

CSE134B-SS20-HW1

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Netlify url:

<https://bejewelled-horse-24a844.netlify.app/>

Part 1:

Question 2:

1. Total number of requests is 27

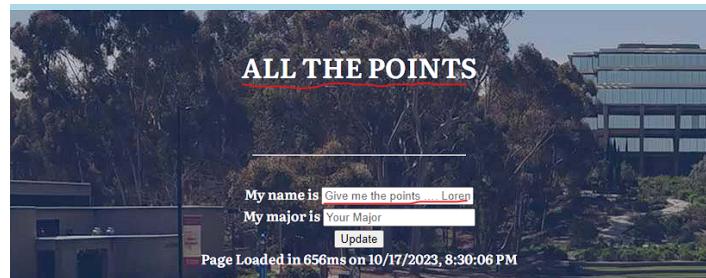
- **document:** 1
- **stylesheet:** 1
- **png:** 1
- **jpeg:** 2
- **gif:** 1
- **font:** 1
- **svg + xml:** 17
- **media:** 1
- **script:** 1
- **vnd.microsoft.icon:** 1

2. Total Bytes Sent are 6.7~6.8 Megabytes

3. Named "Waterfall.png" in "Screenshots" folder

Name	Status	Type	Initiator	Size	Time	Waterfall
bejewelled-horse-24a844.netlify.app	200	document	Other	1.2 kB	48 ms	
main.css	200	stylesheet	(index):11	535 B	46 ms	
bear.png	200	png	(index):63	549 kB	233 ms	
triton.jpg	200	jpeg	(index):64	3.7 MB	583 ms	
ucsd.gif	200	gif	(index):66	2.1 MB	596 ms	
bg_homepage.jpg	200	jpeg	main.css	95.0 kB	377 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
Literata-Bold.ttf	200	font	main.css	214 kB	384 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
videoplayback.mp4	206	media	(index):100	44 B	384 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
main.js	200	script	(index):95	553 B	359 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
data:image/svg+xml;...	200	svg+xml	(index):100	(memory ...)	0 ms	
favicon.ico	200	vnd.micro...	Other	7.5 kB	38 ms	

Question 3:



UCSD Images

```

<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <meta name="description" content="Simple demo Web page for CSE 134B">
    <meta name="keywords" content="HTML, CSS, JavaScript">
    <meta name="author" content="CSE 134B Homework 1 Website">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>CSE 134B Homework 1 Website</title>
    <link href="images/favicon.ico" rel="icon">
    <link href="styles/main.css" rel="stylesheet">
    <script>...</script>
  </head>
  <body>
    <header>
      <h1>ALL THE POINTS</h1>
      <section id="user-info-component">
        <div id="user-info" style="display: block;">
          <output id="name-info">&ampnbsp</output>
          <br>
          <output id="major-info">&ampnbsp</output>
          <br>
          <br>
          <!-- Inline Javascript Handlers used here for demonstration only -->
          <section class="intro-text">
            <label>
              My name is <input id="name-input" type="text" autocomplete="name" autofocus maxlength="200" placeholder="Give me the points... Loren" value="Loren">
            </label>
            <label>
              My major is <input id="major-input" type="text" autocomplete="major" autofocus maxlength="200" placeholder="Your Major" value="Computer Science"...
            </label>
          </section>
        </div>
      </section>
    </header>
  </body>

```

Part 2:

Navigating espn.com:

Quite a pain. It took a lot of spamming left/down key to finally get to the Top Headlines section. When I load the page, the screen reader picks the links at the far left of the page by default. Trying to go Top Headlines requires me to traverse down the entire page first then go back up.

Navigating webaim.org:

Fairly easier than espn.com. I still have to go from left to right. But the page is divided into rows by rows. To elaborate, in each chunk, I go from left to right in that row first before moving on to the next row. This makes it faster to get to the WebAIM Trainings section! ESPN.com on the other hand is divided like column by column, so to get to the right column I have to traverse the left columns first.

Part 3:

Question 1:

The uci's response header is more revealing than ucsd's. I am not too sure what is troublesome about these info, but I guess that being able to know beforehand crucial info is an advantage for hackers.

ucsd.edu's:

Response Headers	
Date:	Thu, 19 Oct 2023 05:01:11 GMT
Etag:	"b575-607887e484888"
Server:	Apache/2.4.6 (Red Hat Enterprise Linux)

uci.edu's:

Response Headers	
	<input type="checkbox"/> Raw
Connection:	Keep-Alive
Content-Type:	text/html; charset=UTF-8
Date:	Thu, 19 Oct 2023 05:01:53 GMT
Keep-Alive:	timeout=2
Server:	Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips mod_auth_kerb/5.4 mod_perl/2.0.11 Perl/v5.16.3
Strict-Transport-Security:	max-age=31536000; includeSubDomains
Transfer-Encoding:	chunked
X-Frame-Options:	SAMEORIGIN
X-Xss-Protection:	1; mode=block

Question 2:

ucsd.edu:

2 slideshows are broken. The big one at the top of the page and the one under "Academic" section.

Screenshot for the second slideshow:

10

One of the top 10 public universities in the nation for over a decade.

#3

Among the top public universities in the nation.

scripps.com:

Disabling javascript will prevent the entire page to load (the entire page is white). All functionalities are assumed broken.

The screenshot shows the browser's developer tools with the 'Elements' tab selected. The DOM tree is visible, showing the structure of the page. The right side of the tools displays the CSS styles applied to the elements. A large amount of CSS code is shown, primarily from 'style.css?v=1.0:9'. The code includes various classes like '.fade-in' and '.body.fade-in' with corresponding animations. The 'Console' tab at the bottom is empty, indicating no errors or logs.

ucla.edu:

Half of the contents on the page no longer load, usually the ones that are updated in real time. The ones that load still have their functionalities intact.

