

**CS571 Spring 2020: Web Technologies****Exam 1**

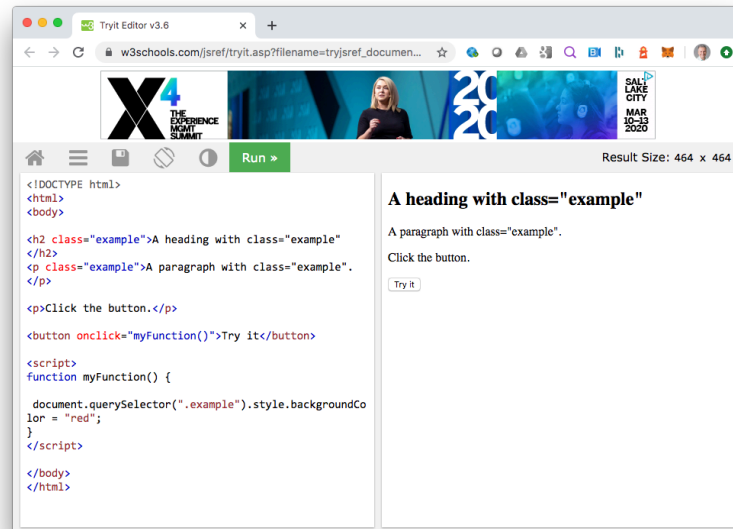
	Points		Points
HTML DOM	20	PYTHON	20
JavaScript / Regex	10	CSS	10
JSON/JSONP	20		
HTTP	20		
	<b>Total</b>	<b>100</b>	

**Instructions:**

1. This is a 1 hour, 20 minutes exam. Closed book and notes.
2. No space other than the pages in the exam booklet will be scanned for grading.
3. If you require an additional page for a question, you can use the extra page provided within this booklet. However please indicate clearly that you are continuing the solution on the additional page.
4. Do not detach any sheets from the booklet. Detached sheets will not be scanned.
5. If using a pencil to write the answers, make sure you apply enough pressure, so your answers are readable in the scanned copy of your exam.

## HTML DOM QUESTIONS [20 PTS]

**Q1. (5 points)** Consider the following example from w3schools.com:



The code is duplicated here:

```
<!DOCTYPE html>
<html>
<body>

<h2 class="example">A heading with class="example"</h2>
<p class="example">A paragraph with class="example".</p>

<p>Click the button.</p>

<button onclick="myFunction()">Try it</button>

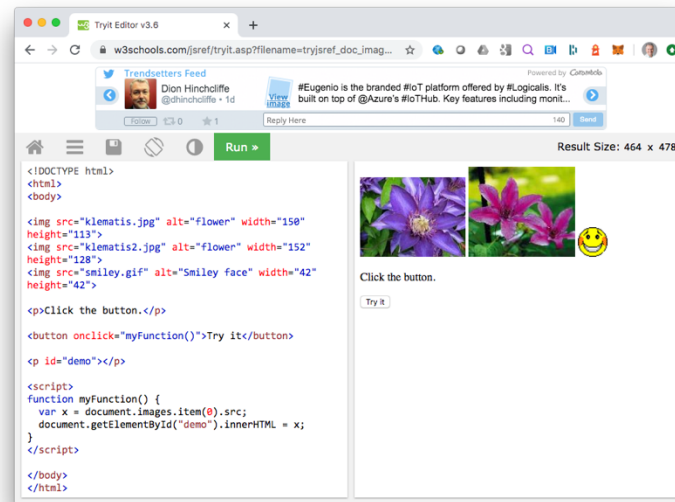
<script>
function myFunction() {
    document.querySelector(".example").style.backgroundColor = "red";
}
</script>

</body>
</html>
```

What happens when one clicks the “Try it” button?

A1.

