Conclusion

Conclusion

Respondents took this survey with the promise that their answers will influence how browser vendors prioritize feature development. That work is underway.

Google

"The MDN DNA report bridges a critical gap in understanding developer needs: replacing guesswork with actionable feedback. We will use it in 2021 to focus our work on improving the areas of the web platform that cause the most pain. Since the report shows that it's not just bugs or gaps in key areas, but also interoperability of those areas across browsers, we will work closely with other browser vendors to drive improvements across the board."

- Chris Harrelson, Senior Staff Software Engineer and Blink Rendering Lead

Microsoft

The Edge team used the Web DNA survey results from 2019 to inform their product roadmaps, understand the current needs of web developers, and to discover unmet needs. This has been a valuable data point for their platform, apps, and tools teams to direct planning and inform customer research. The results underscored the importance of improving compatibility solutions and understanding new tooling opportunities, while reinforcing the general principles behind their choice to move Microsoft Edge to Chromium, collaborate in open source, and ship across platforms. They're eagerly digging into the 2020 results and look forward to continuing to improve their plans based on this year's data.

Mozilla

"The MDN DNA report provides the Web Platform team at Mozilla with critical insight into how we can improve the platform for authors. The results of the survey highlight the importance of cross-browser compatibility, an area which we regard as critical for the health of the web. We will use the survey data to inform the 2021 planning for Gecko, Firefox's rendering engine, and help us focus our efforts on those areas which will have the biggest impact on web developers."

-Andrew Overholt, Senior Director of Engineering, Web Platform

Methodology

Methodology

MaxDiff

This year, we took a more thorough data analysis approach by employing data science best practices. This includes:

- Using Python to code, clean, and visualize the data
- Employing the Choice-Based Conjoint/Hierarchical Bayes (CBC/HB) standalone estimation module from Sawtooth Software to estimate MaxDiff utilities
- Eliminating inconsistencies, e.g., in different sets, a respondent may see 'Determining the root cause of a bug' and 'Discovering bugs not caught during testing.' In one set, they may indicate that 'Determining the root cause of a bug' is more frustrating; in a different set, they switched the order. After HB estimation, we utilize a statistic called Root Likelihood (RLH) to determine cutoffs for inconsistent/random responders, using a set of simulated random data to help determine the proper cutoff. Respondents failing to exceed the minimum RLH are removed from further analysis.
- Eliminating speeders, respondents who move through the survey in an impossibly short amount of time. We calculate the time of completion and drop anybody who is < ½ the median completion time, AND who also have an RLH < 0.5 (RLH ranges from 0 to 1, 1 being better). So in addition to the inconsistent responders removed above, we remove speeders who fail to meet a higher consistency threshold as well. We don't remove speeders who are consistent in their answers, in other words.

Needs Segmentation

To uncover the segments, we utilized four different unsupervised machine learning techniques (kmeans, hierarchical clustering, Archetype analysis, and k-prototypes), and evaluated multiple possible solutions with differing numbers of segments (over 40 solutions evaluated overall).

For each technique, we evaluated the candidate solutions using various statistical criteria, choosing a best candidate for each of the four approaches. These solutions were then profiled and evaluated more artistically on which told a better story. The solution we settled on and included in this report comes from a k-prototypes model with 7 clusters or segments.


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