CERN Search Portal - Support For Mobile Devices

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Mehdi Golbaz

- I was born in Iran.
- I studied Mathematics and Physics (High School).
- I studied bachelor of Architectural Engineering.
- I have had two personal exhibitions (Conceptual Illustrations).
- I worked in Architecture Field.
- Master of science in Engineering in Human Computer Interaction (HCI), at Salzburg University & FH Salzburg (joint master).
What I am doing at CERN Openlab

- I started CERN OpenLab Summer Student Program at the first week of July 2021.
- My internship started by setting up my local system with necessary backend tools (INVENIO).
- I have learned and practiced Front-End Developing (React Library) by watching and reading tutorials.
- I am working with my team on CERN Search Portal, to redefine, redesign and develop those based on The User Friendliness & Mobile Responsiveness rules.
- I reviewed Guidelines for CERN websites at: https://design-guidelines.web.cern.ch/guidelines/guidelines-cern-websites and applied them to the new Designs, and also created a Consistent Design between different CERN Web Pages.
- I am getting in practice Figma app to design, and React.JS Library & Semantic-UI to develop and implement codes.
The Importance of a Mobile Responsive Website

● There were around **3.5 billion smartphone** users in the world by **2020**. This equates to **45 percent** of the world's population. People used over **9000 different devices** to access the internet in 2019.

● The percentage of **mobile users** is increasing every day.

● Search engine optimization (**SEO**) & **Google**’s better ranking.

● Responsive design is easier to interact and more readable (**Better User Experience**).

● **Cost effectiveness** (One Platform for Every Device).

● Ease in management in the final products.

https://www.ironpaper.com/webintel/articles/importance-mobile-responsive-website
https://www.tributemedia.com/blog/why-mobile-responsive-web-design-is-important
https://www.webfx.com/web-design/why-responsive-design-important.html
https://www.browserstack.com/guide/ideal-screen-sizes-for-responsive-design
Worldwide Screen Resolution Stats (Jan 2020 – Jan 2021)

- The following are the most commonly used **Mobile, Desktop, and Tablet** resolutions:

  - 1920×1080 (8.89%)
  - 1366×768 (8.44%)
  - 360×640 (7.28%)
  - 414×896 (4.58%)
  - 1536×864 (3.88%)
  - 375×667 (3.75%)

[Figure 0: Variety of different screen sizes](https://www.browserstack.com/guide/ideal-screen-sizes-for-responsive-design)

[https://www.inovex.de/de/blog/usability-guideline-mobile-web-views/](https://www.inovex.de/de/blog/usability-guideline-mobile-web-views/)
The percentages of users on Desktops, Mobiles or Tablets:

![Graph showing device market share]  

**Figure 1:** Shares of percentages of users & different devices

https://gs.statcounter.com/vendor-market-share/mobile
Some Examples

A Mobile-Responsive Web Application on the Mobile Devices.

https://www.google.com/
https://home.cern/
https://www.newyorker.com/
The Problems (Mobile Friendliness)

A not Mobile-Responsive Web Application on the Mobile Devices.

https://search.cern.ch
The Problems (Web Responsiveness)

Users Feeling:

https://dev-cern-search-ui.web.cern.ch/?q=&sort=bestmatch&order=desc&p=1&s=50
What is a breakpoint in responsive Design?

-A breakpoint is the “point” at which a website's content and design change in a certain way to deliver the greatest possible user experience in responsive design. Because of the enormous variety of devices on the market, there will be always challenges for designers and developers to find and fix those breakpoints.

Defining the main breakpoints?

-For developers, working with Media Query is a challenge, or CSS Libraries.
-For designers, the design and how it should look on different websites/screens is the main challenge.

To conduct Heuristics Evaluation to define Usability Problems
First Step: Search Portal Landing Page - Desktop Version

Figure 3: The Old Landing Page of CERN Search

Figure 4: The New Landing Page Designed and Implemented
Second Step:

Search Portal Landing Page

-Mobile Version

Figure 5: High Fidelity Wireframes
Third Step: Search Portal Results-Mobile Version

Figure 6: ScreenShot & Low Fidelity of CERN Search Result

Figure 7: Low Fidelity Mockups of CERN Search Result- Mobile Version
What Next: CSS Media Query

Media queries are an important part of **responsive web design** because they allow you to create different layouts depending on the size of the viewport.

Future Work at CERN Openlab

- I have extended my internship to the end of October 2021
- I will keep working on the implementation of High Fidelity Wireframes until then

https://inveniosoftware.github.io/react-searchkit/
https://inveniosoftware.org/
Our Project is selected as the overall CERN Webfest 2021 winner

Thank You

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