

Lab 02 - Building Interactive Websites

CS 1301 - Intro to Computing - Fall 2022

Important

- Due Date: **Tuesday, November 22nd, 11:59 PM.**
- This is an individual assignment. High-level collaboration is encouraged, **but your submission must be uniquely yours.**
- Resources:
 - TA Helpdesk
 - Ed Discussion
- **This assignment is meant to be a self-guided exploration of web development. TAs will not be providing in-depth support when making your site.**

Purpose

In this lab, you will focus on some more advanced web development concepts. You will be introduced to the DOM architecture and manipulation, and some basic Javascript syntax. Specifically, you will learn how these web development tools (HTML, CSS, JavaScript) can work together to create interactive and dynamic websites.

This assignment is unrelated to any of the Python curriculum you have learned so far. None of the material in this lab will appear on future tests or other assessments.

This assignment is very different from your typical homeworks, so read the entire document before you begin.

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Getting Started

Starter Files

To start this lab, download the `Lab02.zip` file from Canvas. Extract the files by right clicking the `.zip` and clicking "Extract All" (for Windows) or double-click the file on Mac. Once you extract the files, you should see the following file structure:

```
Lab02
  - form.html
  - results.html
  - index.js
  - index.css
  - images
    - #insert all your images in this folder
```

Use these files as a base to start your lab. Make sure that all images you add from your computer are inside the **images** folder shown above. **All files related to your lab must be in this Lab02 folder.**

At any time, you can open an `.html` file in a web browser such as Safari or Chrome by double-clicking the file, or dragging the file into the browser.

Text Editors

For this lab, you can use any third-party text editor of your choice to write the HTML, CSS and JavaScript yourself. Python and IDLE **will not** be used in this assignment. The recommended text editors are [Visual Studio Code](https://code.visualstudio.com/) and [Atom](https://atom.io).

Lab Rules

You may **not** use any kind of HTML generators or website builders such as Wix, Weebly, Square-space, Webflow, etc, to make your site. You must use a text editor (such as Visual Studio Code, Atom, etc). We also **do not allow** the use of any frontend frameworks/libraries such as React, Vue, Angular, Bootstrap etc.

Lastly, all code written in this assignment must be written by you. Since all students will be following the same tutorial, we anticipate that your code will be similar. However, we are expecting completely unique content with your topics and with stylistic choices. While we encourage the use of Google to reference HTML and CSS properties, any **large sections** of code taken from another source are not permitted. **Submissions violating any of these rules will receive an automatic 0 and a report to the Office of Student Integrity.**

Additional Resources

In the Appenix, we have included some very helpful links that can provide some more information if you are confused about any of the contents discussed in the tutorial. You can also look through these links if you wish to do some in-depth exploration of these concepts. You may also go to office hours or Ed Discussion for additional questions.

Introduction

In this lab, you will be creating an entertainment quiz, similar to the ones you see on [Buzzfeed](#). These popular quizzes cover a wide range of topics from *"Which Taylor Swift album are you?"* to *"I'm Gonna Ask You 40 Questions About How You Speak — Then I'll Guess Exactly Where You Live"*, and they help people learn a bit more about themselves. You do not need to have any knowledge of personality theories or how people think in order to complete this assignment, it is purely a fun exercise, so be **creative**!

You have full creative freedom to make your quiz about anything you want, as long as the content is school appropriate. However, you are not allowed to simply copy the content of someone else's quiz online. This will be considered plagiarism, and you will receive an automatic 0 on the assignment.

To help with this assignment, we have created a tutorial video with a step-by-step guide on how to build out a simple version of an entertainment quiz. Please watch this video in its entirety. It contains full details on what is expected for this lab.

Link to Tutorial Video: <https://youtu.be/BhAtbg7kV2Y>

Lab Requirements

Your submission must meet the following minimum requirements:

File: `form.html`

- Must have your name in the `<title>` tag.
- Must create a form using the `<form>` tag.
- Must have a quiz title.
- Must have at least 5 quiz questions (with multi-options).
- Entire form must use at least 3 different types of input (dropdown, radio button, range, checkbox, password, text, etc.)
- Must style the borders of the form.
- Must change the default font used on the form .
- Must include a submit button which posts the collected data to `results.html` (hint: use the action attribute).
- Must add at least 2 styles to the submit button (changing the colors, font, size, etc).

