CPSC 332 Web Development

Gonzaga University

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Homework 4 – JavaScript

Individual, non-collaborative assignment

Learner Objectives

At the conclusion of this programming assignment, participants should be able to:

- Demonstrate basic JavaScript interactions in the browser
- Use of event handlers to dynamically interact with and modify HTML elements
- Modify CSS styling using JavaScript

Prerequisites

Before starting this programming assignment, participants should:

- Have completed chapter 6 and 7 in the class zyBook
- Create a basic HTML web page using HTML and CSS

Overview and Requirements

For this assignment, you will be creating a quiz style game following a pre-existing tutorial using HTML, CSS, and JavaScript. You will then modify starter code based on the tutorial quiz game to create a flash card game.

Submitting Assignments

Submitting your assignment requires submitting in two steps:

1. Submit your assignment to the appropriate GitHub Classroom repository. You'll find the invitation URL as part of this assignment and on the Canvas assignment page.

2. Submit your GitHub Classroom repository URL to Canvas (Line 1).

3. *Submit your GitHub Pages URL to Canvas (Line 2)*

Note: *By submitting your code to be graded, you are stating that your submission does not violate the CPSC 332 Academic Integrity Policy outlined in the syllabus.*

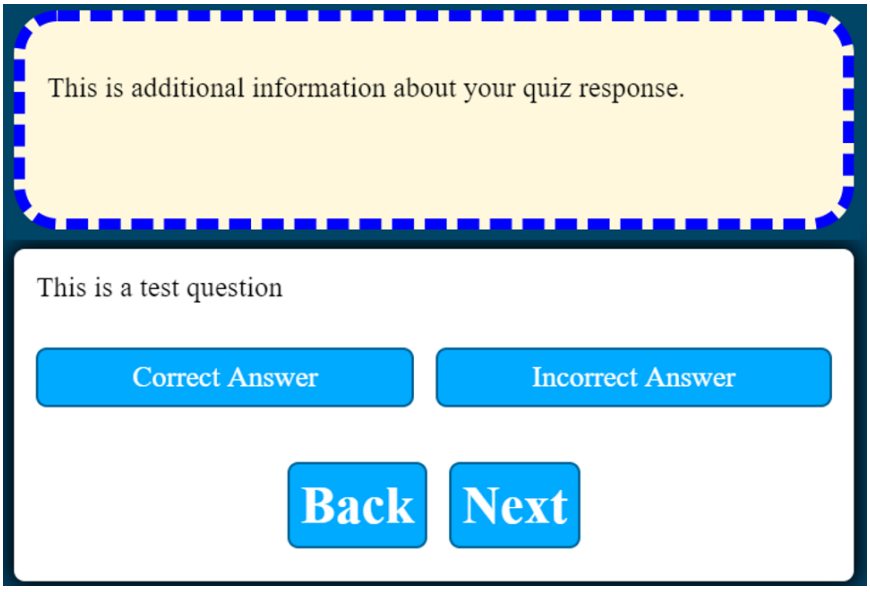
Assignment Tasks (Part 1)

1. Your first task is to implement the "JavaScript-Quiz-App" web page from the tutorial and then build off the provided (modified) version as your starter code for the remainder of the submission.
    a. Follow the (**27 minute**) tutorial here: https://www.youtube.com/watch?v=riDzcEQbX6k
    b. You should try to complete and understand the code alongside the video tutorial. Adjust playback speed and/or pause-play as needed.
    c. Accept the assignment (https://classroom.github.com/a/sVT5v-7q) and pull the starter code to your local repository as a starting point (a.k.a. clone the repository first).
2. **You should start the remainder of the assignment from the provided starter code (pulled into your GitHub Classroom repository and cloned to a local repository on your own machine).**
3. Convert the quiz app into a **flash card** app meeting the requirements outlined below.
4. NOTE: if you later push this project to your personal/public GitHub (or other) repository, make sure to cite the original source code (see the starter code README file).

Flash Card App Requirements

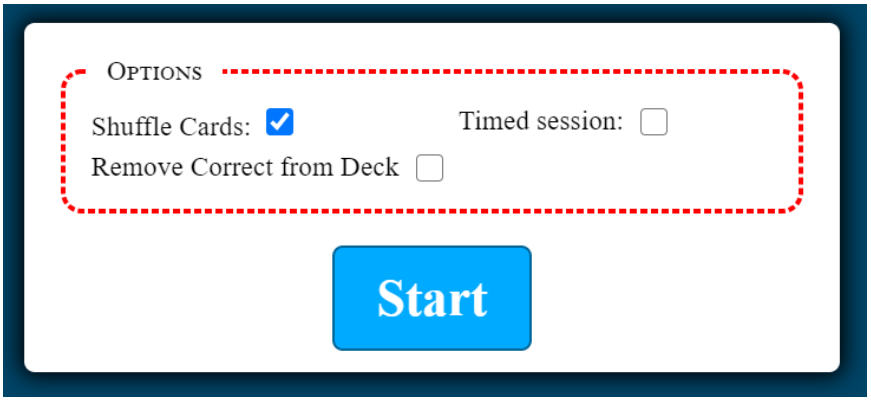
note: *examples may show partial changes that do not fully meet all requirements and are only examples of one specific feature change. Styles are chosen to highlight features but do not need to be matched for your submission.*

1. Modify the correct/incorrect question response to also display more information about the correct answer. You must use a JavaScript event to dynamically generate an HTML container above the question box with the additional information (example image below).
2. On moving to the next card, you must dynamically remove the container and all contents generated in step 1 using JavaScript (i.e., you cannot just hide the element).
3. Add navigation buttons to each card. Users should be able to navigate forwards and backwards through questions (example image below). Add an appropriate JavaScript function to achieve the additional back navigation.



