

This is CS50

CS50's Introduction to Computer Science

OpenCourseWare

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Trivia

Write a webpage that lets users answer trivia questions.

Trivia!

Part 1: Multiple Choice

What is the approximate ratio of people to sheep in New Zealand?

☐ 6 people per 1 sheep ☐ 3 people per 1 sheep ☐ 1 person per 1 sheep ☐ 1 person per 3 sheep ☐ 1 person per 6 sheep

Part 2: Free Response

In which country is it illegal to own only one guinea pig, as a lone guinea pig might get lonely?

Getting Started

Open [VS Code \(https://cs50.dev/\)](https://cs50.dev/).

Start by clicking inside your terminal window, then execute `cd` by itself. You should find that its “prompt” resembles the below.

```
$
```

Click inside of that terminal window and then execute

```
wget https://cdn.cs50.net/2023/fall/psets/8/trivia.zip
```

followed by Enter in order to download a ZIP called `trivia.zip` in your codespace. Take care not to overlook the space between `wget` and the following URL, or any other character for that matter!

Now execute

```
unzip trivia.zip
```

to create a folder called `trivia`. You no longer need the ZIP file, so you can execute

```
rm trivia.zip
```

and respond with “y” followed by Enter at the prompt to remove the ZIP file you downloaded.

Now type

```
cd trivia
```

followed by Enter to move yourself into (i.e., open) that directory. Your prompt should now resemble the below.

```
trivia/ $
```

If all was successful, you should execute

```
ls
```

and you should see an `index.html` file and a `styles.css` file.

If you run into any trouble, follow these same steps again and see if you can determine where you went wrong!

Implementation Details

Design a webpage using HTML, CSS, and JavaScript to let users answer trivia questions.

- In `index.html`, add beneath “Part 1” a multiple-choice trivia question of your choosing with HTML.
 - You should use an `h3` heading for the text of your question.
 - You should have one `button` for each of the possible answer choices. There should be at least three answer choices, of which exactly one should be correct.
- Using JavaScript, add logic so that the buttons change colors when a user clicks on them.
 - If a user clicks on a button with an incorrect answer, the button should turn red and text should appear beneath the question that says “Incorrect”.
 - If a user clicks on a button with the correct answer, the button should turn green and text should appear beneath the question that says “Correct!”.
- In `index.html`, add beneath “Part 2” a text-based free response question of your choosing with HTML.
 - You should use an `h3` heading for the text of your question.
 - You should use an `input` field to let the user type a response.
 - You should use a `button` to let the user confirm their answer.

- Using JavaScript, add logic so that the text field changes color when a user confirms their answer.
 - If the user types an incorrect answer and presses the confirmation button, the text field should turn red and text should appear beneath the question that says “Incorrect”.
 - If the user types the correct answer and presses the confirmation button, the input field should turn green and text should appear beneath the question that says “Correct!”.

Optionally, you may also:

- Edit `styles.css` to change the CSS of your webpage!
- Add additional trivia questions to your trivia quiz if you would like!

Walkthrough

This video was recorded when the course was still using CS50 IDE for writing code. Though the interface may look different from your codespace, the behavior of the two environments should be largely similar!

 CS50



Hints

- Use `document.querySelector` (<https://developer.mozilla.org/en-US/docs/Web/API/Document/querySelector>) to query for a single HTML element.
- Use `document.querySelectorAll` (<https://developer.mozilla.org/en-US/docs/Web/API/Document/querySelectorAll>) to query for multiple HTML elements that match a query. The function returns an array of all matching elements.

► Not sure how to solve?

Testing

No `check50` for this one, as implementations will vary based on your questions! But be sure to test both incorrect and correct responses for each of your questions to ensure that your webpage responds appropriately.

Run `http-server` in your terminal while in your `trivia` directory to start a web server that serves your webpage.

How to Submit

```
submit50 cs50/problems/2024/x/trivia
```

Want to see the staff's solution? You can find two ways of solving the problem here!