The screenshot shows a web page from UCLA Athletics. The header includes "Gene Block, UCLA Chancellor" and a button to "Read the message from Chancellor Block to the Bruin community". The main content area is mostly empty, with only a small portion of the page visible. The developer tools show the following HTML and CSS:

```

<html>
  <head>
    <!-- Gene Block, UCLA Chancellor -->
    <!-- Read the message from Chancellor Block to the Bruin community -->
    <meta charset="no-jst" lang="en">
    <!-- Google Tag Manager (noscript) -->
    <!-- End Google Tag Manager (noscript) -->
    <!-- If IE 9 -->
    <!-- If browserupgrade --> You are using an <strong>outdated</strong> browser. Please <a href="https://browserupgrade.com/">upgrade your browser</a> to improve your experience and security.</p>
    <!-- End If IE 9 -->
    <!-- Header -->
    <!-- Main Content -->
    <!-- Footer -->
  </head>
  <body>
    <div id="skip-nav" class="skip-nav" role="navigation" aria-label="skip navigation"><a href="#main">Skip navigation</a></div>
    <!-- Google Tag Manager (noscript) -->
    <!-- End Google Tag Manager (noscript) -->
    <!-- If IE 9 -->
    <!-- If browserupgrade --> You are using an <strong>outdated</strong> browser. Please <a href="https://browserupgrade.com/">upgrade your browser</a> to improve your experience and security.</p>
    <!-- End If IE 9 -->
    <!-- Header -->
    <!-- Main Content -->
    <!-- Footer -->
  </body>
</html>

```

HTML.js body.main

Network conditions

Console Network conditions

Default levels | 37 issues | 4 33

Report Only Refused to load the image '404' because it violates the following Content Security Policy directive: "img src='self'". amazons3.amazonaws.com, cdn.jedelivr.net, client.google.com, gstatic.com, twimg.com, static.doubleclick.net, cdn.webcomponents.ucla.edu, data:,

Report Only Refused to frame 'https://www.eopelitemanager.com/' because it violates the following Content Security Policy directive: www.ucla.edu/*frame-src 'self'*.css.google.com, www.google.com.

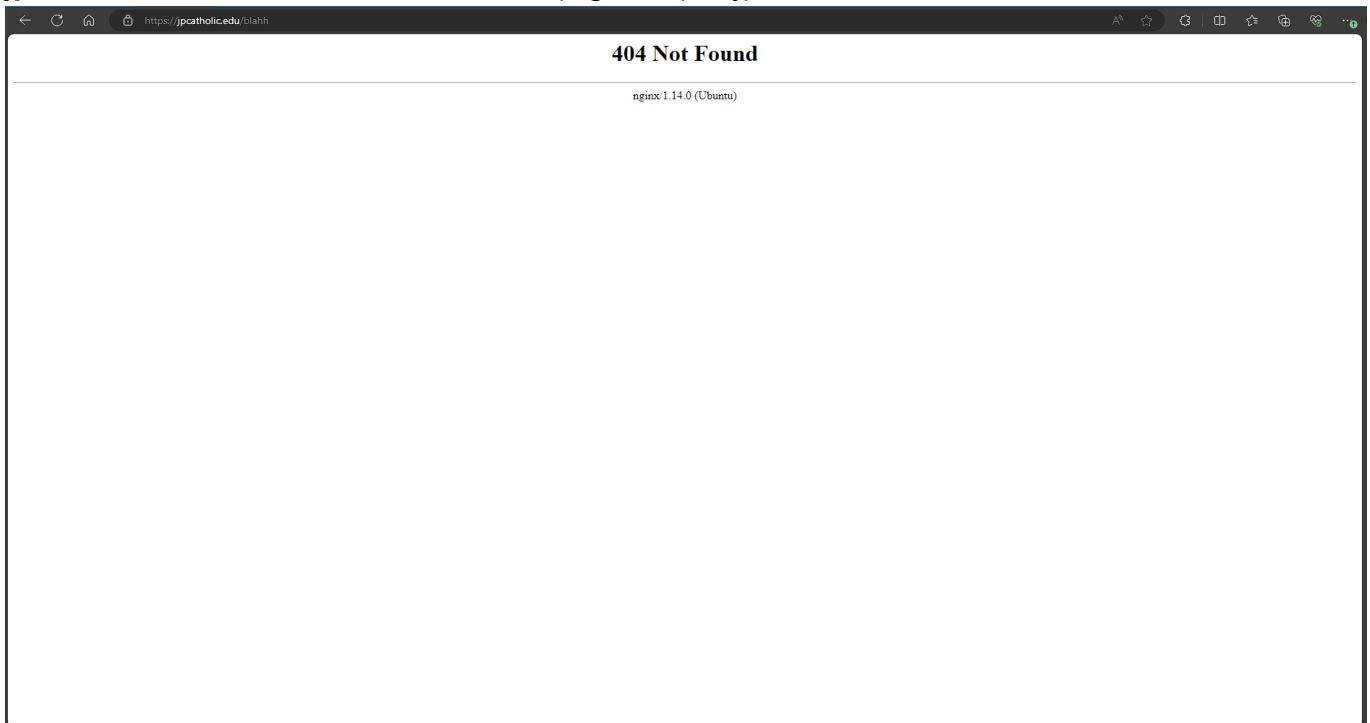
Report Only Refused to frame 'https://www.eopelitemanager.com/' because it violates the following Content Security Policy directive: www.ucla.edu/*frame-src 'self'*.css.google.com, www.google.com.

Question 3:

csuci.edu: Yes, "https://www.csuci.edu/blahh" was used to test its custom 404 page.

The screenshot shows a custom 404 error page for CSUCI. The page has a yellow background with a blue wavy pattern at the bottom. In the center, there is a large, stylized '404' with a fire effect. Below the '404' is the text "Page Not Found". At the bottom, there is a message: "The page you were looking for doesn't exist. Check that the page address is spelled correctly." The URL "https://www.csuci.edu/blahh" is visible in the address bar.

jpcatholic.edu: No, seems like a default 404 page. "https://jpcatholic.edu/blahh" was used to test for it.

