Lecture 8

Previous lecture:
Task 1 – Mobile First: … Done!
Task 2 – Mobile First – responsive navigation menu: … Done!
Assignment5 – Mobile First: Case "4 fantastiske rundrejser" … Evaluate!

Literature:

07.11 8:30	6 lessons	Performance 2: https://developer.yahoo.com/performance/rules.html CSS Frameworks: Bootstrap, Skeleton, HTML5 Boilerplate etc.: http://bestreviews2017.com/best-css-framework-2017/ HTML5 Boilerplate: https://html5boilerplate.com/

Today's Learning Goals
Performance – Page Load Time
Image Optimization
Images in relation to RWD and Mobile First

Evaluation: Assignment 5 – Mobile First: "4 fantastiske rundrejser"

Task 1 – Evaluation: "4 fantastiske rundrejser" – Assignment 5
Method: Self-evaluation for recognition of prior learning
Evaluation document handed-out …

1. Students' presentation of own solution
2. Feedback from teacher:
     a. Evaluation on students' solutions
     b. Evaluation on teachers solution

Web Performance
Page Load Time = Conversions

A number of factors affect conversion rate and Page Load Time is one of them. Page Load Time, - the time it takes to load a specific webpage.
Page Load Time is affected by at least three factors: The device, the connection and finally the construction of the webpage.
As developers, we only have an influence on the last factor: The construction of the webpage in relation to how fast it is loading in the browser of the user.
As you all have seen in today's pre-readings there is a number of bottoms you can turn when you want to speed up a website, - some more efficient than others.

Best Practices for Speeding Up Your Web Site:

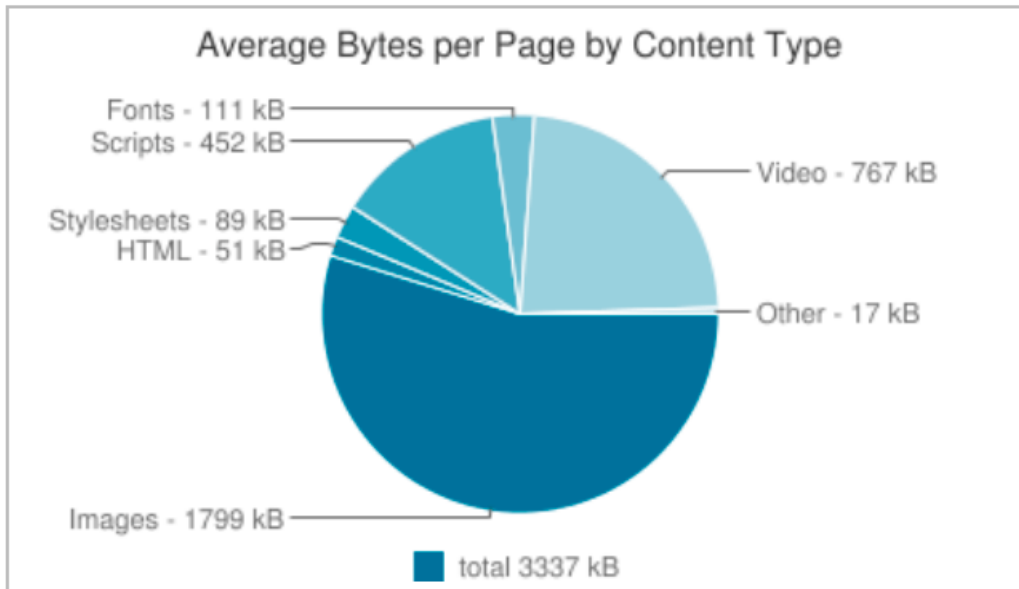https://developer.yahoo.com/performance/rules.html

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Issue number one is page assets or to be more specific: Images!

Images takes up the biggest part of most websites when it comes to bytes per page.

HTTP Archive: Interesting stats:

http://httparchive.org/interesting.php#bytesperpage

To improve Page Load Time you have to optimize all images. By "optimize" means getting the smallest and fastest file as long as the visual quality stays on a level where it communicates in a good and acceptable manner in relation to the sites overall goal.

