Kent State University

CS 44105/54105 Web Programming I Fall 2017

Assignment 3

Posted: 11/10/17
Due: 11/22/17, 11:59pm

Questions? email me at aalali1@kent.edu

A. The World's Hardest Game 2 Remake (TWHG2R)

Vision

The idea behind the World's Hardest Game 2 is simple, but it requires much skill to master. You will control a red square and you need to gather all the coins and proceed to the exit. You cannot continue until you have collected all of the coins. Standing between you and the exit are deadly blue balls that move fast. If you can manage to get past these balls of death you win! Right from the first level the game is harder than you might ever expect. There are 50 levels in total[1].

The World's Hardest Game 2 by SNUBBY LAND is developed using Adobe flash, and since flash is a dying technology, we need rebuild the game using HTML5, CSS3, and JavaScript in order to target the native web. "Adobe Flash was the future, until it wasn't. In 2010, Steve Jobs posted a note to the Apple website to clarify his thoughts on Flash, and further cement HTML5 as the new standard. The problem with Flash, he wrote, was that it was insecure and resource-intensive, and its plugin was overly proprietary. Jobs made the case for HTML5 and JavaScript, pointing out that they were based on open standards that web browsers could build on. Over the next several years, HTML5 and related technologies continued to overtake the web. At the beginning of 2015, YouTube announced that its HTML5 video player was now the default. Just a few months later, it was revealed that hackers had been using an exploit in the Flash Player to inject surveillance software onto users' computers. Facebook's chief security officer called on Adobe to set an end-of-life date for the plugin." [2]. On July 25th, 2017, Adobe announced that it would "stop updating and distributing the Flash Player," giving the end of 2020 as its end-of-life date [3] [4].

---

[1] http://www.gamezebo.com/2010/03/23/worlds-hardest-game-review/

[2] https://www.fastcompany.com/3049920/tech-forecast/the-agonizingly-slow-decline-of-adobe-flash-player

[3] https://www.wired.com/story/adobe-finally-kills-flash-dead/

Non-Functional Requirements

1. Submit error free JavaScript code.

2. To create the **screens** shown below. You will be supplied with the necessary images. Download [Start](). In **start**, I did some partial programming and you need to finish the rest of the code.

3. You **must** not change the HTML or CSS files, all changes must be made in the JavaScript file only! No need for any new HTML or CSS files.

4. Play "The World's Hardest Game 2" level 1 enough until passing it successfully and the game would transition to level 2 then stop.

5. Watch episodes on [HTML5 Canvas]()

6. Study the W3schools [Canvas Tutorial]() , [Canvas Clock](), and [Game Bouncing]().

7. No images or audio can be used except the media that you are supported with in **2**.

8. Add your name and email to the header of each source file you are supported with in **2**.

---

⁴ https://blogs.adobe.com/conversations/2017/07/adobe-flash-update.html

Functional Requirements

Your rule is to redevelop level 1 (only!) of the game using HTML5 canvas, CSS, and JavaScript, your task is to:

9. You, mainly, need to develop Three screens inside your canvas

10. Screen **ONE** is the game logo and intro to the game. Screen **TWO** is a message, and screen **THREE** is the game

Screen **ONE**

a. For "HARDEST GAME" use `font-family: mono45-headline, monospace`, give it your best shot at making "HARDEST GAME" look as given above, use shadowing or any other styling techniques.

b. For The rest of the text use `Arial` font. Use gradient for the background lighting.