**Q2. (5 points)** Consider the following example from w3schools.com:



The code is duplicated here:

```
<!DOCTYPE html>
<html>
<body>





<p>Click the button.</p>

<button onclick="myFunction()">Try it</button>

<p id="demo"></p>

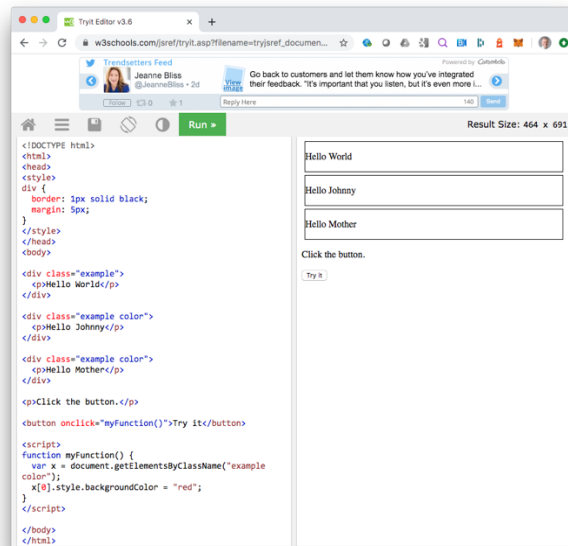
<script>
function myFunction() {
  var x = document.images.item(0).src;
  document.getElementById("demo").innerHTML = x;
}
</script>

</body>
</html>
```

What happens when one clicks the “Try it” button?

**A2.**

**Q3. (5 points)** Consider the following example from w3schools.com:



The code is duplicated here:

```
<!DOCTYPE html>
<html>
<head>
<style>
div {
  border: 1px solid black;
  margin: 5px;
}
</style>
</head>
<body>

<div class="example">
  <p>Hello World</p>
</div>

<div class="example color">
  <p>Hello Johnny</p>
</div>

<div class="example color">
  <p>Hello Mother</p>
</div>

<p>Click the button.</p>

<button onclick="myFunction()">Try it</button>
```

```

<script>
function myFunction() {
  var x = document.getElementsByClassName("example color");
  x[0].style.backgroundColor = "red";
}
</script>

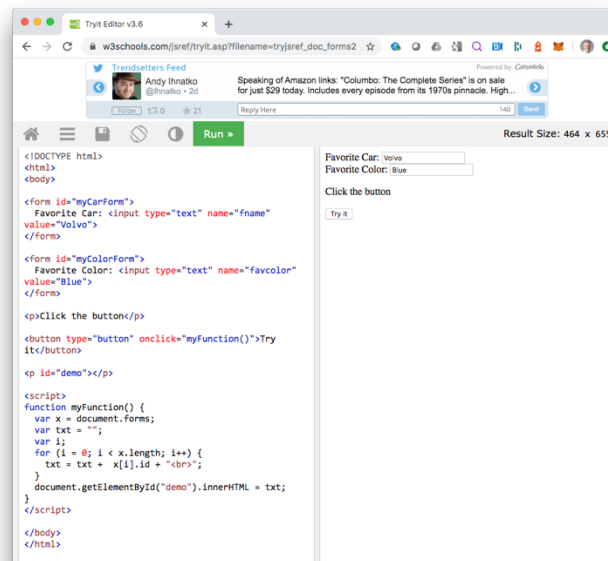
</body>
</html>

```

What happens when one clicks the “Try it” button?

A3.

**Q4. (5 points)** Consider the following example from w3schools.com:



The code is duplicated here:

```

<!DOCTYPE html>
<html>
<body>

<form id="myCarForm">
  Favorite Car: <input type="text" name="fname" value="Volvo">
</form>

<form id="myColorForm">
  Favorite Color: <input type="text" name="favcolor" value="Blue">
</form>

<p>Click the button</p>

```

```
<button type="button" onclick="myFunction()">Try it</button>

<p id="demo"></p>

<script>
function myFunction() {
  var x = document.forms;
  var txt = "";
  var i;
  for (i = 0; i < x.length; i++) {
    txt = txt + x[i].id + "<br>";
  }
  document.getElementById("demo").innerHTML = txt;
}
</script>

</body>
</html>
```

What happens when one clicks the “Try it” button?

