aminajadulu.com

Methodology

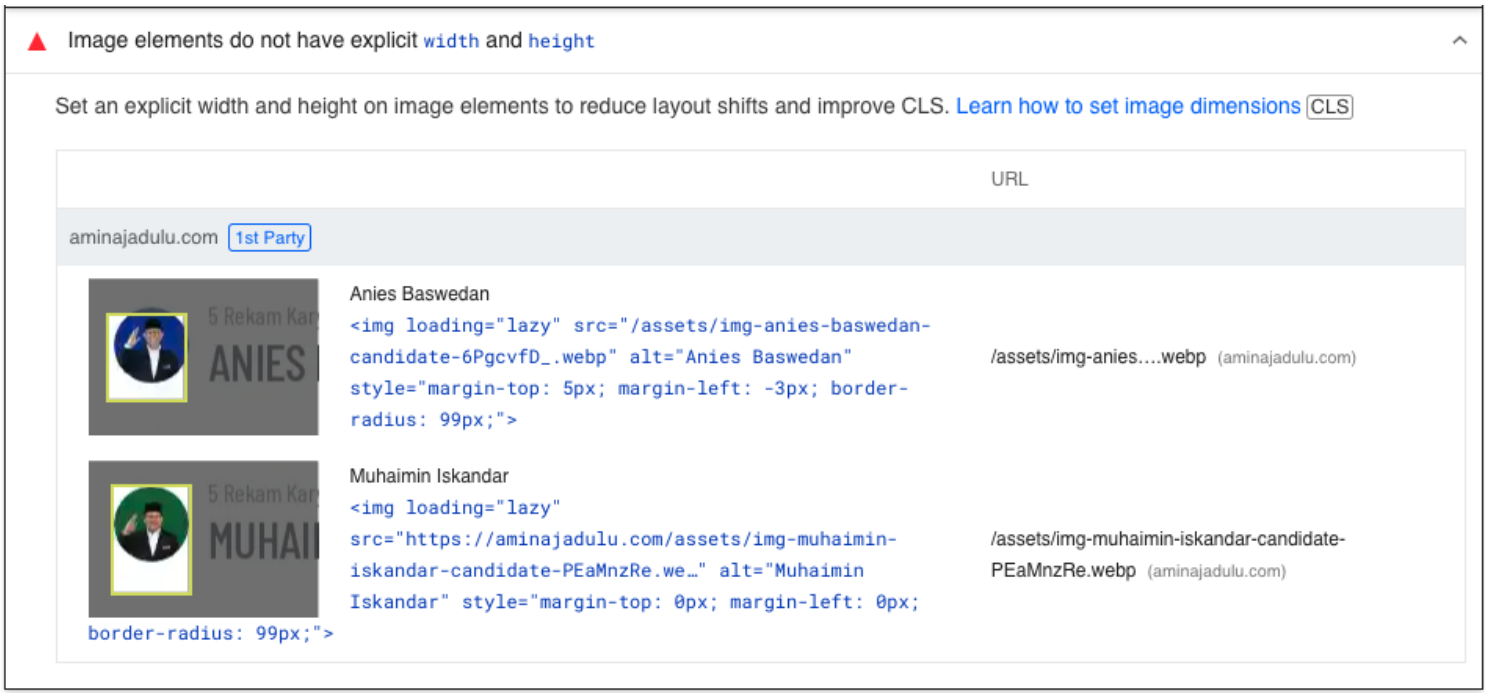
I conducted this assessment by running diagnostics from PageSpeed Insights upon these pages:

- https://pagespeed.web.dev/analysis/https-aminajadulu-com/yb8lvdorlh
- https://pagespeed.web.dev/analysis/https-aminajadulu-com-about-anies-baswedan/b2llh79q5q
- https://pagespeed.web.dev/analysis/https-aminajadulu-com-about-anies-baswedan-biografi/u3nx7stb4m
- https://pagespeed.web.dev/analysis/https-aminajadulu-com-kemandirian-pangan-1-1/640v816aes

Recommendations

Based on the diagnostics results, we can conclude some low-hanging fruits that are addressable immediately. Some of the screenshots below only indicates some instances of the problem. Some problems occurred multiple times in different pages. So feel free to check which elements/images that are problematic through the links above.

