory, speech, or cognitive disabilities.

There's a myth that making a website accessible is difficult and expensive, but it doesn't have to. Designing a product from scratch that meets the requirements for accessibility doesn't add extra features or content; therefore there shouldn't be additional cost and effort.

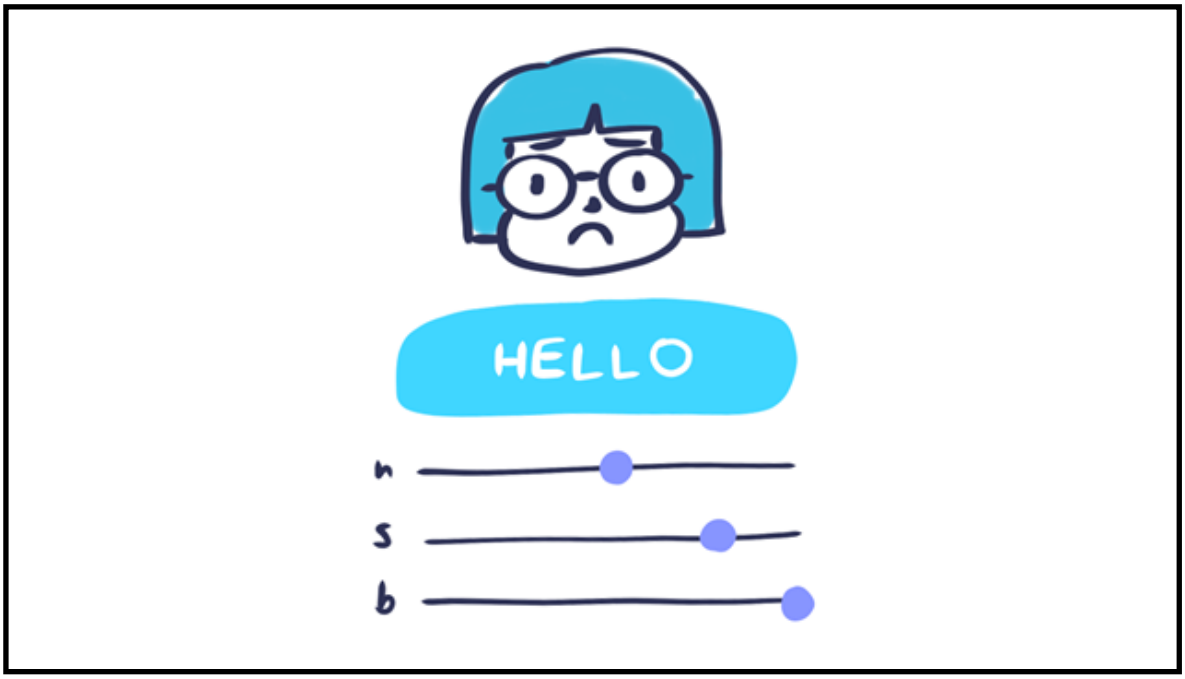
Some simple steps make your sites more accessible. But before we get started, let's talk about why that's important.

Why designing for accessibility?

As designers, there is a responsibility to make sure that everyone has access to what we create regardless of ability, context, or situation.

These seven guidelines are relatively easy to implement

Color contrast



Buttons with good color contrast are easier to read .

Picture description-The box shows a girl's face with hair in blue colour,black spectacles underneath HELLO is written in white on blue background button.