**A4.**

## JAVASCRIPT REGULAR EXPRESSIONS QUESTIONS [10 PTS]

**Q1. [2.5 pts]** In RegEx `re = /\w+\s/g` creates a regular expression that looks for one or more characters followed by a space, and it looks for this combination throughout the string. Consider the following code. What will be the output on the console?

```
var re = /\w+\s/g;
var str = 'fee fi fo fum';
var myArray = str.match(re);
console.log(myArray);
```

**A1:**

**Q2. [2.5 pts]** In RegEx the `test()` method is used to test whether a match has been found or not. Consider the following code. What will be the output on the console?

```
var regex = /hello/;
var str = 'hello world';
var result = regex.test(str);
console.log(result);
```

**A2:**

**Q3. [2.5 pts]** Consider the following RegEx code. What will be the output on the console?

```
var regex = /\d+/;
console.log(regex.test('8'));
console.log(regex.test('88899'));
console.log(regex.test('8888845'));
```

**A3:**

**Q4. [2.5 pts]** In RegEx `^` matches the beginning of the string. Consider the following code. What will be the output on the console?

```
var regex = /^g/;
console.log(regex.test('good'));
console.log(regex.test('bad'));
console.log(regex.test('tag'));
```

**A4:**

## JSON/ JSONP QUESTIONS [20 pts]

**Q1. [10 points]** Consider the following code. (NO PARTIAL CREDIT)

```
<!DOCTYPE html>
<html>
<body>

<button onclick="clickButton()">Click me!</button>

<p id="demo"></p>

<script>
function clickButton() {
    var s = document.createElement("script");
    s.src = "demo_jsonp2.php?callback=myDisplayFunction";
    document.body.appendChild(s);
}

function myDisplayFunction(myObj) {
    document.getElementById("demo").innerHTML = myObj.name;
}
</script>
</body>
</html>
```

What JSONP code is returned by the demo\_jsonp2.php server script, if the JSON object returned contains a single key with value “John”?

**A1.**

Each of the following true/false questions is worth 1 point.

**Q2. [ 4 points]** JSON is like XML because (check all true statements):

- ☒ Both JSON and XML are "self describing" (human readable)
- ☐ Both JSON and XML are not hierarchical (values within values)
- ☒ Both JSON and XML can be parsed and used by lots of programming languages
- ☒ Both JSON and XML can be fetched with an XMLHttpRequest

**Q3. [4 points]** JSON is unlike XML because (check all true statements):

- ☒ JSON doesn't use end tag
- ☒ JSON is shorter
- ☒ JSON is quicker to read and write
- ☐ JSON cannot use arrays

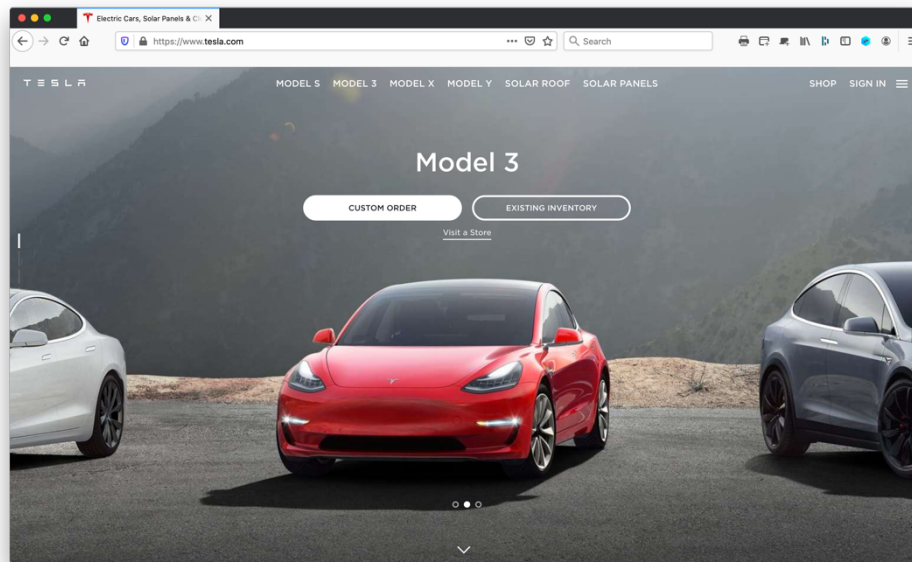


**Q4. [2 points]** JSON is better than XML because (check all true statements):

- ☒ XML is much more difficult to parse than JSON.
- ☐ XML is parsed into a ready-to-use JavaScript object.

## HTTP QUESTIONS [20 PTS]

Below is the web page at tesla.com. Following that is part of the exchange of Request / Response between the browser and the server. Answer the questions that follow. Each question is worth 2 points.