1. Image sizes

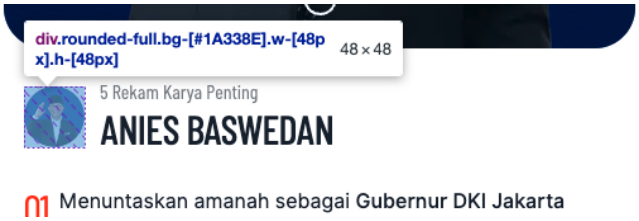


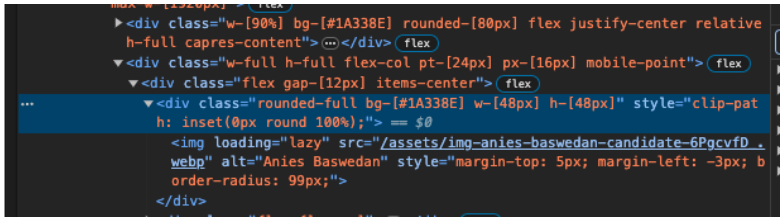
Problem

Image without dimensions may cause Content Layout Shifts.

Solution

Add `width="48" height="48"` attributes according to the implemented styling.






```
<img loading="lazy" src="/assets/img-anies-baswedan-candidate-6PgcvfD_.webp" alt="Anies Baswedan" style="margin-top: 5px; margin-left: -3px; border-radius: 99px;" width="48" height="48">
```

2. Lazy-loading above-the-fold images

▲ Largest Contentful Paint image was lazily loaded

Above-the-fold images that are lazily loaded render later in the page lifecycle, which can delay the largest contentful paint. Learn more about optimal lazy loading. LCP

Element

AMIN 2024

```
<img src="/assets/illustration-amin2024-mobile-u20zYTCT.webp" width="1216" height="565" id="illustrationAmin2024" alt="AMIN 2024" class="img-banner h-[500px] min-[769px]:max-h-[510px] max-[768px]:max-h-[500px]" loading="lazy">
```

Problem

The `AMIN 2024` image should not have been lazy-loaded because it's shown above-the-fold.

Solution

1. Remove the `loading="lazy"` attribute only for that particular image. Keep it on any other images that are not visible immediately on top of the page.
2. Add `rel="preload"` attribute to initiate the loading earlier.

```
<img src="/assets/illustration-amin2024-mobile-u20zYTCT.webp" width="1216" height="565" id="illustrationAmin2024" alt="AMIN 2024" class="img-banner h-[500px] min-[769px]:max-h-[510px] max-[768px]:max-h-[500px]" rel="preload">
```

3. Font loading

■ Eliminate render-blocking resources — 0.52s

Resources are blocking the first paint of your page. Consider delivering critical JS/CSS inline and deferring all non-critical JS/styles. Learn how to eliminate render-blocking resources. FCP LCP

URL	Transfer Size	Potential Savings
cdnfonts.com	**2.0 KiB**	**940 ms**
/css/inter?display=swap (fonts.cdnfonts.com)	1.0 KiB	790 ms
/css/barlow-condensed?display=swap (fonts.cdnfonts.com)	1.0 KiB	150 ms

Serve static assets with an efficient cache policy — 10 resources found

A long cache lifetime can speed up repeat visits to your page. Learn more about efficient cache policies.