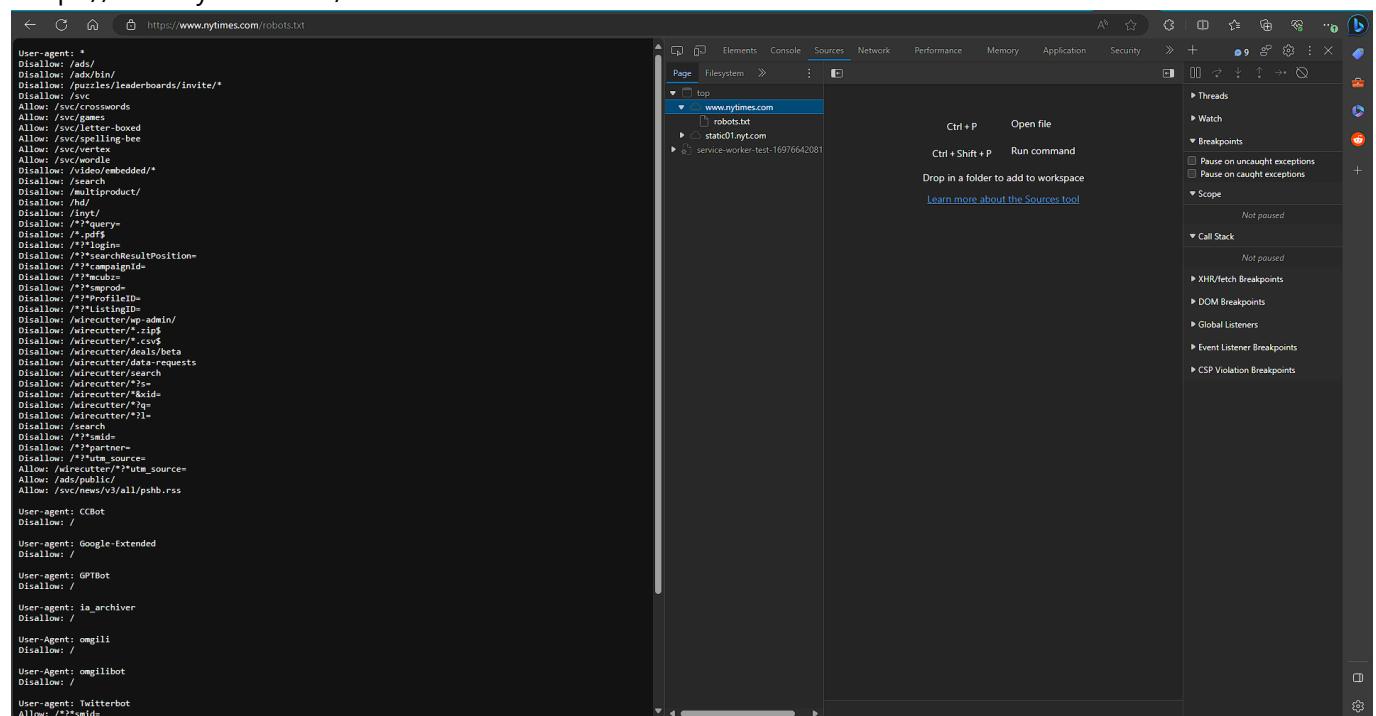


Why custom 404 page is a good idea?

Because the default 404 page is a barebone deadend. When the user accidentally accesses an invalid page, they will need at least a link to go back to the site's main page. A custom 404 page also helps differentiating the site from other sites.

Question 4:

Yes, nytime.com has a robots.txt, which can be openly accessed by typing "https://www.nytimes.com/robots.txt" in the URL bar.



Under the "User-agent: *" section we can see a lot of secret readable links that are disallowed for crawlers. Some of these may be unexpectedly sensitive. Since the public can access these webpages, a well-versed hacker can exploit these pages to their advantage.

Nytimes.com also excludes some particular dangerous crawlers from its entire site using the "Disallow: /".

These bots are:

1. **CCBot**: The bot used to train ChatGPT and leverages Apache Nutch which is a framework used for large scale scalping.
2. **Google-extended**: To block Google's controversial Bard and Vertex AI generative APIs.
3. **GPTBot**: Self-explanatory.
4. **ia_archiver**: An external bot that regularly backups the site's previous contents in case it get wiped. Kind of an Internet historian. Unclear why nytimes.com wants to block it.
5. **omgili/omgilibot**: A crawler based from Israel. Its specific purpose is unknown but since it's from Israel, it is up to no good.

Question 5:

Google hacking, also known as Google Dorking, is an oversight in design that allows advanced search to uncover information that should not be available to the public. Although this is illicit, it is entirely legal. This is possible through the Google Bot, a crawler that will try to index any corner of the site that is not explicitly disallowed. I think that if possible, sensitive information should be kept local on a drive instead of being published to the web. One single oversight will leak out sensitive information and security measures like robots.txt can only do so much. Nytimes.com's abuse of robots.txt is concerning, instead of the long list of disallows those contents should have not been published to the web in the first place.

Question 6:

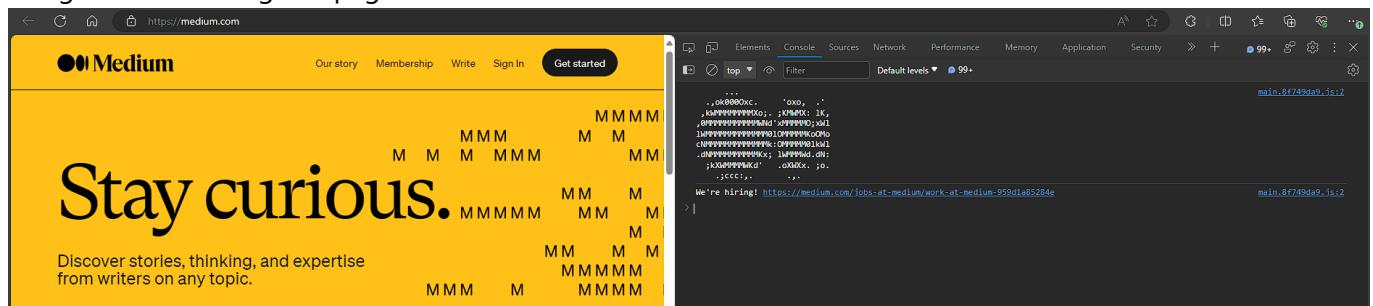
Querying "Why UCSD is awesome" got me 1,550,000 results in 0.28 second.

It's near impossible for me to find the 500-510th URLs because to get more results you can only scroll down instead of accessing a specific page of results like in the old days. But I notice that as I scroll down the results become much less relevant, such as "best places to eat near UCSD".

