Web application performance metrics

How to measure Web applications

- Use browser provided functionality (dev tools: performance + network)
- APIs from different provider (Google, Mozilla, Node, …)
- Online tools
- Custom written tools

A List of the collected metrics

- **User Satisfaction / Apdex Scores** - uses a mathematical formula in order to determine user satisfaction. (how fast does the page react)
- **Time to First Byte** - measures the time it takes to render the application on end-user devices
- **Time to First Paint** (FCP) - measures how long it takes for the initial pixels to show on the screen
- **Speed Index** - when and what the visitor sees - sensitive to the quality of the web connection and the size of the viewpoint (user experience, adaption to the screen size)
- **Time to Interactive** - measures how much time passes before a web page is fully interactive
- **DNS Lookup Time** - measures the time it takes for a domain lookup to occur while the browser loads the page
- **Error Rate** - tracks the percentage of request issues you incur in relation to the overall number of requests
- **Peak Response Time** - measures the longest response time for a total number of requests that travel across the server

Example

Time to First Paint - First Contentful Paint (FCP):

- Refers to how long it takes for the initial pixels to show on the screen → tell the visitor that the content will soon load.
- Indicates how much time passes before content defined in the DOM, as text or an image, is rendered.
- The first meaningful point out when all the website content is loaded and ready to offer the user meaningful information.

Sources

https://www.metricfire.com/blog/top-8-web-application-performance-metrics/

https://developer.mozilla.org/en-US/docs/Learn/Performance/Measuring_performance

https://googlechrome.github.io/lighthouse/scorecalc/#FCP=510&SI=690&FMP=4000&TTI=7300&FCI=6500&LCP=730&TBT=170&CLS=0.15&device=desktop&version=10