URL	Cache TTL	Transfer Size
cdnfonts.com		525 KiB
...19795/Inter-SemiBold.woff (fonts.cdnfonts.com)	31d	125 KiB
...19795/Inter-Medium.woff (fonts.cdnfonts.com)	31d	125 KiB
...19795/Inter-Regular.woff (fonts.cdnfonts.com)	31d	114 KiB
...15359/BarlowCondensed-Bold.woff (fonts.cdnfonts.com)	31d	41 KiB
...15359/BarlowCondensed-Medium.woff (fonts.cdnfonts.com)	31d	39 KiB
...15359/BarlowCondensed-Regular.woff (fonts.cdnfonts.com)	31d	39 KiB
...15359/BarlowCondensed-Light.woff (fonts.cdnfonts.com)	31d	39 KiB
/css/barlow-condensed?display=swap (fonts.cdnfonts.com)	31d	1 KiB
/css/inter?display=swap (fonts.cdnfonts.com)	31d	1 KiB
Cloudflare Utility		7 KiB
/beacon.min.js (static.cloudflareinsights.com)	1d	7 KiB

Problem

Fonts are a part of the critical rendering path. Downloading them from external hostnames may slow down the page due to the additional network overhead cost imposed through the HTTP/2 handshake.

```
<link href="https://fonts.cdnfonts.com/css/inter?display=swap" rel="stylesheet">
<link href="https://fonts.cdnfonts.com/css/barlow-condensed?display=swap" rel="stylesheet">
```

Solution

1. Copy those files to the `public` directory and serve them from the same host.
2. If possible, reduce the font sets to a smaller Unicode Blocks/Glyphs, e.g. `Latin` only, instead of loading the whole set that includes unnecessary characters such as `Greek` and `Cyrillic`.
3. Add `rel="preload"` attribute to initiate the loading earlier.
4. Add a long `Cache-Control` headers while serving the font to speed up subsequent loading since it won't change in the near future, e.g. `public,max-age=31536000,immutable`.

```
<link as="font" crossorigin="anonymous" href="/fonts/inter-var-latin.woff2" rel="preload" type="font/woff2">
```

Here's a reference implementation of the same technique in WargaBantuWarga:
https://github.com/kawalcovid19/wargabantuwarga.com/pull/694

```
27
28 + [[headers]]
29 +   for = "/fonts/inter-var-latin.woff2"
30 +   [headers.values]
31 +     Cache-Control = "public, max-age=31536000, immutable"
32 +
33   [[headers]]
34     for = "/_next/static/*"
35     [headers.values]
```

Viewed

Viewed

Viewed

```
7            <Head>
8              <meta charSet="UTF-8" />
9              <meta content="ie=edge" httpEquiv="X-UA-Compatible" />
10 +           <link
11 +             as="font"
12 +             crossOrigin="anonymous"
13 +             href="/fonts/inter-var-latin.woff2"
14 +             rel="preload"
15 +             type="font/woff2"
16 +           />
17           </Head>
18           <body>
```

4. Font rendering

▲ Ensure text remains visible during webfont load

Leverage the `font-display` CSS feature to ensure text is user-visible while webfonts are loading. Learn more about `font-display`. FCP LCP

URL	Potential Savings
cdnfonts.com	**300 ms**
...15359/BarlowCondensed-Regular.woff (fonts.cdnfonts.com)	50 ms
...15359/BarlowCondensed-Medium.woff (fonts.cdnfonts.com)	40 ms
...15359/BarlowCondensed-Light.woff (fonts.cdnfonts.com)	30 ms
...19795/Inter-Regular.woff (fonts.cdnfonts.com)	40 ms
...19795/Inter-SemiBold.woff (fonts.cdnfonts.com)	50 ms
...19795/Inter-Medium.woff (fonts.cdnfonts.com)	40 ms
...15359/BarlowCondensed-Bold.woff (fonts.cdnfonts.com)	40 ms

Problem

While the font is still loading, the text will be invisible, causing a flash of invisible text (FOIT).

https://developer.chrome.com/docs/lighthouse/performance/font-display/?utm_source=lighthouse&utm_medium=lr

Solution

Add a `font-display: swap;` property to the `@font-face` selector in the CSS file.

```
@font-face {
  /* ... */
  font-display: swap;
}
```

Example: https://github.com/kawalcovid19/wargabantuwarga.com/blob/71f6bda0c9a3965edf5daad92205b9648072fb15/styles/globals.css#L10

Mid-term improvements

Some improvements require more significant efforts that might not be addressable in the short terms, but they are worth mentioning.

