

Assignment 1--Game Description and Game Grid

Due: 11:59pm January 19, 2015

Describe your project

Choose a grid-based game or puzzle as described on the [Project page](#). (If you're not into puzzles and games, take a look at the event calendar and expense tracker project suggestions.) If you want to do a project that is not listed on the **Project** page, you will need to be careful about choosing a project that is the right size (not too much work or too little). It's best to go with one of the suggested projects unless you have a lot of programming experience. If you'd like, you can talk to me about choosing a good-sized project.

It's helpful to break your project up into phases, so that if you don't have time to complete the whole project you will still have a working web application. You can change your project later if you need to, but please check with me first.

In this assignment you will make a web page that explains how the game is played and a web page with the game grid on it. The game description page should have a link to the game grid page. The file name for the description page should be `index.html`

Your description of the game should make good use of HTML tags, including links, headers, lines, lists, and other tags as appropriate. In particular, it must include the following elements:

External link: Include at least one link on your page that goes to an external web site (outside of UVU). The page should be related to your game.

Image: As part of the description of your project, include at least one picture or diagram. If you didn't make the image, be sure to give proper credit for it. Don't use images unless you have permission to do so.

Separate window: Include a link that specifies a `target` attribute so that the linked file will open in a separate window (or a new window, if there is no open window with the name specified in the `target` attribute). The separate window will contain the grid described below.

Table: Use HTML `table` tags to make a grid that is suitable for your game. This grid should not be in the same HTML file as the game description. For the next assignment, you'll write JavaScript code to generate the HTML for the grid, so you should make sure that you understand the table HTML well.

Make an HTML table for your game grid

In future assignments you will write JavaScript code that generates HTML for your game grid. For this assignment, make a mock-up of your game grid that shows what your game will look like but is typed in directly rather than generated by JavaScript.

Your grid should be an HTML table that is a snapshot of a game in progress. For example, if your game is Minesweeper, your grid should show some squares flagged, some squares with numbers, and some squares that are unchanged. If your game is Concentration, your grid should show some cards that are face down and some matches that are face up. You should make good use of HTML, CSS, and images in your game page and grid so that it looks like a game and not just an HTML table. Minimal game grids will not receive full credit.

If you spend time figuring out how the grid will work now it will make it easier to write JavaScript to generate the grid and place game elements later.

Type the HTML directly into the file

Use a plain-text editor (like Notepad++ or TextPad) for this assignment, not an editor that automatically adds HTML tags. By typing in HTML directly, you will become familiar with HTML tags and how they can be used. Later in the term you will write JavaScript code that generates HTML. That will be difficult to do well if you have not had experience making web pages from scratch.

Load your HTML files into a browser to test them

In this class we won't be posting HTML files on a web server. Instead, we will open the HTML files as local files using the browser's **Open File...** menu option (or a similar menu option). Keep in mind that, unlike compilers, web browsers often ignore mistakes. It's important to be careful about using closing tags and properly nesting HTML elements. Sometimes when you write sloppy HTML it looks fine at first because the browser fills in missing closing tags and ignores some errors. Later, when the document gets bigger and more complicated, it might not work right, and then it can be difficult to figure out what's going on. Writing clean HTML makes it easier to find and fix problems, much like using good indentation and formatting makes programs easier to work with.

Use CSS styles in your game description and your game grid

Use an external CSS style sheet and styles in your game description page and in your game grid page. Use several different kinds of styles: font family, size, and color, backgrounds, borders, margins, padding, etc. In the game grid, pay special attention to styles that relate to the properties of tables: dimensions, borders, backgrounds, and text styles.

Include a preliminary software design on your game description page

Your game description page (index.html) should include a heading for **Preliminary Software Design**, followed by a description of your model and the most important functions that your game will need. The descriptions of the model and the functions should be programming-language independent. Alternatively, you can put the preliminary software design in a separate HTML file and put a link to it on the game description page. You will not receive full credit for the preliminary software design if it is not in HTML format.

For the model, describe the kinds of objects and arrays that you think will work well for representing game data. You can use (simple) UML to describe the objects, or you can write English descriptions of the data and methods that the objects will have. Descriptions of objects should include names and types of their properties (or instance variables). Descriptions of arrays should include the type of element in the array and should include information about how many elements will be in the array.

For functions, state the name of the function and the types of parameters it will have. Also include a brief description, in English or pseudocode, of what the function will do.

The description of the model is the most important part of the preliminary software design. In Assignment 3, I will ask you to write JavaScript code that initializes your game grid with data from the model, so it will be very helpful to have a good idea of what that model will be like. For example, for Battleship you would need to have a model that tells where ships are placed, and then write JavaScript code to use information from the model to display ships in the HTML for the game grid.

Here is a link to an example: [sample preliminary software design](#)

Work on your game logic code throughout the term

As you complete assignments during the term you will write HTML, CSS, and JavaScript that you can use in your

project web site. However, the assignments alone will not make a complete project.

For example, if your game is Battleship, then in the assignments you will complete several parts of the interface for the game, such as grid displays to use in the game. The JavaScript code that determines when a ship is sunk, or what the computer player's move will be, is game logic code that will part of the project but is not part of any assignment.

Since game logic code is not part of the assignments, but must be finished for the final project, it's important to work on it throughout the term.

Notes

Be sure that you use *relative* URLs for the values of href attributes of link tags and src attributes of image tags. If you use an absolute URL that refers to a file in a location on your computer, the browser will not load the HTML file or image when I grade your assignment on my computer, and you won't get credit for the link or image.

Here are examples of relative and absolute URLs in link tags:

Relative:

Absolute:

The problem with the absolute URL is that it can be used only on a computer that has the exact path C://Users/Abigail/Documents/CS2550/A1/, which my computer (and most others) doesn't have. The relative URL will work fine on any computer, as long as the HTML file (gameGrid.html) is in the same directory as the web page that contains the link.

Turn in

Put both of your HTML files (game description and game grid), and all image and CSS files in a zip file. Turn in your zip file as described on the main [Assignments](#) page.

Points

- 15 Game description page (index.html)
- 5 External link
- 5 Image
- 10 Separate window
- 15 Game grid page with an HTML table for the grid
- 20 Preliminary software design
- 10 External style sheet
- 10 Styles in game description
- 10 Styles in game grid
- 100 TOTAL