Bing's results are very similar to Google's, but at least Bing gives you page number to choose from at the bottom. Duckduckgo is more barebone than both Bing and Google: Duckduckgo's top results are still relevant but the fewer down quickly become irrelevant, doesn't show total results and page numbers. I think I still prefer Google the most.

Question 7:

medium.com's java console reveals that they are hiring! This is a pretty cool strategy for unemployed web designers who debug this page on accident.



medium.com's local storage:

Key	Value
branch_session_first	{"session_id": "1078152886351256163", "identity_id": "110743856163..."}
device deviceid	"2220cf1ebdd57ad1"
read-next hide-meter	1670027044882
post-article posts-viewed-count	2
uid list	["878fddcc4632"]
MUTEX_/_oh-noes X	"1670027040852:3058308704281987"
post-article posts-viewed-month-count	2
sprig-attributes latest.post.clientRead.source	"post_page-----4ffb43f3b288-----"
uid previous	"lo_75447cab22ff"
post-article first-post-viewed-today-timestamp	1670027028906
google-one-tap hide-at	1697682718379
userlap.ids	{"WISfSM8eD3":{"vid": "fd7e28b3-5496-4263-84fc-831882fd0db1", "..."}
lo-non-moc-membership-upsell dismissed-at	"2023-10-13T02:51:38.846Z"
post-article posts-viewed-today-count	1
pv e92ab4f1fba1	1697165495525
MUTEX_/_batch X	"1670027040852:445204241310724"
post-article first-post-viewed-timestamp	1669939439579
post-article first-post-viewed-month-timestamp	1669939439579
sprig-attributes latest.post.clientRead.url	"https://medium.com/the-atlantic/the-coming-software-apocalypse-..."
sign-in-confirmation-banner 878fddcc4632	"fdeb945011c4243519e20742b2dd57195c295e9de36014790907ed..."
post-article first-non-moc-post-viewed-month-timestamp	1697165495525
sprig-attributes email	"tan002@ucsd.edu"
post-article non-moc-posts-viewed-month-count	1
sprig-attributes latest.post.clientRead.postId	"4ffb43f3b288"
viewer-status is-logged-in	false
▾ {session_id: "1078152886351256163", identity_id: "1107438561630653812",...} browser_fingerprint_id: "MTA3ODE1Mjg4NDYwMDczMDM4Nw==" data: "{\"+clicked_branch_link\":false,\"+is_first_session\":true}" has_app: false identity: "lo_75447cab22ff" identity_id: "1107438561630653812" link: "https://link.medium.com/a/key_live_ofxXr2qTrrU9NqURK8ZwEhknBxiI6KBm?%24identity_id=1078152886360650961" session_id: "1078152886351256163"	

Looking at the site's local storage, I'm not sure what half these numbers are for. But I can discern my total visit to this page this month, this week, when was my first visit, my signed in gmail, etc. Seems like they are there to keep track of my visits, but why are they on my local storage?

Question 8:

When I check the ca.gov's console, I see the number "4114" printed. Checking its source, I see a variable named "datasetCount" holding this value.

```
JQMIGRATE: Migrate is installed, version 3.1.0
4114
>
```

jquery-migrate-3.1.0.min.js:2
(index):139

It's unclear the purpose of printing that number in the console. The number is also shown on the page which indicates that the California government has 4114 dataset open to the public.

4114 Data Sets

California believes in the
power of unlocking
government data.

[Visit Open Data Portal](#)

The variable "datasetCount" is in a script section for loading datasets. This section includes a URL that is a list of all dataset. This can be troublesome because a bot can input these exact name on a search engine and able to index all these dataset. But then they are meant to be public so not sure if indexing these dataset is any useful.

```

1 {
2   "help": "https://data.ca.gov/api/3/action/help_show?name=package_list",
3   "success": true,
4   "result": [
5     "10-model-ensemble-30-year-named-climate-period-average-minimum-and-maximum-average-temperatures",
6     "10-model-ensemble-30-year-named-climate-period-average-precipitation",
7     "129-million-dead-trees-in-california",
8     "130-million-dead-trees-in-california",
9     "1990-urban-water-management-plans-uwnps",
10    "1995-urban-water-management-plans-uwnps",
11    "1995-and-smaller-surface-pv-apn-city-and-number-by-county-2021",
12    "2000-urban-water-management-plans-uwnps",
13    "2005-urban-water-management-plans-uwnps",
14    "2005-urban-water-management-plans-uwnps-historic-information",
15    "2010-urban-water-management-plans-uwnps-historic-information",
16    "2010-urban-water-management-plans-uwnps-historic-information",
17    "2010-urban-water-management-plan-uwnp10",
18    "2010-georgia-slosh-flooding-barrier-performance-evaluation-gsnpb-11_legacy_repo",
19    "2011-and-2012-georgia-slosh-non-physical-barrier-performance-evaluation-gsnpb-12_legacy_repo",
20    "2014-georgia-slosh-floating-fish-guidance-structure-performance-evaluation-gsnpb-14_legacy_r",
21    "2015-urban-water-management-plans-uwnps",
22    "2015-urban-water-management-plans-uwnps-historic-information",
23    "2017-california-electric-utility-service-territories-balancingAuthorities",
24    "2017-muelo-reports",
25    "2018-muelo-reporting-user-group-newsletter",
26    "2018-muelo-reports",
27    "2019-california-water-quality-status-report",
28    "2020-21-independent-special-districts",
29    "2020-dsw2-v8-2-0-calibration",
30    "2020-ecoregions",
31    "2021-2022-west-false-river-emergency-drought-barrier-water-quality-flow-and-fish-monitoring",
32    "2023-pineappleexpress-2023-dins-public-view",
33    "2023-pineapple-express-flow-and-structure-state",
34    "2023-pineapple-express-flow-and-structure-state-map",
35    "2023-ularffloodingsincident-2023-dins-public-view",
36    "2023-ularffloodingsincident-flow-and-structure-state",
37    "2023-ularffloodingsincident-flow-and-structure-state-map",
38    "2070-extreme-climate-change-scenarios-for-water-supply-planning",
39    "30x30-conserved-areas-marine-terrestrial-2022",
40    "30x30-conserved-areas-terrestrial-2023",
41    "30x30-ecoregions",
42    "4-model-ensemble-30-year-rolling-average-minimum-and-maximum-average-temperatures",
43    "4-model-ensemble-30-year-rolling-average-precipitation",
44    "a-la-to-aic-tax-rates-all-filing-statutes",
45    "a-3-tax-rates-by-corporation-type",
46    "abid-350-annual-recipient-report",
47    "about-medical-services-funded-by-medi-cal-calendar-years-2014-2020",
48    "about-this-site",
49    "acces-explorer",
50    "acces-explorer-all-areas-open-access-enriched",
51    "acces-explorer-all-areas-open-access-enriched1",
52    "acces-explorer-city-county-reference",
53    "acces-explorer-gap12-open-access-enriched",
54    "acces-explorer-gap12-open-access-enriched1",
55    "acces-explorer-user-guide",
56    "acces-lands-for-all-public-open-spaces",
57    "ace-biodiversity-rank-5",
58    "ace-biomass-allocation-ranks-4-5",
59    "ace-connectivity-rank-5",
60    "ace-irreplaceability-rank-4-5",
61    "aces-attestations-app",
62    "aces-attestations",
63    "aces-aware-clinician-listing",
64    "aces-aware-clinician-listing1",
65    "aces-aware-reporting",
66    "acid-matrix",
67    "acid-matrix"
68  ]
69 }
70
71
72