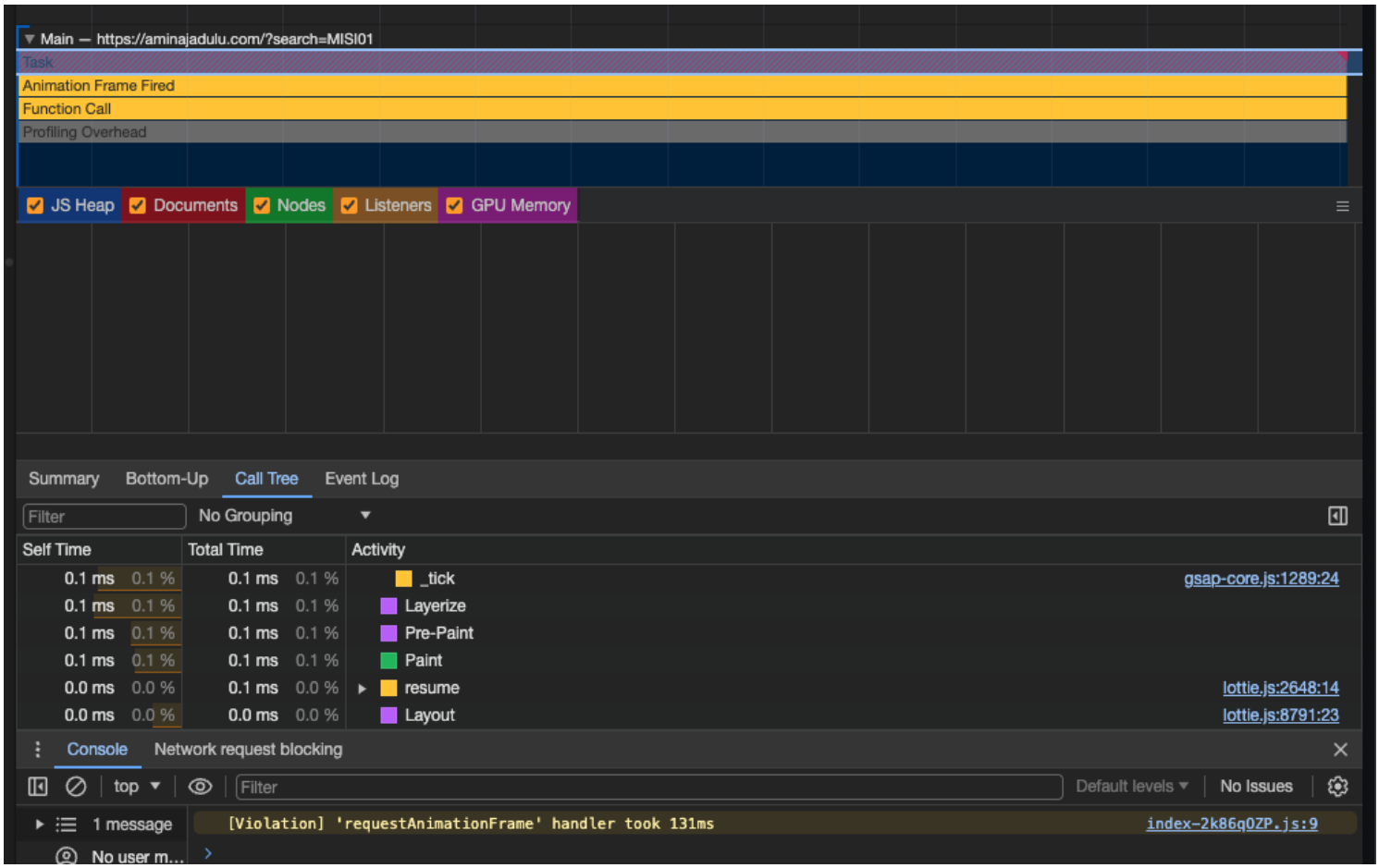
1. Usage of Lottie as animation

Reduce unused JavaScript 0.76s

Reduce unused JavaScript and defer loading scripts until they are required to decrease bytes consumed by network activity. Learn how to reduce unused JavaScript. LCP

