Instructions for IT202 HTML5 Canvas Game Deliverable (pts. 10.00)

Instructions

1. Create a branch for this assignment called M6-HTML5-Canvas
2. Pick a base HTML5 game from https://bencentra.com/2017-07-11-basic-html5-canvas-games.html
3. Create a folder at your top-level directory called M6
4. Create an html5.html file in your M6 folder (do not put it in Project even if you're doing the arcade proposal)
5. Copy one of the base games (from the above link)
6. Add/Commit the baseline of the game you'll modify for this assignment (*Do this before you start any mods/changes)*
7. Make two significant changes
    - Static changes like hardcoded colors/values will not count at all (i.e., changing shapes/colors/values that are globally defined and set only once.
    - Direct copies of the class example changes will not be accepted (i.e., just having an AI player for pong, rotating canvas, or multi-ball unless you make a significant tweak to it)
    - Significant changes are things that change the game logic or modify how the game works. Static changes as stated earlier will not count.
      Hint: You may however change such values through game logic during runtime (i.e., when points are scored, boundaries are hit, some action occurs, etc.)
8. Evidence/Screenshots
    - As best as you can, gather evidence for your first significant change and fill in the deliverable items below.
    - As best as you can, gather evidence for your significant change and fill in the deliverable items below.
    - Remember to include your ucid/date as comments in any screenshots that have code
    - Ensure your screenshots load and are visible from the md file in step 9
9. In the M6 folder create a new file called m6_submission.md
10. Save your below response, generate the markdown, and paste the output to this file
11. Add/Commit/Push all related files as necessary
12. Merge your pull request once you're satisfied with the .md file and the canvas game mods
13. Create a new pull request from dev to prod and merge it
14. Locally checkout dev and pull the merged changes from step 12

Each missed or failed to follow instruction is eligible for 0.25 from the final grade

Fill in the below Deliverables
Desired Branch Name: M6-HTML5-Canvas

Deliverable 1: Game Info (pts. 2)

Sub-Task 1: What game did you pick to edit/modify? Mention Pong, Arcade Shooter, or Collect the Squares
Pong

Sub-Task 2: Add the URL to the html5.html file NJIT webserver
(i.e., https://web.njit.edu/~llw2/llw2-prod/M6/html5.html)
https://web.njit.edu/~mws36/mws36-prod/M6/html5.html

Sub-Task 3: Add pull request for this assignment from M6-HTML5-Canvas to dev
(Required URL pattern: https?://github.com/(?:[^/.]+/)+(?:pull/.+)
https://github.com/MatthewSchmelz/IT202-007/pull/29
I made M6 a branch of Milestone1 and not dev since it wasnt mentioned at the beginning, so the link is from M6 to Milestone1

Deliverable 2: Significant Change #1 (pts. 3)

Sub-Task 1: Describe your change/modification. Clearly explains the significant change.
Modified the bounce System that will randomly flip the player's controls on input, in order to make the game more frustrating and turn it into a rage game instead of normal pong. I only modified the W and S controls and kept the arrow keys as a dev tool in order to test the other change easier.

Sub-Task 2: Add a screenshot of the change while playing (try your best as some changes may be nearly impossible to capture

- Make sure if the screenshot contains code that you have a relevant comment with your ucid, date, and explanation of what you're attempting, if not maximum grade for this item is 75%.
- Add a caption explaining what you're showing in the screenshot (required for full credit)

Sub-Task 3: Screenshot of the relevant lines of code that implement your change (make sure your ucid and the date are shown in comments). In the caption, briefly describe/explain how the code snippet works.

- Make sure if the screenshot contains code that you have a relevant comment with your ucid, date, and explanation of what you're attempting, if not maximum grade for this item is 75%.
- Add a caption explaining what you're showing in the screenshot (required for full credit)

```
function attachKeyListeners() {
    // Listen for keydown events
    canvas.addEventListener('keydown',
        console.log("keydown", e);
        // November 21, MWS36
        if (e.keyCode === W) {
            if(Math.random() > 0.2){
                keys.W = true;
            } else {
                keys.S = true;
            }
        }
        if (e.keyCode === S) {
            if(Math.random() > 0.2){
                keys.S = true;
            } else {
                keys.W = true;
            }
        }
        if (e.keyCode === UP) {
            keys.UP = true;
        }
        if (e.keyCode === DOWN) {
            keys.DOWN = true;
```

- The top portion of the code W/S, has a random chance of %20 to reverse the controls of an input, making the paddle go in the opposite direction than intended. This was accomplished by a simple if/else statement.

Points	Details
1	Ucid and date must be mentioned as a visible comment in the code
1	Captions should highlight briefly what each image is showing logic-wise

Deliverable 3: Significant Change #2 (pts. 3)

Sub-Task 1: Describe your change/modification. Clearly explains the significant change.

Modified the wall system to randomly flip the direction when a ball hits the wall, with a %20 chance, in order to make the game more akin to a rage game.

Sub-Task 2: Add a screenshot of the change while playing (try your best as some changes may be nearly impossible to capture

- Make sure if the screenshot contains code that you have a relevant comment with your ucid, date, and explanation of what you're attempting, if not maximum grade for this item is 75%.
- Add a caption explaining what you're showing in the screenshot (required for full credit)

Sub-Task 3: Screenshot of the relevant lines of code that implement your change (make sure your ucid and the date are shown in comments). In the caption, briefly describe/explain how the code snippet works.

- Make sure if the screenshot contains code that you have a relevant comment with your ucid, date, and explanation of what you're attempting, if not maximum grade for this item is 75%.
- Add a caption explaining what you're showing in the screenshot (required for full credit)

```
// Bounce the ball off the top/bottom
//Mws46, november 21
if (ball.y < 0 || ball.y + ball.h > canvas.height) {
    if(Math.random() < .2){
        ball.sX *= -1;
    }
    ball.sY *= -1;
} <- #207-212 if (ball.y < 0 || ball.y + ball.h > canvas.height)
```

- A simple change that incorporates a random generator and a nested if statement inside the bouncing off walls function that reverses the direction of the X speed variable, having it reverse direction.

Points	Details
1	Ucid and date must be mentioned as a visible comment in the code
1	Captions should highlight briefly what each image is showing logic-wise

Deliverable 4: Discuss (pts. 2)

Sub-Task 1: Talk about what you learned during this assignment and the related HTML5 Canvas readings (at least a few sentences for full credit). A few sentences of significant text.

During my time at my high school, we worked with this kind of code in order to create graphics in my programming class, so I already had a baseline with this type of code. Through looking at Matt's code, I was able to see how a rudimentary AI works, which is interesting, even if it probably won't be applicable to any more complex programs, though I see how the idea can be used for chess. I also learned a lot more about key listeners by messing with them and their variables in order to learn how to randomize the control outputs.