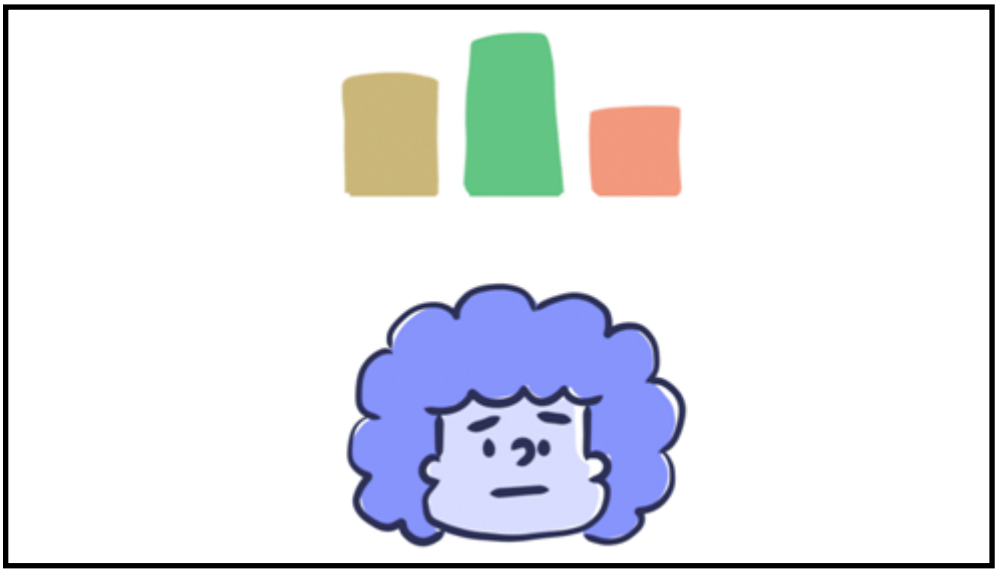
Color contrast is an often overlooked web accessibility problem. People who have low vision could find it difficult to read text from a background color if it has low contrast. So, it is critical to consider the sufficient contrast between text and backgrounds.

According to the**W3C**, the contrast ratio between text and its background should be at least 4.5 to 1 (conformance level AA.) If your type is at least 18 pt or 14 pt bold, the minimum contrast ratio drops to 3 to 1.

Some tools will help check this quickly. The Contrast app orWebAIM color contrast checker.

This tool will calculate the score for both regular and larger text sizes in different conformance levels (A, AA, AAA.)

2. Don't use color alone to make critical information understandable



Rina gets happy when graphs are colorblind friendly!

Picture description-A happy face as the bar diagram at the back ground is depicted in brown,green and pink colours

When you're communicating something important, showing an action, or prompting a response, don't use color as the only visual cue. People with low visual acuity or color blindness will have a hard time understanding your content.

Try to use an indicator other than color such as text labels or patterns. Elements with more complex information like charts and graphs can be especially hard to read when you only use color to distinguish the data. Use other visual aspects to communicate information like shape, labels, and size.

Use an app like[Color Oracle](), which shows you in real time what people with common color vision impairments see.

3. Design usable focus states

Focus states are easy to navigate.

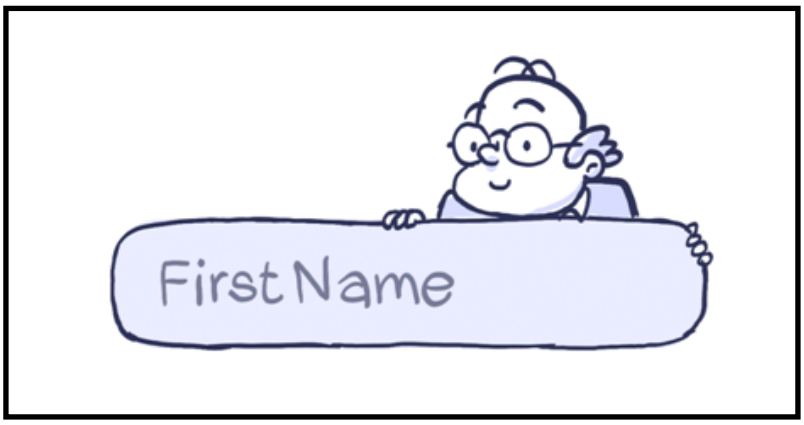
Picture description -A prosthetic hand touching a button which is highlighted by darker blue outline

Have you noticed the blue outlines that sometimes show up around links, inputs, and buttons?

These outlines are called focus indicators.Focus indicators help people know which element has the keyboard focus and help them understand where they are when navigating your site.

These are used by people who are blind and require screen readers, individuals with limited mobility,individuals who have suffered injuries like carpal tunnel, and power users who prefer this type of navigation.

4. Use labels or instructions with form fields and inputs



Mr. Ravi keeps trying to turn a placeholder text into a label.

Picture description - A person holding a label with "FIRST NAME "written on it

Using placeholder text as labels are one of the biggest mistakes when designing a form. Placeholder text is usually gray and has low contrast, so it's hard to read.

