



CSCI 571: Web Tech[nologies]
Summer '25
Midterm Exam, duration 1 hour

Name

Student ID

Tips for making sure Gradescope can read your exam:

1. Make sure your name and Student ID number is clearly written on **this** coversheet. Also write your full name at the top of **every** following page, including any additional blank pages you use.
2. You must only use colored scratch pages provided by the proctor. Put them at the back of your exam.
3. Ensure that all pages are facing the same direction.
4. Answer each question in the **area designated** for its answer (do not run over into the next question's answer space).
5. Keep your exam stapled.

Please read the five items below , carefully, before you start the exam - it's how we roll :)

1. There are 12 questions, each worth 3 points. You can pick any 10 (ie. for 30 points) . OPTIONALLY you can answer 11, or all 12. We will score everything you

write, add up the points (even partial ones!). Note that your total will be 'capped' at 30, ie. you will not get more than 30 [in other words: if (total>30) total=30;]. Such a deal! Also, please just answer the question, don't write 'more' (ie. provide irrelevant info) - quantity !> quality.

2. Please STOP writing when the time is up - if you continue writing, you will get a five point penalty.

3. You can use your 'cheat'sheet, nothing else. If you are observed 'cheat'ing, you'll get a 0 for the exam, AND, be reported to OAI [fyi: we report first, THEN notify you]. Please ***DO NOT*** cheat.

4. Several questions involve 'three' items/aspects [1 point for each] :)

5. Have fun!

Q1. JavaScript ('JS') is the usual (most common) language whose code runs in the browser. But we looked at, or talked about, alternatives (ie. other languages whose code can also run in the browser).

a. [2 points] name TWO such (non-JS) languages.

b. [1 point] how does this work, ie. how are non-JS languages able to be used?

Q2.

a. [1 point] What are 'XHR' and 'fetch'?

b. [1 point] What is their history, ie how did they originate?

c. [1 point] Discuss a use case for them [ie. how we can put them to use].

Q3. HTTP 1.0 has been steadily evolving over the years. Name, and briefly discuss, three evolved versions of HTTP [ie. what feature was introduced in each].

Q4. What are three ways to style HTML elements using CSS? Provide a small example for each [OK if your CSS syntax isn't perfect but the overall answer does need to be precise].

Q5.

a. [1 point] What are 'MIME types' for?

b. [2 points] Name two MIME types and state their purpose (ie. what they enable).

Q6. At first, all HTML sent over by the server was 'static' - but today it is almost all, 'dynamic'.

Discuss three ways/techniques using which the server is able to respond with dynamic HTML to a client request.

Q7.

'Graphics in the browser' - what enables this?

In the early days, how was graphics handled by the browser?

What is a reason to not prefer graphics on the browser?

Q8.

a. 'Frontend' for web tech is an evolving entity - eg. smartphones were not frontends when the web originated in the 1993. What is a promising newer frontend?

b. If the web evolves to cater to AI agents too, what would that look like (ie in terms of clients and how they interact with servers)?

c. What were the web's (ie WWW's) influences? You can name one, or two.

Q9.

[1 point] What are 'web frameworks' (eg. React, Flutter) for [what do they provide, over raw JS]?

[2 points] What was one of the very first frameworks [it is still in use although not heavily]? What notational simplification did it provide (ie. code shortcut)?

Q10. 'Literate programming' involves notebooks (mix of static ie non-code content, and code). What are 3 literate programming examples we covered [including non-web ones]?

Q11.

[1 point] How do 'URL queries' [sending parameter values] work?

[2 points] What is the name given to a wildly popular form of URL-based request (query) sent to a server? Provide an example (no need for exact syntax).

Q12. The 'Holy Trinity' (or 'triumvirate') of web tech is what what? Name them AND discuss their purpose (ie what each provides).