```

Question 9:

Changing the user's agent to iPhone will show trending searches instead of usually visited page on Desktop:
iPhone's:

The screenshot shows the Google homepage with the search bar containing "Google". The developer tools Network tab is open, displaying a list of requests. The requests include various assets like favicons, CSS files, and JavaScript files, many of which are served from the disk cache. The Waterfall chart at the top shows the timeline of these requests.

Name	Status	Type	Initiator	Size	Ts	Waterfall
favicon.ico	200	x-icon	Other	(disk cache)	1 ms	
m=sty57.yf6tKWMuje.y436L3x2d.sjy3gsy6u.aRQ...	200	script	index134	(disk cache)	1 ms	
ui	204	text/html	m=BegabExeX...	0 B	55 ms	
gen_204?atyp=cs&r=1&ei=MgwyZm5A8mPbPjL...	204	ping	m=bcdos.hsm.j...	23 B	35 ms	
hpba?et=10&UKewyinfj.vKGCAxXLMEQHltzAwCq...	200	xhr	m=BegabExeX...	159 B	61 ms	
m=bMphd3syh3bm1tf7p...	200	script	index134	(disk cache)	1 ms	
search?atyp=cs&r=1&ei=MgwyZm5A8mPbPjL...	200	xhr	m=bcdos.hsm.j...	4.1 kB	93 ms	
gen_204?atyp=cs&r=1&ei=MgwyZm5A8mPbPjL...	204	ping	m=bcdos.hsm.j...	23 B	40 ms	
gen_204?atyp=cs&r=1&ei=MgwyZm5A8mPbPjL...	204	ping	m=bcdos.hsm.j...	23 B	39 ms	
data:image/png;base64...	200	png	m=bcdos.hsm.j...	(memory cache) 0 B	1 ms	
gen_204?atyp=cs&r=1&ei=MgwyZm5A8mPbPjL...	204	ping	m=bcdos.hsm.j...	23 B	43 ms	
gen_204?atyp=cs&r=1&ei=MgwyZm5A8mPbPjL...	204	ping	m=bcdos.hsm.j...	23 B	43 ms	
gen_204?atyp=cs&r=1&ei=MgwyZm5A8mPbPjL...	204	ping	m=bcdos.hsm.j...	23 B	43 ms	
gen_204?atyp=cs&r=1&ei=MgwyZm5A8mPbPjL...	204	ping	m=bcdos.hsm.j...	23 B	43 ms	
gen_204?atyp=cs&r=1&ei=MgwyZm5A8mPbPjL...	204	ping	m=bcdos.hsm.j...	23 B	42 ms	
gen_204?atyp=cs&r=1&ei=MgwyZm5A8mPbPjL...	204	ping	m=bcdos.hsm.j...	23 B	46 ms	
gen_204?atyp=cs&r=1&ei=MgwyZm5A8mPbPjL...	204	ping	m=bcdos.hsm.j...	23 B	41 ms	

35 requests | 62.8 kB transferred | 2.1 MB resources | Finish: 1.63 s | DOMContentLoaded: 174 ms | Load: 268 ms

Default:

The screenshot shows the Google homepage with the search bar containing "Google". The developer tools Network tab is open, displaying a list of requests. The requests include various assets like favicons, CSS files, and JavaScript files, many of which are served from the disk cache. The Waterfall chart at the top shows the timeline of these requests.

Name	Status	Type	Initiator	Size	Ts	Waterfall
KfCmCmp#92Fr1Mu6mxKwf2	200	font	callout1rnd:190...	(memory cache) 0 B	1 ms	
4l4ubrNthdJlDvuGoi0IJU94YrCw/wf2	200	font	callout1rnd:190...	(memory cache) 0 B	1 ms	
gen_204?atyp=cs&r=1&ei=bcgwZyTHG8nEkPjPgda...	204	ping	m=bcdos.hsm.ja...	29 B	39 ms	
gen_204?atyp=cs&r=1&ei=bcgwZyTHG8nEkPjPgda...	204	ping	m=bcdos.hsm.ja...	29 B	39 ms	
m=w9fIcJ73qwfGrBKh3s5FqJzT63JUUrYeO1g...	200	script	m=b_tp353	(disk cache) 2 B	1 ms	
m=RgI1d	200	script	m=b_tp353	(disk cache) 1 B	1 ms	
m=bm51f	200	script	m=b_tp352	(disk cache) 1 B	1 ms	
logFormat=join=&hadlast=true&auther=0	200	xhr	m=b_tp358	152 B	46 ms	
gen_204?use_corp_on&atyp=1&z=1697695638930...	204	text/html	index57	33 B	40 ms	
m=WbqyJhhl8RcpqbWhNk	200	script	m=b_tp353	(disk cache) 1 B	1 ms	
gen_204?atyp=cs&r=1&ei=bcgwZyTHG8nEkPjPgda...	204	ping	m=bcdos.hsm.ja...	30 B	34 ms	
ui	204	text/html	m=B2qeDChPym...	0 B	71 ms	
gen_204?atyp=&ct=font&cad=&nt=reloadRei=bcg...	204	text/html	index3	31 B	41 ms	
favicon.ico	200	x-icon	Other	(disk cache)	1 ms	
logFormat=join=&hadlast=true	200	xhr	rs=AA2WbD3N1K...	152 B	43 ms	
gen_204?atyp=cs&r=1&ei=bcgwZyTHG8nEkPjPgday...	204	ping	m=bcdos.hsm.ja...	30 B	47 ms	
gen_204?use_corp_on&atyp=1&z=1697695641045...	204	text/html	index57	33 B	52 ms	
logFormat=join=&hadlast=true	200	xhr	rs=AA2WbD3N1K...	152 B	48 ms	