(1) http://tesla.com

```
GET / HTTP/1.0
Host: tesla.com
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.12; rv:73.0)
Gecko/20100101 Firefox/73.0
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
DNT: 1
Connection: keep-alive
Cookie: optimizelyEndUserId=oeu1468950575184r0.875588214634862; ...
Upgrade-Insecure-Requests: 1
```

```
HTTP/1.0 301 Moved Permanently
Location: https://www.tesla.com/
Server: BigIP
Connection: Keep-Alive
Content-Length: 0
```

-----  
(2) https://www.tesla.com/

```
GET / HTTP/2.0
Host: www.tesla.com
```

User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.12; rv:73.0)  
Gecko/20100101 Firefox/73.0  
Accept:  
text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,\*/\*;q=0.8  
Accept-Language: en-US,en;q=0.5  
Accept-Encoding: gzip, deflate, br  
DNT: 1  
Connection: keep-alive  
Cookie: optimizelyEndUserId=oeu1468950575184r0.875588214634862; ...  
Upgrade-Insecure-Requests: 1

HTTP/2.0 200 OK  
content-type: text/html; charset=UTF-8  
x-powered-by: PHP/7.3.12  
x-drupal-dynamic-cache: UNCACHEABLE  
x-ua-compatible: IE=edge  
content-language: en  
last-modified: Fri, 21 Feb 2020 01:10:49 GMT  
etag: "1582247449"  
x-generator: Drupal 8 (https://www.drupal.org)  
x-drupal-cache: HIT  
cache-control: max-age=60s  
x-tzla-edge-hostname-vcl: drupal8-prod  
x-tzla-edge-backend-fetch-if-stale: true  
x-tzla-edge-was-304: true  
x-tzla-edge-age: 60.000  
x-tzla-edge-grace: 86400.000  
x-tzla-edge-backend-retry: 0  
x-tzla-edge-backend-conn-time: 0.000  
x-tzla-edge-backend-ttfb: 0.000  
x-tzla-edge-backend-reason: OK  
x-tzla-edge-backend-status: 200  
x-varnish: 944080227 927833357  
x-frame-options: SAMEORIGIN  
x-content-type-options: nosniff  
x-tzla-edge-cache-hit: Hit  
x-tzla-edge-ttl: 56.320  
x-tzla-edge-grace-backend-unhealthy: 86400.000  
x-tzla-edge-backend-stream: false  
x-tzla-edge-client-restarts: 0  
x-tzla-edge-client-req-ttl: -1.000  
x-tzla-edge-server: sjc04p1tegrv65.teslamotors.com  
x-tzla-edge-cache-hits: 1  
accept-ranges: bytes  
content-encoding: gzip  
x-akamai-transformed: 9 - 0 pmb=mRUM,3  
date: Fri, 21 Feb 2020 19:56:35 GMT  
content-length: 12253  
vary: Accept-Encoding  
set-cookie: AKA\_A2=A; expires=Fri, 21-Feb-2020 20:56:35 GMT; path=/;  
domain=tesla.com; secure; HttpOnly  
ak\_bmsc=617591E4F975249559AF24C60CD5DC7B1734001E503A0000F335505EDB9F5130~plhbLp  
jQcMe/ ...  
strict-transport-security: max-age=15768000  
X-Firefox-Spdy: h2

-----  
(3) https://www.tesla.com/\_flysystem/s3/css/css\_h5\_gM4ZwI-UE-  
s3NKZBiPF5H75\_wOp64Go3YhGVCwU.css?q5b4et

GET \_flysystem/s3/css/css\_h5\_gM4ZwI-UE-  
s3NKZBiPF5H75\_wOp64Go3YhGVCwU.css?q5b4et HTTP/2.0  
Host: www.tesla.com  
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.12; rv:73.0)  
Gecko/20100101 Firefox/73.0  
Accept: text/css,\*/\*;q=0.1  
Accept-Language: en-US,en;q=0.5  
Accept-Encoding: gzip, deflate, br  
DNT: 1  
Connection: keep-alive  
Referer: https://www.tesla.com/  
Cookie: optimizelyEndUserId=oeu1468950575184r0.875588214634862; ...

