

Learning Objectives

CIS 371 — Winter 2023

Origins and Design of the WWW

- Q Describe the motivation for, and the original design of, the World Wide Web.

Implementation

- I1 Explain the operation of a web browser and/or server
- I2 Label the parts of a URL
- I3^h Trace the “dialogue” of HTTP messages between a server and a browser under varying circumstances.
- I4^h Explain the effects of specific HTTP request and response headers.

HTML/CSS

- HC1^h Produce a complete, well-formatted, well-documented HTML document with at least 20 elements and a DOM tree of depth 5 or greater.
- HC2^h Style an HTML document using CSS
- HC3 Apply CSS rules to a snippet of HTML
- HC4 Predict which CSS rule will apply and explain why
- HC5^h Produce a complete, well-formatted, well-documented HTML document using a templating system such as EJS
- HC6 Determine whether a GET or POST should be used in a given situation.

Cookies

- C1 Explain the behavior and/or implementation of HTML cookies
- C2^h Construct a web site that uses cookies

Sessions

- SS1 Explain the behavior and/or implementation of HTML sessions.
- SS2^h Construct a web site that uses sessions

Testing

- T^h Use a testing framework to run unit tests on part of a web app.

Web App Server

- SV1^h Set up a server framework (e.g., Express.js) that uses an MVC structure with routes
- SV2^h Set up a server framework that provides a complete set of CRUD operations for a resource using a relational database.

JavaScript

- JS1 Write client-side code that react to events and manipulates the DOM
- JS2^h Write client-side JavaScript that connects to an API and retrieves data.
- JS3^h Use JavaScript promises.

React

- R1 Use React to render a page with multiple components given a hard-coded data structure
- R2 Use React to respond to user input
- R3^h Fetch data from an API server and display it in a React page
- R4^h Use React to provide a complete set of CRUD operations to an API

Security

- SC Be able to thoroughly describe (a) SQL injection, (b) CORS, and (c) CSRF as well as how to prevent these attacks

Responsive

- RS^h Use Bootstrap or a similar framework to make a web page well-styled and responsive
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Key

- i** Implicit: This objective will not be evaluated explicitly.
Knowledge of this objective is necessary to successfully master other objectives.
- h** Homework: This objective is satisfied by completing a homework assignment.
- l** Lab: This objective is satisfied by completing a lab.
- p** Project: This objective is satisfied by completing a project.
- f** Future: This objective will not be used this semester.