38 requests | 69.7 kB transferred | 3.1 MB resources | Finish: 3.76 s | DOMContentLoaded: 298 ms | Load: 639 ms

Question 10:

- X-Content-Type-Options:** MIME types advertised in the Content-Type headers should be followed and not be changed.
- X-Download-Options:** to download the requested data instead of reviewing it in browser.
- X-Frame-Options:** prevent UI redressing.
- X-Permitted-Cross-Domain-Policies:** permit Adobe products handle data.
- X-Render-Origin-Server:** Unknown.
- X-Xss-Protection:** stop page from loading when detecting XSS attacks.
- X-Cache:** indicates if file was served by a CDN or origin server.
- X-Cache-Hits:** how many were served by a CDN or origin server.
- X-Fastly-Request-Id:** The ID of the fastly served cache.

10. **X-Served-By:** Identity of the Fastly cache servers processing the response.
11. **X-Jsd-Version:** Version of JSD.
12. **X-Jsd-Version-Type:** Type of JSD's version.
13. **X-Amz-Server-Side-Encryption:** Type of encryption on Amazon's server.
14. **X-Tw-Cdn:** Unknown.
15. **X-Github-Api-Version-Selected:** Version of Github's API.
16. **X-Github-Media-Types:** Unclear.
17. **X-Github-Request-Id:** The ID of the item requests from Github's API.
18. **X-Ratelimit-Limit:** number of requests left for the client in the time window.
19. **X-Ratelimit-Remaining:** remaining quota in the current window
20. **X-Ratelimit-Reset:** time remaining in the current window in seconds
21. **X-Ratelimit-Resource:** service and type of threshold that was reached.
22. **X-Ratelimit-Used:** Unknown
23. **X-Connection-Hash:** seems like Twitter related.
24. **X-Response-Time:** the elapsed time from when a request enters the Platform to when the headers are written out to the client.
25. **X-Transaction-Id:** the ID of the client that makes transaction to the server.

Question 11:

ucsd.edu's audit:

The screenshot shows the Lighthouse audit results for <https://ucsd.edu/>. The overall score is 58. The breakdown by category is as follows:

- Performance: 58
- Accessibility: 73
- Best Practices: 75
- SEO: 91
- PWA: None

A note below the scores indicates: "There were issues affecting this run of Lighthouse:"

- Chrome extensions negatively affected this page's load performance. Try auditing the page in incognito mode or from a Chrome profile without extensions.

The "Performance" section details that values are estimated and may vary, and provides a link to a performance calculator. It also includes a screenshot of the UC San Diego homepage.

From the audit, the top 2 suggestions are:

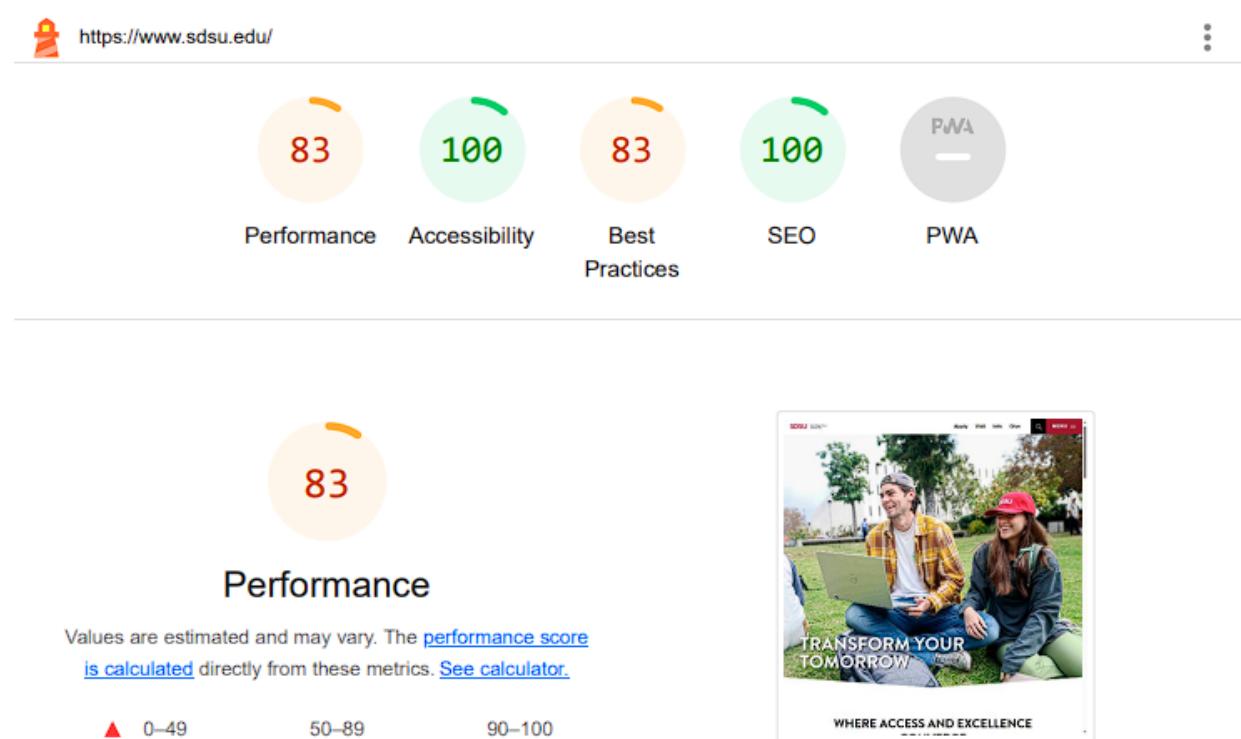
OPPORTUNITIES

Opportunity	Estimated Savings
▲ Serve images in next-gen formats	2.60s ▾
▲ Eliminate render-blocking resources	2.53s ▾
▲ Reduce unused CSS	2.12s ▾
▲ Efficiently encode images	1.80s ▾
▲ Properly size images	1.36s ▾
▲ Enable text compression	1.20s ▾
Minify CSS	0.60s ▾
Reduce unused JavaScript	0.20s ▾

