# Midterm exam

**Due:** Thursday March 11, 2021 7:00 PM (Pacific Standard Time)

## Assignment description

Hi there... Good luck on the test!

There are 30 questions, each worth 1 point. You can answer **any 25** of them. You can answer more if you like - we will add up all your responses (including partially correct ones), but cap your score at 25 (25 is the max you can score on the exam, regardless of how many questions you answer). It's a cool form of 'bonus'!

Quality is more important than quantity! In other words, answer exactly what's asked, instead of providing extraneous/tangential responses (even though they might be factual) .

Reminder: **you can look up anything, anywhere**, if you want!

**Answer in your own words, and, DO NOT cheat...**

## Submit your assignment                                           ⓘ Help

## Q1 (1 point)

In https, what is the initial sequence of steps, to establish a secure communication channel?

**Edit**   Preview

Please enter your response to Q1

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## Q2 (1 point)

Name, and explain in a sentence each, two JavaScript features/aspects that are absent in other programming languages such as Python, Java, C++ etc.

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Please enter your response to Q2

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## Q3 (1 point)

Mention and briefly discuss (with a sentence each) at least two characteristics that make JSON an ideal format for data specification.

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Please enter your response to Q3

## Q4 (1 point)

What is the main reason why DNS exists? Explain in a few lines, with an example.

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> Please enter your response to Q4

## Q5 (1 point)

What is the big advantage in representing a web page's elements, in a structured tree form, ie as a DOM? Be specific.

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> Please enter your response to Q5

## Q6 (1 point)

What does XHR permit? In other words, what makes it useful? Explain with an example.

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Please enter your response to Q6

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## Q7 (1 point)

What is the most 'popular' server response that even the lay (non technical) public would know about, and when does the server generate it?

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Please enter your response to Q7

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## Q8 (1 point)

What is the predecessor of fetch(), and how does fetch() improve on it?

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Please enter your response to Q8

## Q9 (1 point)

What purpose/function does a 'certificate authority' ('CA') serve?

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Please enter your response to Q9

## Q10 (1 point)

What are some mechanisms using which, a webserver is able to serve more than just HTML documents? Name, and briefly discuss, at least two.

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Please enter your response to Q10

## Q11 (1 point)

What are some similarities, and differences, between HTML and XML?

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Please enter your response to Q11

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## Q12 (1 point)

What advantages do cloud servers (eg. Azure) provide, over 'traditional' ("dot com") servers?

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Please enter your response to Q12

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## Q13 (1 point)

What are the two mechanisms by which a client makes a request to a server, when is each used?

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Please enter your response to Q13

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## Q14 (1 point)

When uploading a Python app to a cloud server, why do we also include a 'requirements.txt' file?

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Please enter your response to Q14

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## Q15 (1 point)

What is HTTP built on? Explain using a few sentences, and a diagram.

## Q16 (1 point)

What is the following form of JS code called?

```js
let t = (function(){
        return 0.5*(Math.random()+Math.random());
    }());
```

What is one good use for it?

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Please enter your response to Q16

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## Q17 (1 point)

In the context of a web app, what is an API? Explain, in a couple of sentences.

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Please enter your response to Q17

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## Q18 (1 point)

What is JavaScript's main purpose? Please be specific.

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Please enter your response to Q18

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## Q19 (1 point)

Communication from a client to a web server, and a web server to a client, are structurally similar - in what sense?

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Please enter your response to Q19

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## Q20 (1 point)

How does WSDL get used?

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Please enter your response to Q20

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## Q21 (1 point)

What is a big difference between HTTP/1 and HTTP/1.1?

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Please enter your response to Q21

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## Q22 (1 point)

What is a 'blob' response type from a server, useful for?

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## Q23 (1 point)

In what sense is a callback function, not like a regular function? Be specific.

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Please enter your response to Q23

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## Q24 (1 point)

What's one use for base64 encoding?

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Please enter your response to Q24

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## Q25 (1 point)

What are two uses (functions) of a proxy server?

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Please enter your response to Q25

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## Q26 (1 point)

In structuring a document (eg a web page), why separate form and function (ie. style and content)?

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Please enter your response to Q26

## Q27 (1 point)

In what sense can a modern web app be seen as a generalization of classic software development?

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Please enter your response to Q27

## Q28 (1 point)

In a language such as Python or C++ etc, the following set of function calls will execute, in sequence - but not necessarily, in JS:

```
x = a(...)
y = b(...)
z = c(x,y)
```

Why not? How would we fix that (ie ensure it)?

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Please enter your response to Q28

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## Q29 (1 point)

How are we able to have alternatives to HTML, CSS and JS, running in the browser?

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Please enter your response to Q29

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## Q30 (1 point)

What are **two** new things you've learned from the course thus far? Explain each using a sentence or two.

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Please enter your response to Q30

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