HTTP/2.0 200 OK  
last-modified: Tue, 18 Feb 2020 16:56:07 GMT  
etag: CyhzO8pdk55OssZiKgJ9ffpLwonZtME6V9Y3SLCWdCI  
cache-control: max-age=300s  
content-type: text/css;charset=UTF-8  
accept-ranges: bytes  
content-encoding: br  
content-language: en  
server: Akamai Resource Optimizer  
x-content-type-options: nosniff  
x-edgeconnect-midmile-rtt: 77  
x-edgeconnect-origin-mex-latency: 746  
x-frame-options: SAMEORIGIN  
x-generator: Drupal 8 (https://www.drupal.org)  
x-powered-by: PHP/7.3.12  
x-tzla-edge-age: 604800.000  
x-tzla-edge-backend-conn-time: 0.000  
x-tzla-edge-backend-fetch-if-stale: false  
x-tzla-edge-backend-reason: OK  
x-tzla-edge-backend-retry: 0  
x-tzla-edge-backend-status: 200  
x-tzla-edge-backend-stream: false  
x-tzla-edge-backend-ttfb: 0.000  
x-tzla-edge-client-req-ttl: -1.000  
x-tzla-edge-client-restarts: 0  
x-tzla-edge-cache-hit: Hit  
x-tzla-edge-cache-hits: 5  
x-tzla-edge-grace-backend-unhealthy: 86400.000  
x-tzla-edge-grace: 86400.000  
x-tzla-edge-hostname-vcl: drupal8-prod  
x-tzla-edge-server: sjc04pltegvvr64.teslamotors.com  
x-tzla-edge-ttl: 584375.872  
x-tzla-edge-was-304: false  
x-ua-compatible: IE=edge  
x-varnish: 540543229 438013347  
content-length: 22793  
date: Fri, 21 Feb 2020 19:56:34 GMT  
server-timing: cdn-cache; desc=HIT, edge; dur=1  
strict-transport-security: max-age=15768000  
x-akamai-http2-push: 1  
X-Firefox-Spdy: h2

-----  
(4) https://www.tesla.com/sites/default/files/images/charging/accessories-hero-  
desktop-poster.jpg

GET /sites/default/files/images/charging/accessories-hero-desktop-poster.jpg  
HTTP/2.0

Host: www.tesla.com  
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.12; rv:73.0)  
Gecko/20100101 Firefox/73.0  
Accept: image/webp, \*/\*  
Accept-Language: en-US,en;q=0.5  
Accept-Encoding: gzip, deflate, br  
DNT: 1  
Connection: keep-alive  
Referer: https://www.tesla.com/  
Cookie: optimizelyEndUserId=oeu1468950575184r0.875588214634862; ...

HTTP/2.0 200 OK  
last-modified: Wed, 15 Jan 2020 18:42:01 GMT  
etag: "242b4-59c32106a6358"  
content-length: 148148  
x-server: sjc04plwwwwb31  
content-type: image/jpeg  
x-varnish-server: sjc04plwwwvr14.sjc05.teslamotors.com  
x-varnish: 278186706 282921676  
x-frame-options: SAMEORIGIN  
x-content-type-options: nosniff  
x-cache-hits: 9  
accept-ranges: bytes  
cache-control: max-age=3600  
date: Fri, 21 Feb 2020 19:56:35 GMT  
server-timing: cdn-cache; desc=HIT, edge; dur=25  
strict-transport-security: max-age=15768000  
X-Firefox-Spdy: h2

-----  
(5)  
https://www.tesla.com/\_flysystem/s3/js/js\_9oFq3WSFOKWT71KHKexBjhHDw7LA1mHnE1GL-M1HjLg.js

GET /\_flysystem/s3/js/js\_9oFq3WSFOKWT71KHKexBjhHDw7LA1mHnE1GL-M1HjLg.js  
HTTP/2.0  
Host: www.tesla.com  
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.12; rv:73.0)  
Gecko/20100101 Firefox/73.0  
Accept: \*/\*  
Accept-Language: en-US,en;q=0.5  
Accept-Encoding: gzip, deflate, br  
DNT: 1  
Connection: keep-alive  
Referer: https://www.tesla.com/  
Cookie: optimizelyEndUserId=oeu1468950575184r0.875588214634862; ...