4. The restart button (shown once you reach the end of the question set) and its corresponding function should be modified to start back at card 1 and not reshuffle the deck.

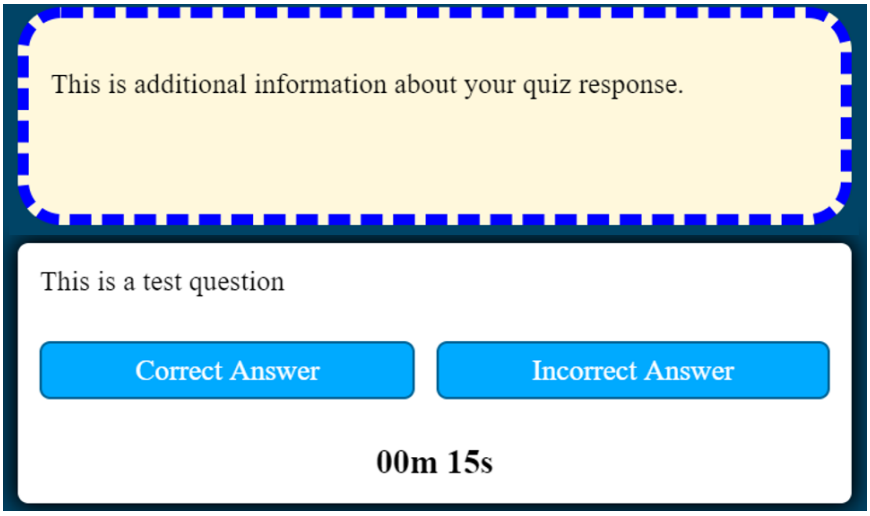
5. Before starting a session, users should be able to configure starting options that modify starting parameters (see example image below). The options should not be visible during a session, only prior to starting. Hide the options using JavaScript.
    a. A checkbox that enables or disables **card shuffling** (default to checked and card order shuffled).
        i. If shuffle cards is disabled, questions should be presented in the order they are entered in the array list.
    b. A checkbox that enables or disables a **timed session** (default to unchecked and no timer)
        i. If timed session is enabled, a timer should display underneath the question card.
    c. A checkbox that enables or disables **removing correctly answered questions** from the display cycle (default to unchecked and not removing questions when answered correctly).
        i. If enabled, questions should be removed from the questions array and moved to a correctly answered questions array.



6. Each of the options configured in step #5 should have an **event handler** associated with checking or unchecking the option. The check/uncheck event should trigger a JavaScript function that configures the quiz options appropriately.
    a. Use a global object variable to store the current option settings for starting the game.

Note: you should NOT be using inline onclick() functions, you must implement an event handler!

7. For the timed session option in #5b, you must
    a. display the time elapsed in minutes and seconds
    b. briefly flash the text background color red every half minute, i.e., blink red-normal-red-normal on second 30-31-32-33 and then at 60-61-62-63, etc. using JavaScript.



8. Create a set of at least 10 questions (theme of your choice) to populate the card deck.
    a. The minimum number of possible answers is 2.
    b. At least half of your questions need to have more than 2 possible answers.
9. Customize the style of your flash card app to match the theme you've chosen for your question set.

Part 2: GitHub Classroom Submission

Part of the submission will require you to push your local repository to the GitHub Classroom remote repository. Follow the tutorial mentioned previously in this document to do so.

- https://classroom.github.com/a/sVT5v-7q

Part 3: Uploading your website to a remote host (GitHub Pages)

See the documentation from the previous assignments, the process will be the same.

Grading Guidelines

This assignment is worth 100 points. Your assignment will be evaluated based on a completeness of your submission and adherence to the web page requirements. For this assessment, the **emphasis is on your use of JavaScript features** throughout your web page. We will grade according to the following criteria:

- 35 pts for General Features
  - 7 pts for a dynamically generated an HTML container above the question box with the additional information
  - 3 pts for dynamically removing the "more information" container and all contents generated in using JavaScript
  - 5 pts for back and forward navigation buttons using an appropriate JavaScript function to achieve the additional back navigation
  - 5 pts for modifying the restart button to start back at card 1 and not reshuffle the deck
  - 5 pts for using a global object variable to store the current option settings for starting the game
  - 5 pts for creating a set of at least 10 questions with no fewer than 2 possible answers each and 5/10 with more than 2 possible answers
  - 5 pts for a CSS theme matching your question theme
- 35 pts for Options Features
  - 4 pts for an options menu including the 3 required options and displayed only before starting a session
  - 2 pts for hiding the options menu when starting a session
  - 2 pts for a checkbox that enables or disables card shuffling with a default of checked
  - 2 pts for the shuffle cards option working correctly
  - 2 pts for a checkbox that enables or disables a timed session with a default of unchecked
  - 5 pts for the timed session working correctly
  - 2 pts for the timed session displaying in the required format (##m ##s)
  - 5 pts for the timed session using JavaScript to change the background color as required
  - 2 pts for a checkbox that enables or disables removing correctly answered questions from the display cycle with a default of unchecked
  - 3 pts for questions being removed from the deck correctly when the option is enabled
  - 6 pts for using event handlers to trigger a JavaScript function to configure the quiz options appropriately
- 30 pts Misc.
  - 5 pts for a block **comment** at the top of the page with your name, the class name, assignment name, and last modified date.
  - 5 pts for passing the **validator** website check with no errors or warnings (***excluding the 3 hsl errors due to using CSS variables***): https://validator.w3.org/
    - -1 point for each error/warning
  - 5 pts for your GitHub Pages URL loading successfully
  - 15 pts for adhering to directions and following formatting / "best practices" as discussed in the course zyBook section 3.7