Website Optimization

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Why optimization is necessary

Reduce Server Load

Bandwidth + CPU + Memory = $$$

Improve User Experience

Slow loading/rendering = Bad user experience

General Tips

↓ Reduce		↑ Increase	
File Size	Requests	JavaScript Performance	Rendering Speed

HTML Part

- Simplify HTML Structure
  - Remove unnecessary wrappers
  - Cleanup useless attributes
  - Remove comments when publishing

```
<header>
    <h1><strong>Title</strong></h1>
    <!-- This is the nav -->
    <ul style="">
        <li class="first">
            <div>
                <a href="#"></a>
            </div>
        </li>
    </ul>
</header>
```

CSS Part

- Optimize CSS
  - Avoid long selectors
  - Use shorter names
  - Compress before publish

```
#header #header_layout ul li a {}
/* use class here */

.main_list_photo_container {}
.main_list_photo_container img {}
/*
  ml_photo {}
  ml_photo img {}
 */
```

JavaScript Part

- Merge small js file
  - 1 more file = 1 more request = extra $$$ + bandwidth

~~Datepicker.js~~
~~customButton.js~~
~~customRadio.js~~
~~customCheckbox.js~~
~~customAlert.js~~

/* Merge */
customsUI.js

JavaScript Part

- Use closure
  - Less global variables
  - Compressor works more effectively
- Compress before publish
  - Smaller size
  - Faster parsing
  - Obfuscation

```
(function ($) {
    var $lis = $('ul.timeline')
        .children();
        $lis.each(function (index) {
        var $this = $(this);
            $this.attr('tl-'+index);
        })
})();

/* compressed */
(function(b){var a=b("ul.timeline").childr
en();a.each(function(c){var d=b(this);
d.attr("tl-"+c);});})();
```

JavaScript Part

- Use ajax
  - JSON is much lighter than raw HTML
  - Bandwidth saved!
  - Reloading page costs

```
{
  "cid":12332,
  "comments":"hi",
  "nickname":"flyingcat",
  "timestamp":1337602135811
}

/* rendered */
<li class="cl" cid="12332">
  <h5>flyingcat</h5>
  <div class="ccontent">
    <p>flyingcat</p>
  </div>
  <div class="cmeta">
  Mon May 21 2012 20:08:44
  </div>
</li>
```

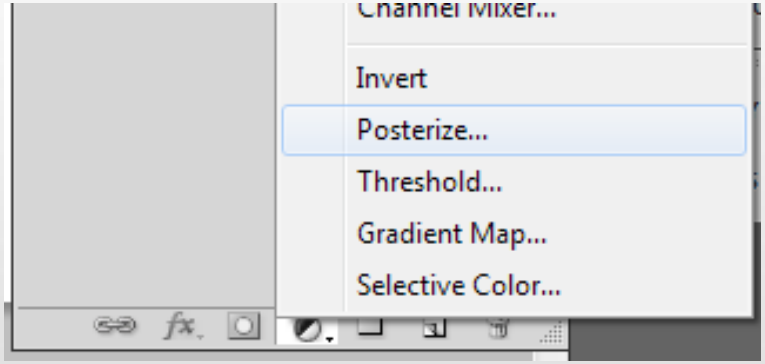
JavaScript Part

- Avoid overuse of animation (especially on mobile sites)
  - Reflow hogs CPU
  - Less reponsive
- Avoid excessive DOM operations
  - Lag is unbearable

https://developers.google.com/speed/articles/reflow

Image Part

- Choose the right format (jpeg | png | gif)
- Use sprite sheets
- Posterize before export
- Avoid scaling



Analyze your website

- Use webkit devtools
  - Network : Analyze your requests
  - Timeline : Track detailed page rendering process