HTTP/2.0 200 OK  
last-modified: Tue, 18 Feb 2020 16:56:10 GMT  
etag: sqWa8NcegHUuWi3g9YcVwTTmSnCJpWYjyfhHtlgbo1o  
cache-control: max-age=300s  
content-type: application/javascript  
accept-ranges: bytes  
content-encoding: br  
content-language: en  
server: Akamai Resource Optimizer  
x-content-type-options: nosniff  
x-edgeconnect-midmile-rtt: 61  
x-edgeconnect-origin-mex-latency: 299  
x-frame-options: SAMEORIGIN  
x-generator: Drupal 8 (https://www.drupal.org)

x-powered-by: PHP/7.3.12  
x-tzla-edge-age: 604800.000  
...  
x-tzla-edge-hostname-vcl: drupal8-prod  
x-tzla-edge-server: sjc04pltegr65.teslamotors.com  
x-tzla-edge-ttl: 553955.727  
x-tzla-edge-was-304: false  
x-ua-compatible: IE=edge  
x-varnish: 535812187 437977186  
content-length: 79356  
date: Fri, 21 Feb 2020 19:56:34 GMT  
server-timing: cdn-cache; desc=HIT, edge; dur=1  
strict-transport-security: max-age=15768000  
x-akamai-http2-push: 1  
X-Firefox-Spdy: h2

-----  
(6) https://www.tesla.com/libraries/boomerang/boomerang.js

GET /libraries/boomerang/boomerang.js HTTP/2.0  
Host: www.tesla.com  
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.12; rv:73.0)  
Gecko/20100101 Firefox/73.0  
Accept: \*/\*  
Accept-Language: en-US,en;q=0.5  
Accept-Encoding: gzip, deflate, br  
DNT: 1  
Connection: keep-alive  
Referer: https://www.tesla.com/  
Cookie: optimizelyEndUserId=oeu1468950575184r0.875588214634862; ...

HTTP/2.0 200 OK  
last-modified: Thu, 06 Feb 2020 06:53:04 GMT  
etag: "1dea4-59de2b9819400"  
cache-control: max-age=300s  
content-type: application/javascript  
accept-ranges: bytes  
content-encoding: br  
server: Akamai Resource Optimizer  
x-content-type-options: nosniff  
x-edgeconnect-midmile-rtt: 225  
x-edgeconnect-origin-mex-latency: 210  
x-frame-options: SAMEORIGIN  
x-tzla-edge-age: 604800.000  
...  
x-tzla-edge-was-304: false  
x-varnish: 4828285 7800370  
content-length: 28012  
date: Fri, 21 Feb 2020 19:56:35 GMT  
server-timing: cdn-cache; desc=HIT, edge; dur=1  
strict-transport-security: max-age=15768000  
X-Firefox-Spdy: h2

-----  
(7) https://www.googletagmanager.com/gtm.js?id=GTM-KMG5DM

GET /gtm.js?id=GTM-KMG5DM HTTP/2.0  
Host: www.googletagmanager.com  
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.12; rv:73.0)  
Gecko/20100101 Firefox/73.0  
Accept: \*/\*  
Accept-Language: en-US,en;q=0.5

Accept-Encoding: gzip, deflate, br  
DNT: 1  
Connection: keep-alive  
Referer: https://www.tesla.com/

HTTP/2.0 200 OK  
content-type: application/javascript; charset=UTF-8  
access-control-allow-origin: http://www.googletagmanager.com  
access-control-allow-headers: Cache-Control  
access-control-allow-credentials: true  
content-encoding: br  
vary: Accept-Encoding  
date: Fri, 21 Feb 2020 19:56:35 GMT  
expires: Fri, 21 Feb 2020 19:56:35 GMT  
cache-control: private, max-age=900  
last-modified: Fri, 21 Feb 2020 18:00:00 GMT  
strict-transport-security: max-age=31536000; includeSubDomains  
server: Google Tag Manager  
content-length: 37590  
x-xss-protection: 0  
alt-svc: quic=":443"; ma=2592000; v="46,43",h3-Q050=":443"; ma=2592000,h3-Q049=":443"; ma=2592000,h3-Q048=":443"; ma=2592000,h3-Q046=":443"; ma=2592000,h3-Q043=":443"; ma=2592000  
X-Firefox-Spdy: h2

-----  
(8) https://www.tesla.com/themes/custom/tesla\_frontend/assets/favicons/favicon-196x196.png

GET /themes/custom/tesla\_frontend/assets/favicons/favicon-196x196.png HTTP/2.0  
Host: www.tesla.com  
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.12; rv:73.0) Gecko/20100101 Firefox/73.0  
Accept: image/webp,\*/\*  
Accept-Language: en-US,en;q=0.5  
Accept-Encoding: gzip, deflate, br  
DNT: 1  
Connection: keep-alive  
Cookie: optimizelyEndUserId=oeu1468950575184r0.875588214634862; ...