c. The loading bar flashes once for 2 second then the bar and the message will be replaced by a **BEGIN**, as below.
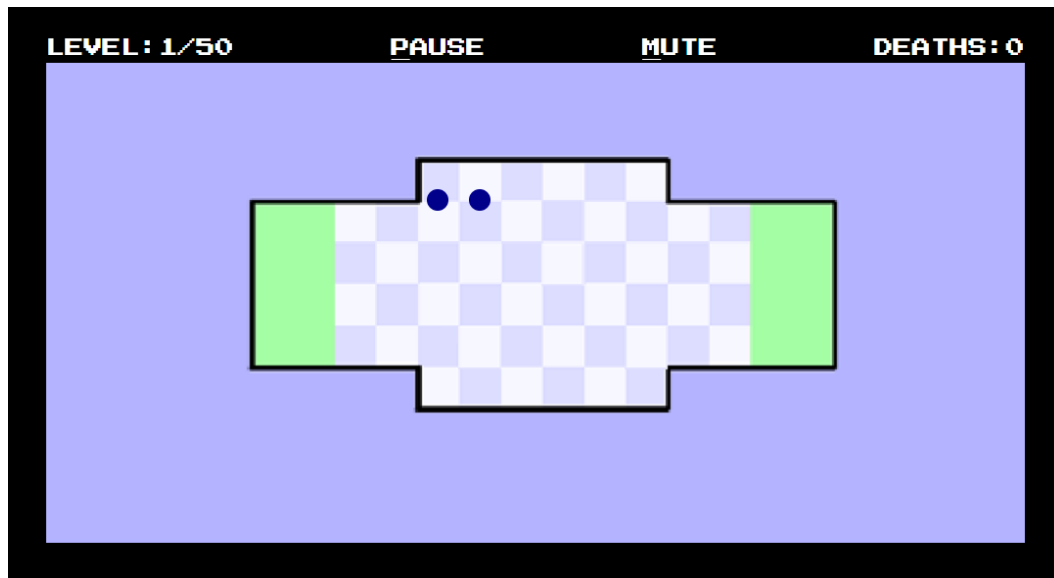
d. User can hover over **BEGIN**, it will be dimed (become gray) as in [TWHG2R](#), clicking on **BEGIN** would move user to screen **TWO**.

Screen **TWO**

e. Use `Arial` font and gradient background.

f. After 2 second, user is moved to screen **THREE**.

Screen **THREE**

For Screen **THREE** you need to replicate [TWHG2R](#) Level 1. In the given starting file from **2**, you have an escape room with a floor (background), black walls (borders), and two green safe zones on the left and the right. Two blue balls (obstacles) are bouncing up and down, your task is to:

g. Place the other two pairs of blue simultaneously bouncing balls as in [TWHG2R](#) level 1

h. Place three rotating coins, as in [TWHG2R](#) level 1.

i. Place the red square to the center of the left green area as in [TWHG2R](#) level 1, this is the starting point for this level.

j. Make the user control the red square with the arrow keys.

k. Use the given audio files to add the sound effects for the background theme, a collision between the red square and a blue ball, and the sound effect collecting a coin as in [TWHG2R](#) level 1.

l. The game has unlimited number of "lives", you increase the deaths counter on every time the user would fail. The counter is on the top right above the canvas as in screen **THREE**.

m. The end of the mission is to reach the right green area, the exit, after collecting all coins.

n. Once the user makes it to the right green land, pop out a message that says, "You Made It!"

o. On a fail or a win, reset the game to the begging of screen **THREE**. On a win, reset deaths counter.

p. Add a **PAUSE** and a **MUTE** above the canvas as in screen **THREE**. Use the html paragraph element in the given html file (`worldshardestgame.html`) that you are supported with in **2.** Apply the appropriate underlining text decoration and functionalities as the names state. User can interact with **MUTE** and **PAUSE** using a mouse or keyboard shortcuts, for **MUTE** enable `ctrl+M`, for **PAUSE** enable `ctrl+P`.

Directory Structure

Your repository directory tree should look like this at this point:

```
.
|-- assignments
|   |-- assignment1
|   |-- assignment2
|   |-- assignment3
|   |   |-- twhg2r
|   |   |   |-- images
|   |   |   |   |-- world-hardest-game-2-bg-level-1.png
|   |   |   |-- css
|   |   |   |   |-- worldshardestgame.css
|   |   |   |-- js
|   |   |   |   |-- worldshardestgame.js
|   |   |   |   |-- helper.js
|   |   |   |-- soundeffects
|   |   |   |   |-- CoinCollect.wav
|   |   |   |   |-- RealisticPunch.mp3
|   |   |   |   |-- World'sHardestGame2ThemeSong.mp3
|   |   |   |-- worldshardestgame.html
|-- inclassprojects
|-- YOURNAME.txt
```

Grading

The grade will be broken down as follows:

Points	Mark
Nonfunctional requirements	(5/100)
Screen ONE	(15/100)
Screen TWO	(10/100)
Screen THREE	(70/100)

References

- [Mozilla Canvas API Tutorial](#)
- Mozilla Canvas API Tutorial: Basic Animations
- [HTML5 Canvas Tutorial for Beginners](#)
- [W3C schools HTML Canvas Tutorial](#)
- [How to Code: Gravity](#)
- [HTML5 Canvas Tutorial: An Introduction](#)
- [Tutorials Point HTML5 Canvas](#)
- [How to Draw Charts Using JavaScript and HTML5 Canvas](#)