5. Write useful alternative text for your images and other non-text content

People with low vision often make use of screen readers to "hear" the web. These tools convert text to speech so that the person can hear the words on a site.

Try to describe what's happening in the image, and how it matters to the story,rather than just saying something like "picture," context is everything.

Robin found a new friend in a picture.

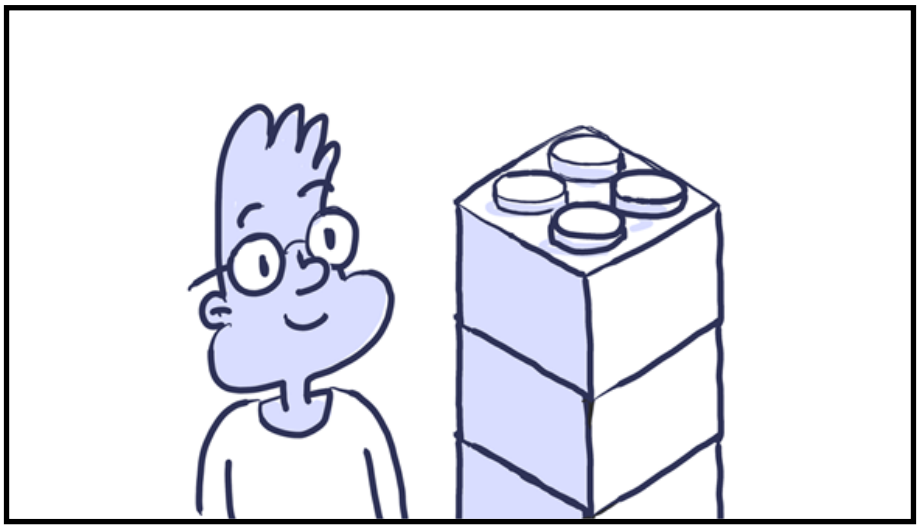
Picture description- A boy wearing sunglasses looking at a wall hanging which has a picture of a horse eating cereals with a spoon and comical saying -"I'm a horse eating cereal"

If the image is purely decorative or if it creates redundancy because the surrounding context already explains the content. Then adding an empty <alt> attribute will make screen readers skip it.

6. Use correct markup on your content

Headings mark where the content starts — they’re tags given to text to define its style and purpose. Headings also establish the hierarchy of the content of the page.

Titles with big font sizes help a reader understand the order of the content better. Likewise, screen readers also use heading tags to read content. This way,people with low-vision get an overview of the page by reading each heading in a hierarchal flow.



Ram always wanted to be an architect.
Picture description-A smiling face looking at a pillar

It's important to use proper structural elements when you develop a site. HTML elements communicate to the browser what kind of content they contain and how the browser should render or treat that content. The components and structure of a page are what arranges an accessibility tree. This tree is what powers screen readers which are used by people who are blind so they can "listen" to a page.

7. Support keyboard navigation

Keyboard accessibility is one of the most critical aspects of web accessibility. People with motor disabilities, blind people that rely on screen readers, people that don't have precise muscle control, and even power users are dependent on a keyboard to navigate content.

Giri navigates with a keyboard while “hearing” the web.

Picture description -A person navigating with keyboard with voice over option.

As you navigate through a page, the order of the interactive elements is essential, and the navigation must be logical and intuitive. The tab order should follow the visual flow of the page: left to right, top to bottom — header, main navigation, content buttons and inputs, and finally the footer.

A good practice is testing your site only using a keyboard. Use the *Tab* key to move through links and forms. Test using the *Enter* key to select an element. Verify that all the interactive components are predictable and in order. If you can navigate through all your site without a mouse, you’re in a good spot!

Last, but not least. Be careful with the size of your navigation — this includes the number of links and the length of the text.

Tabbing through long menus may be demanding for people with motor disabilities. And listening to lengthy links can be cumbersome for people that use screen readers—try to be concise.

Providing ARIA landmarks or HTML5 structural elements like <main> or <nav> will make navigation easier.

These seven guidelines are a great start, and if you want to do more to make your product more accessible-

Get an Accessibility Audit.

Appoint an Auditor.

Make accessibility part of your design research.

For comments please write to
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For sharing log on to
connectspecial.in