HTTP/2.0 200 OK  
content-type: image/png  
content-length: 4455  
last-modified: Thu, 23 Jan 2020 20:14:27 GMT  
etag: "1167-59cd449b2aec0"  
cache-control: max-age=300s  
x-tzla-edge-hostname-vcl: drupal8-prod  
...  
x-tzla-edge-server: sjc04pltegr66.teslamotors.com  
x-tzla-edge-cache-hits: 3  
accept-ranges: bytes  
date: Fri, 21 Feb 2020 19:56:35 GMT  
server-timing: cdn-cache; desc=HIT, edge; dur=1  
strict-transport-security: max-age=15768000  
X-Firefox-Spdy: h2

-----  
(9) https://location.teslamotors.com/geoip/v1.0.3/city/?pc=0.5766313295047396

GET /geoip/v1.0.3/city/?pc=0.5766313295047396 HTTP/1.1  
Host: location.teslamotors.com

User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.12; rv:73.0)  
Gecko/20100101 Firefox/73.0  
Accept: \*/\*  
Accept-Language: en-US,en;q=0.5  
Accept-Encoding: gzip, deflate, br  
Origin: https://www.tesla.com  
DNT: 1  
Connection: keep-alive  
Referer: https://www.tesla.com/

HTTP/1.1 200 OK  
Access-Control-Allow-Methods: GET, POST, PUT, DELETE, PATCH, OPTIONS  
Access-Control-Allow-Headers: Content-Type, api\_key  
Access-Control-Allow-Credentials: true  
Content-Type: application/json; charset=utf-8  
Content-Length: 1339  
ETag: W/"53b-wYyFMHpY5twQ+2w2cWXYwRKzvK"  
X-Varnish: sjc04plwwwvr22.sjc05.teslamotors.com  
X-Frame-Options: SAMEORIGIN  
X-Content-Type-Options: nosniff  
X-Cache-Hits: 0  
Access-Control-Allow-Origin: \*  
Accept-Ranges: bytes  
Cache-Control: public, max-age=3600  
Date: Fri, 21 Feb 2020 19:56:35 GMT  
Connection: keep-alive  
Set-Cookie:  
ak\_bmsc=5F03B74DD05BA05585CF93F0AC9026FE1734003D3E480000F335505EE7401718~pl ...

-----  
(10) https://www.google-analytics.com/analytics.js

GET /analytics.js HTTP/1.0  
Host: www.google-analytics.com  
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.12; rv:73.0)  
Gecko/20100101 Firefox/73.0  
Accept: \*/\*  
Accept-Language: en-US,en;q=0.5  
Accept-Encoding: gzip, deflate, br  
DNT: 1  
Connection: keep-alive  
Referer: https://www.tesla.com/

HTTP/1.0 200 OK  
strict-transport-security: max-age=10886400; includeSubDomains; preload  
date: Fri, 21 Feb 2020 18:56:23 GMT  
expires: Fri, 21 Feb 2020 20:56:23 GMT  
last-modified: Thu, 06 Feb 2020 00:21:02 GMT  
x-content-type-options: nosniff  
content-type: text/javascript  
vary: Accept-Encoding  
content-encoding: gzip  
server: Golfe  
content-length: 18174  
cache-control: public, max-age=7200  
age: 3613  
X-Firefox-Spdy: h2

-----  
(11) https://stats.g.doubleclick.net/r/collect?v=1&aip=1&t=dc&\_r=3&tid=UA-9152935-



1&cid=386230066.1468950577&jid=201852300&\_gid=372806652.1582314996&gjid=1326203576&\_v=j81&z=1157821414