Show 3rd-party resources (1)

URL	Transfer Size	Potential Savings
aminajadulu.com 1st Party	**129.9 KiB**	**63.3 KiB**
/assets/vendor-axmYS-1-.js (aminajadulu.com)	129.9 KiB	63.3 KiB
…lottie-web/build/player/lottie.js	85.0 KiB	53.1 KiB
…@vue/runtime-core/dist/runtime-core.esm-bundler.js	15.2 KiB	2.7 KiB
…vue3-lottie/dist/vue3-lottie.es.js	8.7 KiB	2.1 KiB
…vue-router/dist/vue-router.mjs	7.6 KiB	2.0 KiB
…@vue/runtime-dom/dist/runtime-dom.esm-bundler.js	3.4 KiB	1.2 KiB
Google Tag Manager Tag-Manager	**91.3 KiB**	**31.5 KiB**
/gtag/js?id=G-TE2N18R08B (www.googletagmanager.com)	91.3 KiB	31.5 KiB



Problem

CSS animation has gotten so good nowadays. I understand the benefits of using Lottie for animation due to its interoperability with design tools. However, it comes with some performance trade-offs as shown in the above screenshots where the `gsap` JavaScript animation dependency deferred `requestAnimationFrame` handler as long as `131ms` where the ideal number for a smooth animation is `16.7ms` per frame.

Solution

1. As a start, split the JS bundle to allow deferring some scripts that are not required when kickstarting the app. e.g., split the animation-related JS bundle and add an `async` or `defer` attribute to the `script` tag.
2. If there is more bandwidth to replace the JavaScript-heavy animation with a handwritten CSS animation keyframes, I believe it would improve the website's performance, especially when scrolling through content on low-end devices.

2. Reduce JavaScript execution time

▲ Reduce JavaScript execution time — 9.6 s

Consider reducing the time spent parsing, compiling, and executing JS. You may find delivering smaller JS payloads helps with this. Learn how to reduce Javascript execution time. TBT

☑ Show 3rd-party resources (2)

URL	Total CPU Time	Script Evaluation	Script Parse
Unattributable	**12,272 ms**	**7,505 ms**	**0 ms**
`Unattributable`	12,272 ms	7,505 ms	0 ms
aminajadulu.com 1st Party	**2,649 ms**	**1,631 ms**	**9 ms**
/assets/vendor-axmYS-1-.js (aminajadulu.com)	1,175 ms	1,153 ms	3 ms
/assets/index-2k86qOZP.js (aminajadulu.com)	551 ms	115 ms	1 ms
https://aminajadulu.com	345 ms	13 ms	5 ms
/assets/index-uRRac6b4.js (aminajadulu.com)	139 ms	93 ms	0 ms
/assets/footer-PMtb928q.js (aminajadulu.com)	139 ms	100 ms	0 ms
/assets/index-1iiwzXTD.js (aminajadulu.com)	135 ms	103 ms	0 ms
/assets/VueBottom....js (aminajadulu.com)	90 ms	53 ms	0 ms
/assets/index-4Mxh5tK4.js (aminajadulu.com)	75 ms	0 ms	0 ms
Google Tag Manager Tag-Manager	**290 ms**	**273 ms**	**15 ms**
/gtag/js?id=G-TE2N18R08B (www.googletagmanager.com)	290 ms	273 ms	15 ms
Cloudflare Utility	**145 ms**	**137 ms**	**1 ms**
/beacon.min.js (static.cloudflareinsights.com)	145 ms	137 ms	1 ms

Problem

There are more than 7.5 seconds time spent on `Unattributable` scripts.

Solution

It's difficult to pinpoint a specific solution for this without having access to the source code. In general, we can usually do it by reducing the number of dependencies and tweaking the bundling configurations to target higher versions of browsers.

Some of them may require a significant change on the tech stack, similar to the removal of Lottie library I mentioned above. Which may or may not worth in the context of this campaign website that will only live for a short term.