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1. Serve image in next-gen formats: ucsd.edu is still serving image in PNG or JPEG. On the other hand, WebP and AVIF have better compression and as a result are more lightweight.
2. Eliminate render-blocking resources: Consider delivering critical JS/CSS first and non-critical JS/styles later.

sdsu.edu's audit:



ucsd.edu scores only 55 in performance, whereas sdsu.edu scores 83. Although sdsu.edu also has big problem with inefficient image formats, it has less complaints in overall.

OPPORTUNITIES

Opportunity	Estimated Savings
▲ Serve images in next-gen formats	8.13s ▾
▲ Properly size images	1.88s ▾
▲ Efficiently encode images	0.96s ▾
Eliminate render-blocking resources	0.36s ▾
Reduce unused JavaScript	0.24s ▾

These suggestions can help your page load faster. They don't [directly affect](#) the Performance score.

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Question 12:

Chrome platform status: <https://chromestatus.com/roadmap> **Firefox platform page:**

<https://mozilla.github.io/standards-positions/> **Edge platform status:**

<https://github.com/MicrosoftEdge>Status> **Safari feature status:** <https://webkit.org/status/> (retired)

Shadow DOM v1 was introduced in Chrome 53, which was released on August 31, 2016. Chrome's 15th birthday was on September 7, 2023.

← Feature: Shadow DOM v1



Overview

The new Shadow DOM APIs, called *v1*, including, but not limited to:

- Element.attachShadow
- New HTML Element: HTMLSlotElement
- Slotable.assignedSlot
- Event.composed, Event.composedPath()

See <http://hayato.io/2016/shadowdomv1/> for the difference between v0 and v1.

Intent to Ship: <https://groups.google.com/a/chromium.org/forum/#topic/blink-dev/zrZRD2ls5tw>

Documentation

<https://developers.google.com/web/fundamentals/web-components/shadowdom>

Specification

<http://w3c.github.io/webcomponents/spec/shadow/>

Spec status: Specification being incubated in a Community Group

Status in Chromium

Blink components: [Blink>DOM>ShadowDOM](#)

Implementation status: **Enabled by default** Fixed [Launch Shadow DOM v1](#)

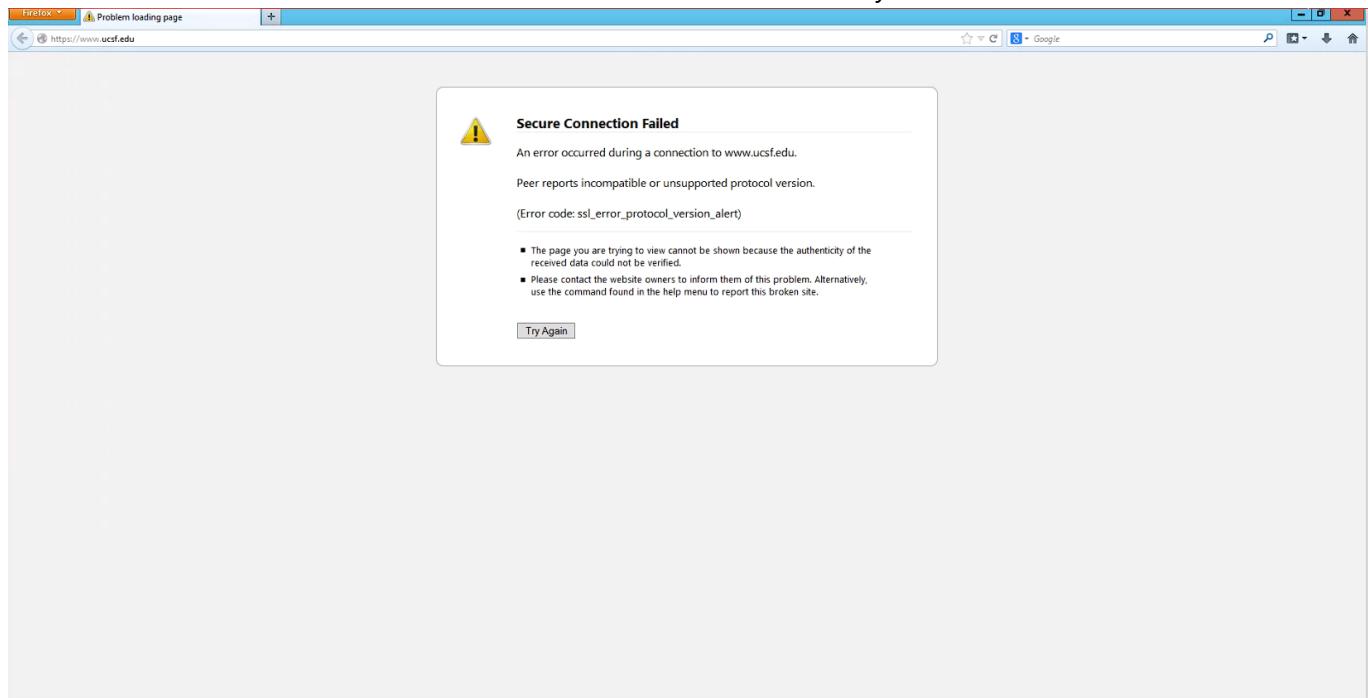
Estimated milestones:

Desktop	Shipping: 53
Android	Shipping: 53
iOS	Shipping: 53
Webview	Shipping: 53

Question 13:

Testing Firefox v.25 on Browserstack's Win 8.1, ucsd.edu failed to load. This got me thinking that when we discuss what browsers to support, we should also specify the range of versions that we will support. Because

latest Firefox 115 and Firefox 25 were so different from each other, they were like 2 different browsers.