GET /r/collect?v=1&aip=1&t=dc&\_r=3&tid=UA-9152935-1&cid=386230066.1468950577&jid=201852300&\_gid=372806652.1582314996&gjid=1326203576&\_v=j81&z=1157821414 HTTP/2.0  
Host: stats.g.doubleclick.net  
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.12; rv:73.0)  
Gecko/20100101 Firefox/73.0  
Accept: image/webp, \*/\*  
Accept-Language: en-US,en;q=0.5  
Accept-Encoding: gzip, deflate, br  
Referer: https://www.tesla.com/  
DNT: 1  
Connection: keep-alive

HTTP/2.0 302 Found  
location: https://www.google.com/ads/ga-audiences?v=1&tid=UA-9152935-1  
access-control-allow-origin: \*  
strict-transport-security: max-age=10886400; includeSubDomains; preload  
date: Fri, 21 Feb 2020 19:56:36 GMT  
pragma: no-cache  
expires: Fri, 01 Jan 1990 00:00:00 GMT  
cache-control: no-cache, no-store, must-revalidate  
last-modified: Sun, 17 May 1998 03:00:00 GMT  
content-type: text/html; charset=UTF-8  
server: Golfe2  
content-length: 36  
X-Firefox-Spdy: h2

---

**Q1.** What are the names of four (4) of the six (6) web servers that return resources used in the tesla.com home page?

**A1:**

**Q2.** Some of the transactions have several headers that start with “x-tzla-edge-.” What do they refer to?

**A2:**

**Q3.** Are any CDN or CDNs used in tesla.com transactions? If yes, what are their names?

**A3:**

**Q4.** Are any of the servers involved in the transactions supporting CORS?

**A4:**

**Q5.** Are any redirects executed in these transactions, and if any, in which transactions?

**A5.**

**Q6.** Does tesla.com use Google Analytics, and if yes, where?

**A6:**

**Q7.** Is HTST used in any transactions?

**A7:**

**Q8.** What is the purpose of transaction 9?

**A8:**

**Q9.** What type of compression, if any, is used in these transactions?

**A9:**

**Q10.** What is the URL at transaction 12 (not shown)?

**A10:**

## **PYTHON QUESTIONS [20 PTS]**

Each question is worth 5 points.

**Q1:** Which of the following is true in Python?

**A1:**

- ☐ Python is not strictly typed
- ☐ Function names are not case-sensitive
- ☐ Identifiers cannot contain spaces.
- ☐ Local variables are restricted only to a function or class
- ☐ Variable names begin with a dollar sign (\$) followed by letters, numbers or underscore (\_)

**A2:** Which of the following is true in Python?

- ☐ Supports both procedural and object-oriented paradigm
- ☐ A bit longer than C, C++, Java
- ☐ Allows splitting program into modules
- ☐ Constants have global scope
- ☐ Sets can be used as keys in dictionaries

**Q3:** Consider the Python code snippet:

```
>>> knights = {'gallahad': 'the pure', 'robin': 'the  
brave'}  
>>> for k, v in knights.items():  
...     print(k, v)
```

What string gets printed in the output?

**A3:**

**Q4:** Consider the Python code snippet:

```
>>> basket = {'apple', 'orange', 'apple', 'pear', 'orange',  
'banana'}  
>>> print(basket)
```

What string gets printed in the output?

**A4:**

## CSS QUESTIONS [10 PTS]

Below are lines extracted from the CSS sheet of microsoft.com. For each line answer the question. Each question is worth two points. NO PARTIAL CREDIT.

```
.x-hidden-none-mobile-vp {  
  display:none  
}
```

**Q1.** Explain the purpose of the line above

**A1:**

```
#uhfCookieAlert .m-alert,  
.epb .m-alert {  
  margin-top:0  
}
```

**Q2.** Provide 2 different sample uses of the CSS above in HTML.

**A2:**

```
.c-uhf-menu li a {  
  display:block;  
  white-space:normal }
```

**Q3.** Provide a sample use of the CSS above in HTML.

**A3:**

```
.glyph-shopping-bag span.shopping-cart-amount {  
  background:#0078D7;  
  border:1px solid #FFF;  
  border-radius:10px;  
  color:#FFF;  
  display:inline-block;  
  font-size:10px;  
  line-height:10px;  
  margin:16px 2px 0;  
  min-width:14px;  
  padding:2px 4px  
}
```

**Q4.** Provide a sample use of the CSS above in HTML.

**A4:**

```
.cancel-search:hover {  
  color:#f2f2f2  
}
```

**Q5.** Explain the purpose of the line above

**A5:**