Cheat sheet

DESIGN

All factors that make up a website – the design, user experience, content, and development – contributes to the amount of data required to load and use the website.

Data required to load the website comes from data centers, which mostly run on fossil fuels. The more data-heavy a website is, the greater its climate impact.

Therefore, factors such as weight of illustration, file format, animation method, color usage, and more become critical and decisive details.

Images

RESPONSIVE BACKGROUND IMAGES:
Set your media queries to use min width. A phone with 320px viewport width (iPhone) will only load 'small-image.jpg' instead of 'medium-image.jpg' or 'large-image.jpg'. This will decrease page load time and bandwidth usage.

SELECT THE CORRECT FILE TYPE:
- JPEGs: Photographs & illustrations that have lots of shading.
- GIf / SVG: Line art, illustrations, and type.
- PNG: Images that need to support partial transparency while retaining some of the crispness of JPG (i.e., company logo).

TOOLS FOR IMAGE OPTIMIZATION:
– Photoshop's Save For Web and Devices
– Image Optimizer (source)

LAZY LOADING TECHNIQUE
Only load images once a person has scrolled down to the image:
Lazy Load
lightweight version of Lazy Load

OPTIMIZING PHOTOS WITHIN A RESPONSIVE DESIGN:
Images displayed on your site can be decorative images in your CSS, or content in your HTML. Both styles can be optimized using the following guide.

IMAGE FEATURES
Detail and color contribute to image file size, so use simpler imagery, shallow depth of field and reduced color palettes such as black and white photography.

REALIZING IMAGE WEIGHT
Images make up 21% of web page's overall weight.

COMPRESSION IS KEY
It is possible to compress images and reduce file size without compromising quality: ShortPixel.

A DIFFERENT RESIZING METHOD
Use dithering technique to reduce image size and weight: online tool ditherit.

Fonts

Using few font variations and files possible minimizes impact of the fonts on site.

SYSTEM FONTS
System fonts require the least amount of energy to load because they are installed on local computers. Web fonts can increase the HTTP requests (term used to talk about number of requests made to server in order to load elements on a page. More HTTP requests = slower page = more energy used). System fonts example: Times New Roman, Arial, Franklin Gothic, Verdana, Courier New.

WEB FONTS
Popular web font options: 1. Adobe Typekit 2. Google Fonts 3. DIY web font. Adobe Typekit typical download size is 11kb less impact on page weight than Google Fonts. Google font size is 28kb, heaviest among all three options. DIY web font that is optimized results in a smaller file size (see link on how-to).

Animation

FORMAT

Use animations created with scalable vector graphics (SVGs) animated through the site's cascading style sheets (CSS). This involves only a few lines of code and no image or video files at all.

Colour

DARK COLORS

Darker colors require less energy to illuminate, with black being the lowest energy color and white being the most energy intensive.

UTILIZING CONTRAST

Using high contrast colors mean that the info displayed on website is more defined, resulting in user not needing to increase brightness of device. Less brightness = less energy consumption.

ENERGY SAVING SETTING

Dark mode reduces battery usage up to 63% on AMOLED displays, even if screen is at max brightness.

LIGHT COLORS

White & Blue colors are power hungry.

Illustration

FORMAT

SVG (scalable vector graphics) is a vector based format, built using data points and code rather than pixels. Much lighter than JPEGs or PNGs, and scalable to different screen resolutions easily without losing quality.

APPROACH

Illustration style: clean and simple illustrations, minimal special effects such as textures, brush strokes, etc. Limited number of color usage. The more effects and styles, the heavier in data and weight, which uses more energy to load on the website and therefore is unsustainable.

User Experience Elements

NAVIGATION

Clear and well designed navigation reduces the number of clicks from user.

Goal is to make the website clear and easy to navigate so that the user doesn't have to go through so many pages to get what they need.

Labels help to identify what the user is searching for.

MOBILE

Mobile-first design from the outset will mean that assets will be designed at the most-viewed size. Uploading images at this size will make the website faster and more energy efficient Instead of relying on CSS to resize the images.