▼ Creating event listeners with JavaScript

```
<!DOCTYPE html>

<html lang="en">
  <head>
    <link href="https://fonts.googleapis.com/css2?family=Montserrat:wght@500&dis
    <link href="styles.css" rel="stylesheet">
    <title>Trivia!</title>
    <script>

      // Wait for DOM content to load
      document.addEventListener('DOMContentLoaded', function() {

        // Get all elements with class "correct"
        let corrects = document.querySelectorAll('.correct');

        // Add event listeners to each correct button
        for (let i = 0; i < corrects.length; i++) {
          corrects[i].addEventListener('click', function() {

            // Set background color to green
            corrects[i].style.backgroundColor = 'Green';

            // Go to parent element of correct button and find the first
            corrects[i].parentElement.querySelector('.feedback').innerHTML

          });
        }
      });
    </script>
  </head>
</html>
```

```

    }

    // When any incorrect answer is clicked, change color to red.
    let incorrects = document.querySelectorAll(".incorrect");
    for (let i = 0; i < incorrects.length; i++) {
        incorrects[i].addEventListener('click', function() {

            // Set background color to red
            incorrects[i].style.backgroundColor = 'Red';

            // Go to parent element of correct button and find the first
            incorrects[i].parentElement.querySelector('.feedback').inner
        });
    }

    // Check free response submission
    document.querySelector('#check').addEventListener('click', function() {
        let input = document.querySelector('input');
        if (input.value === 'Switzerland') {
            input.style.backgroundColor = 'green';
            input.parentElement.querySelector('.feedback').innerHTML =
        }
        else {
            input.style.backgroundColor = 'red';
            input.parentElement.querySelector('.feedback').innerHTML =
        }
    });
});
</script>
</head>
<body>
    <div class="header">
        <h1>Trivia!</h1>
    </div>

    <div class="container">
        <div class="section">
            <h2>Part 1: Multiple Choice </h2>
            <hr>
            <h3>What is the approximate ratio of people to sheep in New Zealand?
            <button class="incorrect">6 people per 1 sheep</button>
            <button class="incorrect">3 people per 1 sheep</button>
            <button class="incorrect">1 person per 1 sheep</button>
            <button class="incorrect">1 person per 3 sheep</button>
            <button class="correct">1 person per 6 sheep</button>
            <p class="feedback"></p>
        </div>

        <div class="section">
            <h2>Part 2: Free Response</h2>
            <hr>
            <h3>In which country is it illegal to own only one guinea pig, as a
            <input type="text"></input>
            <button id="check">Check Answer</button>
            <p class="feedback"></p>
        </div>
    </div>

```

```

    </body>
</html>

```

▼ Creating event listeners with HTML

```

<!DOCTYPE html>

<html lang="en">
  <head>
    <link href="https://fonts.googleapis.com/css2?family=Montserrat:wght@500&dis
    <link href="styles.css" rel="stylesheet">
    <title>Trivia!</title>
    <script>
      function checkMultiChoice(event) {

        // Get the element which triggered the event
        let button = event.target;

        // Check if the element's inner HTML matches expected answer
        if (button.innerHTML == '1 person per 6 sheep') {
          button.style.backgroundColor = 'Green';
          button.parentElement.querySelector('.feedback').innerHTML = 'Corr
        }
        else {
          button.style.backgroundColor = 'Red';
          button.parentElement.querySelector('.feedback').innerHTML = 'Inco
        }
      }

      function checkFreeResponse(event) {

        // Get the element which triggered the event
        let button = event.target;

        // Get the input element corresponding to the button
        let input = button.parentElement.querySelector('input');

        // Check for correct answer
        if (input.value === 'Switzerland') {
          input.style.backgroundColor = 'Green';
          input.parentElement.querySelector('.feedback').innerHTML = 'Corr
        }
        else {
          input.style.backgroundColor = 'Red';
          input.parentElement.querySelector('.feedback').innerHTML = 'Inco
        }
      }
    </script>
  </head>
  <body>
    <div class="header">
      <h1>Trivia!</h1>
    </div>

    <div class="container">
      <div class="section">
        <h2>Part 1: Multiple Choice </h2>

```

```
<hr>
<h3>What is the approximate ratio of people to sheep in New Zealand?
<button onclick="checkMultiChoice(event)">6 people per 1 sheep</button>
<button onclick="checkMultiChoice(event)">3 people per 1 sheep</button>
<button onclick="checkMultiChoice(event)">1 person per 1 sheep</button>
<button onclick="checkMultiChoice(event)">1 person per 3 sheep</button>
<button onclick="checkMultiChoice(event)">1 person per 6 sheep</button>
<p class="feedback"></p>
</div>

<div class="section">
  <h2>Part 2: Free Response</h2>
  <hr>
  <h3>In which country is it illegal to own only one guinea pig, as a
  <input type="text"></input>
  <button onclick="checkFreeResponse(event)">Check Answer</button>
  <p class="feedback"></p>
</div>
</div>
</body>
</html>
```


