JavaScript Group Project

Group Assigned: 11/07/22

Project Kickoff: 11/09/22

Demos Due: 11/18/22

Group #6: Clint Smith, Dalia Shaman, Martin Wisor

Option Selected: Memory Game

**LMS:** <https://lms.grandcircus.co/mod/assign/view.php?id=22755>

**Project Document:** <https://docs.google.com/document/d/1mQGZUeWNv5ZC4hcv3aFQIHYCpDnMqTsTV9BShKPG4lM/preview>

**Project Document:**

The JavaScript Project is an opportunity for bootcamp students to:

* Begin to pull together many different things they’ve learned so far
* Work on a more extensive and more complicated case study than labs and exercises as  preludes to the React Project and Final Project
* Collaborate with teammates on a software project, experiencing the need for proper version control and project management

The majority of class time for these days will be committed to the project (although outside work may still be required) and there will be check-ins during those days to make sure groups are on-track.

The entire group will work together on one of the three projects. Take a little time to decide which one you want to tackle, because once you get started, you cannot move to another project.

Possible projects:

* Memory Game
* Point-Of-Sale Website
* Budget Buddy

See the following pages for more information on each project. Please recognize that the descriptions are minimum versions; it’s hoped each group will go beyond these requirements and incorporate features of interest to them. **ALL CHOICES MUST BE MADE MOBILE FIRST AND MUST ALSO INCLUDE A DESKTOP LAYOUT.**

**OPTION: MEMORY GAME OPTION**

We all remember the classic memory game where we had to choose two cards at a time to see if they match, right? Good! You’re building this. At a minimum, this game should include:

* A game board that displays all of the current cards face down in a random order.
* A start button that will initiate the game.
* Cards must “flip” or “turn” when the user clicks on them.
* If a pair of matching cards has been selected, remove the cards from the playing board after a short time.
* If a pair of cards does not match, they should flip back to being face down after a short time.
* Must include a reset button which will reset the game board.
* Display a timer that will notify the user how long it took them to complete the game.
* For flipping the cards, do not use any libraries or plugins.

**Build Overview**

***HTML:*** this part can be fairly simple because it just requires a few buttons and a primary container that contains any buttons and statistics (timer and move counter).

* Start Button
* Container for the game
* Container for the card grid
* Container for each card
* Container for the Timer
* Container for the Move Count
* Stop Button
* Reset Button
* Container for results message (winner!)

***CSS:*** we can definitely get creative here with the look and feel of the webpage, but the key parts will be creating the animation of the cards when flipped. Will be important that colors and styling is in line with the images to help reinforce the overall theme (thoughts on theme?)

* Background styling for pages
  + Start Page
  + Game Page
  + Winner Page
* Overall container styling
  + Box Size
  + Border
  + Background Color
  + Positioning on the screen
* Game container styling
  + Box Size
  + Border
  + Background Color
  + Positioning within the container
* Timer and Move Count styling
  + Box Size
  + Positioning within the container
* Button Styling (3)
  + Start Game button
    - Height / Width / Border / Color
    - Position on page
    - Turn on / off Hidden
  + Pause Game button
    - Height / Width / Border / Color
    - Position in container
    - Turn on / off Hidden
  + New Game button
    - Height / Width / Border / Color
    - Position on page
    - Turn on / off Hidden
* Images
  + Resizing images downloaded to auto-fit our card containers
* Card Animation
  + Card Before – display ? or some other image, hiding the actual image
  + Card After – display the card image to be matched
* Build in mobile responsiveness
  + I usually find working from Desktop version and going backwards into Mobile Version is easier
  + May want to provide flexibility in the game board so based on screen size there are different column counts (e.g. – full screen = 4 x 4, smaller screen = 3 x 6, etc.)

JavaScript: this will easily be the most complicated part as it requires button interactivity, a timer, working from an array of cards to generate random positions in the game container, flipping them over and using their values to determine if cards match or not

* Assigning our HTML to variables (const / let) to make them perform functions as called
  + Buttons – Start, Pause, New Game
  + Add our generated card array to the game container
* Create an array of card names and images that can be compared
  + However large we want our game board to be, then we need half as many cards
    - If we want to do a stretch goal, then we could give the player the option to select how many pairs they want in the game, and it would respond accordingly
* Generate those cards in a random order and place them inside the game container
  + Randomizer
  + Add class value to the cards selected are inserted in the game container
* Player selects a first card and a second card and the values of these are compared
  + If cards with the same value are selected, then add class so they don’t flip back over and cannot be selected again
  + If cards with different values are selected, then tell them to flip back over
  + Create a counter that increments until all pairs have been selected
  + Once player hits that value, then game automatically stops as they have won
* Add functionality to our buttons
  + Start Button
    - Starts the Timer at 00:00
    - Starts the Move Counter at 0
    - Generates the random array of cards
    - Other buttons remain hidden
  + Pause Button
    - Stops the timer at its current time
    - Hides the game board, instead giving you an option to continue the game or start a new game
  + New Game
    - Starts the Timer back at 00:00
    - Starts the Move Counter back at 0
    - Generates a new random array of cards

11/09/22 – Day 1

Ideas in the group:

* Have buttons to select a background color and theme for the cards, which would then reference a different array of images. This would be selected from the Start Screen
* We went over the existing examples we could draw from to help us resolve ideas.