Question 14:

On ucisd.edu, X-Content-Type-Options in Response headers is set to "nosniff". This means blocking all kind of MIME sniffing, a browser behavior that guesses the content's type if not specified in the header. By blocking MIME sniffing, the browser cannot guess the content type and must rely on the header.

In the response header, we also see "server: cloudflare", which is a site hosting service. ucsf.edu is hosted on cloudflare's servers.

Question 15:

Main site ucsd.edu has 9 cookies. It also has 4 domains in total which are:

The screenshot shows the Chrome DevTools Application tab with the 'Cookies' section selected. A list of cookies is displayed in a table, with one cookie from the 'https://ucsd.edu' domain highlighted.

Name	Value	Dom...	Path	Expir...	Size	Http...	Secu...	Sam...	Parti...	Pri...
_cf_bm	AAfMvSB1UfZOhraVRySDC4beem1L...	.myf...	/	2023...	152	✓	✓	None	Medi...	
_hjAbsoluteSessionIn...	1	.ucs...	/	2023...	29	✓	✓	None	Medi...	
_hjIncludedInSessionS...	0	.ucs...	/	2023...	35	✓	✓	None	Medi...	
_hjFirstSeen	1	.ucs...	/	2023...	13	✓	✓	None	Medi...	
_hjSessionUser_36627...	eyJpZCI6ImVIMTEwOTg5LTQ2ODctN...	.ucs...	/	2024...	138	✓	✓	None	Medi...	
_ga	GA1.1.936910469.1697686501	.ucs...	/	2024...	29				Medi...	
_ga_ZBPHLZYTS4	GS1.1.1697686500.1.0.1697686500.0....	.ucs...	/	2024...	51				Medi...	
_hjSession_3662797	eyJpZCI6JczOTg0ZWE5LTVkJjlNDR...	.ucs...	/	2023...	174	✓	✓	None	Medi...	
_gcl_au	1.1.1055175153.1697686501	.ucs...	/	2024...	32				Medi...	

Select a cookie to preview its value

1. ucsd.edu
2. td.doubleclick.net
3. 12451049.fl.doubleclick.net
4. ad.ipredictive.com

Main site sdsu.edu has 71~73 cookies (might have miscounted). It also has 4 domains in total which are:

The screenshot shows the Chrome DevTools Application tab open. On the left, the sidebar lists 'Manifest', 'Service workers', 'Storage' (with 'Local storage', 'Session storage', 'IndexedDB', 'Web SQL', and 'Cookies' sections), 'Background services' (with 'Back/forward cache', 'Background fetch', 'Background sync', 'Bounce tracking mitigations', 'Notifications', 'Payment handler', and 'Periodic background sync' items), and 'Console' and 'Network conditions' tabs at the bottom.

The main area displays a table of cookies for the domain `https://www.sdsu.edu`. The columns include Name, Value, Domain, Path, Expir..., Size, Http..., Secu..., Sam..., Parti..., and Pri.... The table shows approximately 20 entries, with some values redacted. A tooltip 'Cookie Value' with 'Show URL-decoded' checked is visible above the table.

Name	Value	Domain	Path	Expir...	Size	Http...	Secu...	Sam...	Parti...	Pri...
DV	Q3U_1XEN8KgiQK...	www.google.com	/	2023...	49					Medi...
NID	511=YZDrbK6nwq...	.google.com	/	2024...	198	✓	✓	None		Medi...
_UR	cdxcls=0&QS=0&T...	.bing.com	/	2024...	22		✓	None		Medi...
pxrc	CNfbwqkGEgUI6Ac...	.rlcdn.com	/	2023...	44		✓	None		Medi...
_ga_PQ982Y29GP	GS1.1.1697687230...	.sdsu.edu	/	2024...	51					Medi...
TapAd_DID	a679a9dc-a95e-40...	.tapad.com	/	2023...	45		✓	None		Medi...
VISITOR_INFO1_LIVE	-aj_dBYvN5k	youtube.com	/	2024...	29	✓	✓	None		Medi...
ar_debug	1	.googleadservices.com	/	2024...	9	✓	✓	None		Medi...
tluid	252225254465571...	.3lift.com	/	2024...	25		✓	None		Medi...
SM	C	.c.clarity.ms	/	2024...	3		✓	None		Medi...
SRCHUSR	DOB=20231019&T...	.bing.com	/	2024...	53		✓	None		Medi...
_scid_r	7f25a7ce-c0c1-4be...	.sdsu.edu	/	2024...	43			Lax		Medi...
_clsk	3sbu26j169768723...	.sdsu.edu	/	2023...	50					Medi...
_fbp	fb.1.169768723058...	.sdsu.edu	/	2024...	31			Lax		Medi...
rl_visitor_history	95beac2b-d118-43...	www.sdsu.edu	/	Sessi...	54		✓	None		Medi...
YSC	1NmIIN3IPS54	youtube.com	/	Sessi...	14	✓	✓	None		Medi...
AEC	Ackid1TKeDct_5Sr...	.google.com	/	2023...	61	✓	✓	Lax		Medi...

Below the table, the 'Console' tab is active, showing several error messages related to 'postMessage' and 'CookieStore' usage. The errors are:

- Failed to execute 'postMessage' on 'DOMWindow': The target origin provided ('<https://www.youtube.com>') does not match the recipient window's origin ('<https://www.sdsu.edu>').
- Failed to execute 'postMessage' on 'DOMWindow': The target origin provided ('<https://www.youtube.com>') does not match the recipient window's origin ('<https://www.sdsu.edu>').
- Uncaught ReferenceError: cookies is not defined at <anonymous>:1:1
- Uncaught ReferenceError: cookiestore is not defined at <anonymous>:1:1

1. sdsu.edu
2. td.doubleclick.net
3. youtube.com
4. A very long string of number it's best to see picture.