FEO

Front End Optimization

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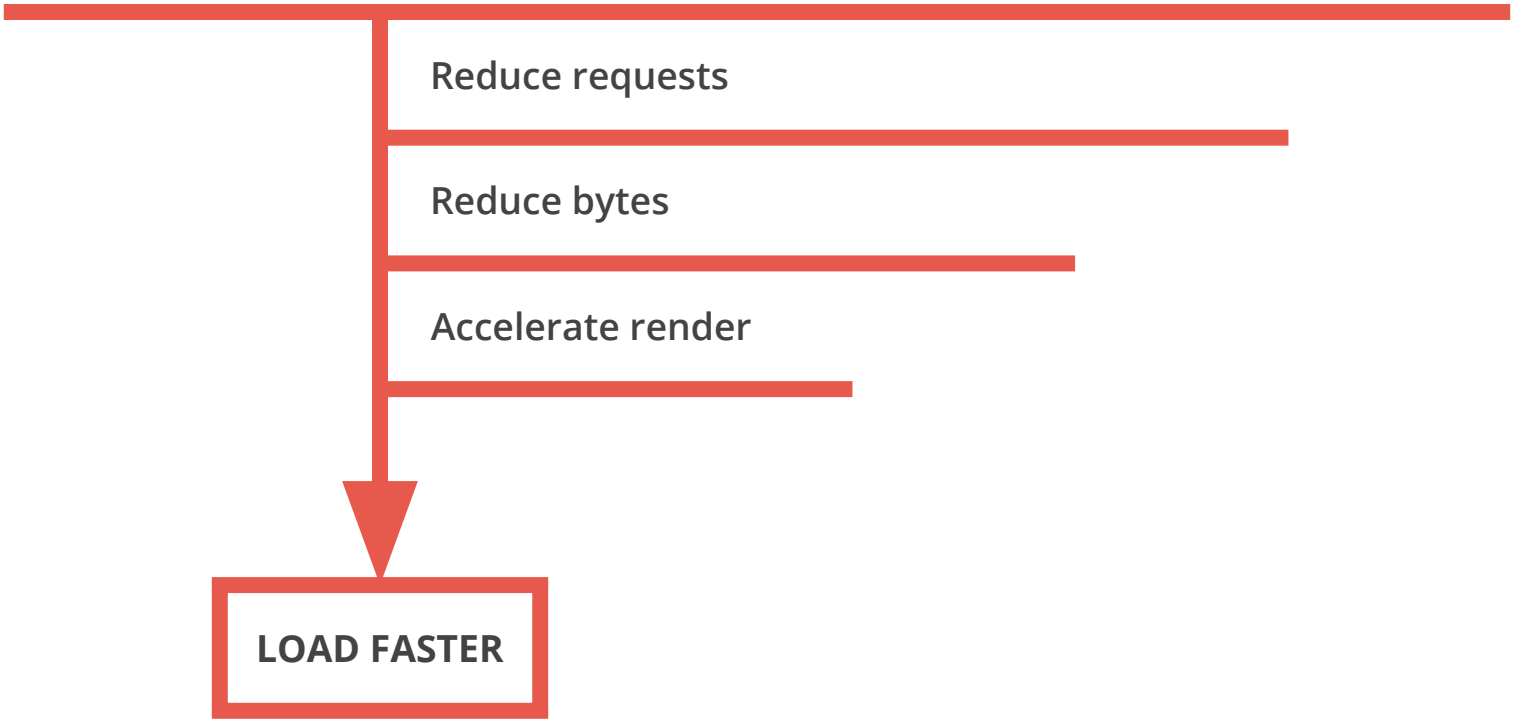
What is FEO?


Reduce requests
Reduce bytes
Accelerate render
LOAD FASTER

How to reduce requests?

CSS	JS	IMAGES
Bundle		Sprites
Don’t use 3rd parties		Embedded
		Replace with CSS
		Don’t use duplicates
Use only what is really needed for particular page		

How to reduce bytes?

CSS	JS	HTML	IMAGES
Minify			Format and size
			Use SVG when possible
			Minify SVG
			Lossless compression
Use only what is really needed for particular page			

How to accelerate render?

CSS	JS	HTML	IMAGES
Minify			Use appropriate size
First view	Less code	Validate	Progressive JPEG
	~~Frontend render~~		
	Async load		
Use only what is really needed for particular page			

BONUS How to beat the Google?

Optimize images

Properly formatting and compressing images can save many bytes of data.

Optimize the following images to reduce their size by 6.9KiB (19% reduction).

Compressing http://www.conceptdraw.com/images/logos.png could save 6.9KiB (19% reduction).

BONUS How to beat the Google?

```
[maxim@maxim ~]$ optipng -o7 -zm1-9 -snip -strip all logos.png
** Processing: logos.png
1080x457 pixels, 4x8 bits/pixel, RGB+alpha
Stripping metadata...
Input IDAT size = 38355 bytes
Input file size = 38498 bytes

Trying:
  zc = 9  zm = 9  zs = 0  f = 0        IDAT size = 29538
  zc = 9  zm = 8  zs = 0  f = 0        IDAT size = 29427
  zc = 9  zm = 7  zs = 0  f = 0        IDAT size = 28640
  zc = 9  zm = 6  zs = 0  f = 0        IDAT size = 28549
  zc = 9  zm = 5  zs = 0  f = 0        IDAT size = 28376

Selecting parameters:
  zc = 9  zm = 5  zs = 0  f = 0        IDAT size = 28376

Output IDAT size = 28376 bytes (9979 bytes decrease)
Output file size = 28433 bytes (10065 bytes = 26.14% decrease)
```

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```
[maxim@maxim advancecomp-2.0]$ ./advpng -z -4 -i 10 /home/maxim/logos.png
      28433       26395  92% /home/maxim/logos.png
      28433       26395  92%
[maxim@maxim advancecomp-2.0]$ ls -lah /home/maxim/logos.png
-rw-rw-r--. 1 maxim maxim 26K Jul  7 17:32 /home/maxim/logos.png
```

```
[maxim@maxim tmp]$ wget http://www.conceptdraw.com/images/logos.png
--2017-07-07 17:33:19--  http://www.conceptdraw.com/images/logos.pn
Resolving www.conceptdraw.com (www.conceptdraw.com)... 95.138.191.
Connecting to www.conceptdraw.com (www.conceptdraw.com)|95.138.191
HTTP request sent, awaiting response... 200 OK
Length: 38498 (38K) [image/png]
Saving to: 'logos.png'

100%[==========================================================

2017-07-07 17:33:20 (191 KB/s) - 'logos.png' saved [38498/38498]

[maxim@maxim tmp]$ ls -la logos.png
-rw-rw-r--. 1 maxim maxim 38498 Oct 30  2015 logos.png
[maxim@maxim tmp]$ ls -lah logos.png
-rw-rw-r--. 1 maxim maxim 38K Oct 30  2015 logos.png
```

BONUS How to beat the Google?