To optimize images we will look at three factors:
Image dimensions (height and width in pixels)
Image formats (gif, jpg, png, svg and webp)
Image quality/compression level (image size in bytes at a given dimension)

To optimize images' performance on a webpage we will look at different implementation strategies:
Fallback strategy for unsupported formats
Images in relation to RWD and Mobile First
Images as background images

Workshop: Images in relation to Page Load Time

Short intro:

How Important Is Site Performance For Traffic And Conversions?
https://www.forbes.com/sites/jaysondemers/2016/01/15/how-important-is-site-performance-for-traffic-and-conversions/#390f21165248

<mark>**Task 2 – Image Optimization:**</mark> Follow me …
- Lecture7 to lecture8 …

Testing Tools (primary)

Google Chrome: Page Load Performance: Right click > Inspect > Network > F5

Measure Resource Loading Times
https://developers.google.com/web/tools/chrome-devtools/profile/network-performance/resource-loading?hl=en

Optimize Performance under Varying Network Conditions (throttling)
https://developers.google.com/web/tools/chrome-devtools/profile/network-performance/network-conditions?hl=en

Testing tools (secondary)

PageSpeed Insights:
https://developers.google.com/speed/pagespeed/insights/
GTmetrix:
https://gtmetrix.com/
Page speed optimization (also SEO test):
https://varvy.com/pagespeed/

Online Resources

Using WebP Images:
https://css-tricks.com/using-webp-images/
Why Marketers Should Care About Mobile Page Speed (Google):
https://www.thinkwithgoogle.com/marketing-resources/experience-design/mobile-page-speed-load-time/

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How Fast Should A Website Load in 2017?:
https://www.hobo-web.co.uk/your-website-design-should-load-in-4-seconds/
How Page Load Time Affects Conversion Rates: 12 Case Studies:
https://blog.hubspot.com/marketing/page-load-time-conversion-rates
How Slow Mobile Page Speeds Are Ruining Your Conversion Rates:
https://instapage.com/blog/optimizing-mobile-page-speed

Image Editors

GIMP (Import/Export WebP):
https://www.gimp.org/

Assignment 6 - hands on …
See the folder Assignments on Canvas – (Interaction_Development_Assignment_06)
Hand-in on Canvas: Deadline: Thursday, November 14 at 8:30 am

Next lecture
Literature:

14.11 8:30	6 lessons	Mobile Sites: Implementation Strategies: https://www.design19.org/blog/responsive-design-separate-website-dynamic-serving/ Dynamic Serving (PHP): http://www.vervesearch.com/blog/the-ultimate-guide-to-developing-mobile-websites/ RESS: Responsive + Server Side Components: http://www.lukew.com/ff/entry.asp?1392 User Agent Detection: http://mobiledetect.net/

Code examples

Example1: Fallback strategy: WebP-format in unsupported browser

https://css-tricks.com/using-webp-images/

```
<picture>
  <source srcset="img/awesome-webp-image.webp" type="image/webp">
  <source srcset="img/creaky-old.jpg" type="image/jpeg">
  <img src="img/creaky-old.jpg" alt="Alt Text!">
</picture>
```

Example 2: RWD - Different background images

https://www.w3schools.com/css/tryit.asp?filename=tryresponsive_image_mediaq

```
/* For width smaller than 400px: */
body {
   background-repeat: no-repeat;
   background-image: url('img_smallflower.jpg');
}

/* For width 400px and larger: */
@media only screen and (min-width: 400px) {
   body {
     background-image: url('img_flowers.jpg');
  }
}
```

Example 3: RWD - Different foreground images:

https://www.w3schools.com/css/tryit.asp?filename=tryresponsive_image_mediaq

```
<picture>
  <source srcset="img_smallflower.jpg" media="(max-width: 400px)">
  <source srcset="img_flowers.jpg">
  <img src="img_flowers.jpg" alt="Flowers">
</picture>
```

Example 4: RWD - Background image only on wider screens:

http://stackoverflow.com/questions/16563730/need-empty-div-with-background-image-to-force-height-and-must-be-responsive

```
#top-banner {
background-image:url(../images/banner-apollo.jpg);
background-size: 100%;
width: 100%;
padding-top: 18%;
height: 0;
background-repeat:no-repeat;
}
```

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