File: `results.html`

- Must have your name in the `<title>` tag.
- Must include a link back to `form.html`
- Must style page background.
- Must change default font.

File: `index.js`

- Must contain at least 4 different logic statements which produces 4 different outputs based on the quiz responses.
 - Each logic statement must use one option from each quiz question to determine its output.
- Each output (displayed in `results.html`) must contain:
 - Title text
 - Image
 - Descriptive sentence/paragraph

You can use the file `index.css` to style all your pages, or you can create multiple stylesheets if you wish.

Extra Credit

You may receive up to **25 bonus points** on this lab (allowing for a max grade of 125/100 on Lab02) for going above and beyond what is required in your lab. These bonus points will be awarded at the discretion of the TAs. Some possible ways to earn these points include, but are not limited to:

- Include non-trivial JavaScript functionalities and interactive elements to your website. Some ideas include **alert boxes**, **animations**, **buttons**, **form validation**.
- Go above and beyond on your page design with more advanced CSS topics like css-grid, flexbox, or your own effects.
- Style, style, style and more styling.
- **Overall creativity!**

Submission Process

Lab02 will be submitted through Gradescope. You will need to submit all files used in Lab02 (all images, HTML and CSS files). To do this, compress the entire Lab02 folder that you are working in into a `.zip` file. Follow the instructions below:

1. Right click your Lab02 folder:
 - On Windows, click **Send To > Compressed (zip) folder**
 - On Mac, click **Compress "Lab02"**
2. This will create a zip folder on your computer. Rename the zip folder so that it has the following name (**DO NOT include the curly braces**):

```
{your first name}-{your last name}.zip
```

3. Upload this `.zip` file to the Lab02 assignment on **Gradescope**. To double check that you did this correctly, please download your submission and open your `form.html` in your browser to ensure everything works and looks correct.

Please put all images that you used in your website in this Lab02 folder. Otherwise, your grader will not be able to see images that you included.

Note: If you have any trouble uploading your `.zip` files, please visit office hours or ask on Ed Discussion.

Grading Rubric

File: <code>form.html</code>	Points
Title tag contains student name	3
Includes quiz title	3
Includes 5 quiz questions that have multi-options	15
Uses at least 3 different input types (dropdown, radio, etc)	10
Styles borders of the form	3
Styles page font (not default)	3
Includes a submit button	5
Styes submit button	3

File: <code>results.html</code>	Points
Title tag contains student name	3
Includes link back to <code>form.html</code>	5
Styles page background	3
Styles page font (not default)	3

File: <code>index.js</code>	Points
Contains 4 different logic statements	20
Each statement uses one option from each quiz question	10
Output (displayed on <code>results.html</code>) contains title text	3
Output (displayed on <code>results.html</code>) contains image	5
Output (displayed on <code>results.html</code>) contains description	3

Final Total (with extra credit): 125/100 points

Appendix: Learning Resources

HTML Forms

- [Basics on HTML Forms](#) - This link contains the basics on creating HTML forms, it also has a small section that covers some basics on styling your forms.
- [Input Types](#) - This link contains a comprehensive list of all the form input types. It also contains some descriptions and images that show you what those inputs look like. It also contains a comprehensive list of all the attributes that can be used in the input tag.
- [Styling HTML forms](#) - This link contains some basic tools and tips to help you style your HTML forms. The more you style, the more extra credit 😊

JavaScript Basics

- [JavaScript Documentation](#)
 - [Expressions and Operators](#) - This link contains helpful documentation on how to write expressions and operators in JavaScript. This includes arithmetic operators (`%`, `++`, `-`), logical operators (`and`, `or`, `not`), and comparison operators (`>`, `<`, `==`).
 - [Variables](#) - This link has some more information on creating variables, covers the major data types (strings, numbers, booleans, arrays), and it also covers the differences between using `const` and `let`.

The HTML DOM

- [The Document Object](#) - This link contains a list of all properties and methods that can be used on the document interface in Javascript. Some interesting things to look at include Events (keyboard events, pointer events, animation events) and Instance methods (`getElementById()` , `getElementsByClassName()`).
- [Event Listeners in JavaScript](#) - This video contains a comprehensive list of event listeners and uses some examples to help explain these concepts.