Heuristic Evaluation Report: hackernews.com

Christian Bolinas

University of Pittsburgh

Introduction

This will be an evaluation of `hackernews.com`, a "social news" (external links and related discussion) website focusing on tech, programming, and in particular tech entrepreneurship. Hacker News is an arm of Y Combinator, a prominent tech venture capital firm/startup incubator.

The purpose of `hackernews.com` is to provide a place for "techies," the target audience– software developers, designers, and other tech industry figures and enthusiasts to share links and discuss topics relevant to that industry. The audience aims to increase their knowledge and discuss relevant topics with other like-minded individuals.

Purpose

The purpose of Hacker News is simple: it aims to provide an internet-based space where "techies," whom many of which are professional or amateur software developers, can gather, share, and discuss links. Links and comments in their related discussion boards are "voted up" based on their quality, allowing users to see content the community collectively rated to be of higher quality before ones of lower quality. Hacker News aims to be simple and "get out of the way," and its design reflects that.

Methodology

This evaluation of Hacker News used a heuristic evaluation tool developed by the lab of Dr. Stephen Quigley of the University of Pittsburgh. Additional tools used include two popular browsers (Chrome, Firefox) and a popular screen-reader extension thereof, called "Screen Reader for Google Chrome." Criteria the websites were evaluated on were as follows:

Design/Usability Heuristics:

1. Visibility of system status
2. Match between system and real world
3. User control and freedom
4. Consistency and standards
5. Error prevention
6. Recognition rather than recall
7. Flexibility and efficiency
8. Aesthetic and minimalist design
9. Error recognition and recovery
10. Help and documentation

Accessibility Heuristics:

1. Layout
2. Design Elements
3. Color
4. Writing
5. Font and Text
6. Text Organization
7. Images
8. Media
9. Buttons and Links
10. Navigation
11. Forms
12. Keyboard Navigation

Findings

Our findings according to the above criteria follow.

Design Heuristic: Visibility of system status

The system status is clearly visible. Since the website's pages are rendered on the server and instantly delivered to the client (user computer/phone/etc browser), the "loading" status of the page is clearly and prominently displayed. Once the page is loaded, there's no more responsiveness to track until a link is interacted with.

Match between system and real world

The system clearly matches common conventions of how websites work– links are displayed with bigger fonts than their details as a vertical list, intra-page navigation (up and down that list) is accomplished by browser scrolling functionality, and a navigation bar is prominently displayed at the top of the page.

User control and freedom

The aforementioned navigation bar at the top of the page, as well as link-centric user experience, provides ready, familiar navigation functionality.

Consistency and standards

As said before, the aforementioned navigation bar and link-centric UX are congruent with user expectations of websites.

Error prevention

The simple design of the website (it could have been built 10-20 years ago, before the complexity of client-side/JavaScript/"reactive" webpages) is fault-tolerant by design due to its lack of complexity and coupling. Attempting to access a nonexistent webpage is met with a simple "unknown" printed in plain text.

Recognition rather than recall

Again, the aforementioned navigation bar and link-centric UX are congruent with user expectations of websites.

Flexibility and efficiency

As the website's user experience design is "barebones," users are limited only by their browser's functionality, affording them its inbuilt experience. For example, keyboard shortcuts for navigation are well-supported, because browsers support them.

Aesthetic and minimalist design

The website prominently displays a navigation bar at the top, matching user expectations, and links are displayed in a left-justified list from the top to the bottom of the page. No superfluous elements are present– a single concept is corresponds with a single visual element.

Error recognition and recovery

Given that Hacker News's content is displayed as HTML/CSS, without reactive state, there aren't errors from the website's end. Their only issue is their 404 (page not found) error, which displays "unknown" rather than "page not found."

Help and documentation

As said before, the aforementioned navigation bar and link-centric UX are congruent with user expectations of websites. Additionally, due to its "techie"-focused user base, Hacker News needs to cater to new computer users less than a general public-focused website.

Accessibility Heuristic: Layout

We tested this website with a screen reader called "Screen Reader for Google Chrome," which is well-used and well-reviewed. The website's layout has clearly defined HTML elements that the screen reader can easily use, and it is able to parse them effectively and read out their content clearly.

Design Elements

A simple inspection of pages' sources reveals that this website uses "standard" HTML elements.

Color

The website uses the orange-accented theme of its parent Y Combinator. Backgrounds are white and beige, with the navigation bar accented in orange, with black links and text to clearly contrast with other colors.

Writing

Despite being a "techie"-focused website, the website (itself, not necessarily technical content displayed within) uses no jargon– its menu bar displays "new, past, comments, ask, show, jobs, submit" which clearly display the functionality of the associated links, with the only bit of jargon being "points" to represent the amount of users that've clicked the "good article" (upvote) button.

Font and Text

This website uses a Verdana, a readable font similar to defaults on all patterns. It being not-monospace (unlike coding fonts) reduces eyestrain when reading prose. The text is black, which contrasts well with the light background.

Text Organization

A simple inspection of pages' sources reveals that this website uses "standard" HTML elements, which are hierarchical, and their display (via CSS) on the page displays this, with the navigation prominently at the top of the page, and a list of links displayed vertically, ordered by the amount of "positive votes."

Images

The website does not display images, eliminating the need for alt text and other accessibility concerns.

Media

This website does not itself display accessible alternative media for neurodiverse learners, as it is a primarily a discussion-based link aggregator– it's about other pages.

Buttons and Links

Links and buttons use inbuilt HTML functionality, making them as error-tolerant as browsers are (and browsers are well-tested.) Links and buttons display where they go/what they do as text on the link/button itself.

Navigation

The menu bar is prominently displayed at the top of the page for all pages, which have the same layout. Navigation is accessible by clicking, browser-based keyboard shortcuts, and any other means for navigation a browser supports.

Forms

Forms are accessible, using only vanilla/unstyled HTML elements, and CAPTCHA is not used in registration.

Keyboard Navigation

As the website is vanilla HTML with minimalistic CSS, all keyboard shortcuts that a user's browser supports are supported by Hacker News.

Recommendations: High-Priority Issues

We found no high-priority issues present in Hacker News's design– it adheres to UI/UX design principles almost in totality.

Medium-Priority Issues

Again, we found no high-priority issues present in Hacker News's design– it adheres to UI/UX design principles almost in totality.

Low-Priority Issues

We found two low-priority issues with the website. The first is that on "login," or on a (perhaps a cookie-tracked or otherwise) user's first visit, a brief introduction to the website's functionality could be displayed. The next is that the website could display thumbnail images, to aid understanding in neurodiverse users, similar to how `reddit.com` did before its recent redesign.

Conclusion

It is common wisdom that software should be only as complex as its functionality requires (and only after superfluous functionality has been pruned). The majority of websites violate this principle. Despite being for "techies," HackerNews follows this principle, as do the majority of websites and applications used by software developers, amateur or professional, and we recommend that web designers follow their lead, in service of the ultimate goal of making websites and software that people find satisfying to use.

Appendix

Heuristic Evaluation Tool:

https://github.com/christianbolinas/heuristic-eval/
blob/main/usability-accessibility.md