HOW SOFTWARE WORKS · BUILDER · 10 MIN READ

Make it fast: performance basics

Measure your page's speed with Lighthouse, then fix the biggest wins first: images, scripts, fonts and caching.

Pass the check (4 of 5) online to earn the “Speed Tuner” badge:
https://digitalbuilders757.com/university/study/make-it-fast-performance-basics

Why speed matters

People leave slow pages, especially on phones and weak connections, and search engines pay attention to page experience too. AI-built apps often work but ship more than they need: huge images, extra libraries, fonts nobody notices. A few fixes can make a page feel instant.

Measure first

Run Lighthouse (in Chrome's developer tools) or PageSpeed Insights on your live page, ideally the mobile test. You get scores and a list of specific opportunities, such as 'properly size images' or 'reduce unused JavaScript'. Write down the score so you can tell whether a change helped.

The biggest wins

- Images: resize them to the size they're shown, use modern formats such as WebP or AVIF, and lazy-load ones below the fold.
- Scripts: remove libraries you don't use, and avoid adding a big package for a small job.
- Fonts: one or two families and only the weights you need.
- Caching and a CDN: most hosts like Vercel serve static files from a CDN; let them.
- Data: load only what the page shows, and paginate long lists.

Fix with AI, one change at a time

Paste the top Lighthouse findings into your AI helper and ask for the three changes that matter most, and why. Make one change, deploy to a preview, measure again, and keep it only if the numbers improved and nothing broke.

Key terms

Lighthouse
A free tool in Chrome's developer tools that scores a page's speed, accessibility and more, with fixes.

CDN
A network of servers worldwide that serves your files from close to each visitor.

Preview deployment
A private, shareable copy of a branch or pull request for testing.

Metric
A number you track to know if something is working.

Lazy loading
Waiting to load images or code until they're about to be needed, so the first view loads faster.

Hosting
Renting always-on computers so your site or app is reachable by anyone.

npm / package
npm is the registry of reusable JavaScript code; each reusable piece is a package.

Try it: Speed up one page

1. Run a mobile Lighthouse or PageSpeed Insights test on your live page and note the performance score.
2. Pick the top opportunity it lists and ask an AI how to fix it in your project.
3. Make that one change on a preview deployment.
4. Test again and keep the change only if the score improved and everything still works.

KNOWLEDGE CHECK

Make it fast: performance basics

5 questions. Circle one answer for each; 4 or more correct passes. Answers are at the back.

1. What's the first step to making a page faster?

A. Measure it with a tool like Lighthouse
B. Rewrite it in a newer framework that's known for being fast
C. Add more images
D. Buy a faster laptop

2. A 4000-pixel photo is shown 400 pixels wide. What should you do?

A. Leave it, because browsers shrink big images without any extra cost
B. Resize it near the size it's shown and use WebP
C. Make it 8000 pixels so it stays sharp on every screen size
D. Convert it to a PDF

3. What does lazy-loading an image do?

A. Shrinks the image file on the server so it downloads faster
B. Deletes it on phones
C. Loads it only when it's about to scroll into view
D. Loads it twice

4. Lighthouse says 'reduce unused JavaScript'. A likely cause in an AI-built app?

A. Too much CSS colour
B. Too few images
C. The domain name is too long
D. Big libraries added for small jobs, or code that isn't used

5. You made a speed change. How do you know it worked?

A. Measure again and compare with your first score
B. It feels faster when you try it on your own fast Wi-Fi at home
C. Ask the AI that made the change whether the page is now faster
D. Wait a month

Official sites

Chrome for Developers: Lighthouse: https://developer.chrome.com/docs/lighthouse/overview
PageSpeed Insights: https://pagespeed.web.dev/

Last reviewed 2026-11-25. AI tools change fast; check each tool's own site for current features, plans and prices.

ANSWER KEY

Make it fast: performance basics

1. A: Measure it with a tool like Lighthouse
Measuring shows the real bottlenecks and lets you prove a change helped.

2. B: Resize it near the size it's shown and use WebP
Browsers still download the huge file. Right-sized images load much faster.

3. C: Loads it only when it's about to scroll into view
Below-the-fold images wait until they're needed, so the top of the page loads first.

4. D: Big libraries added for small jobs, or code that isn't used
Remove what you don't use, or swap a heavy package for a lighter one.

5. A: Measure again and compare with your first score
Before-and-after numbers beat feelings, especially on your fast connection.