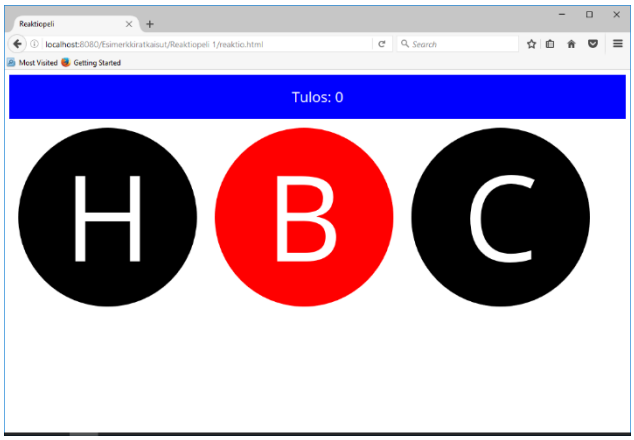
Speedtest



Your task is to implement in JavaScript a speedtest game. The buttons light up in random order and the player should press the button in the same order. For each press in the right order the player gets a point, an incorrect press ends the game. The speed of the game increases steadily (https://www.youtube.com/watch?v=nv_Wfhz38EM).

Simplified version

In the simplified version, the player needs to press the button before next button is lit. It may be simpler to implement but it is harder to play.

Game ends if the player pushes a wrong button or misses a press before button changes.

Full version

In the full version, the player does not need to keep up with the speed of button changes. She just needs to press the buttons in the correct order. The game ends if the player presses a wrong button or the queue of buttons to press becomes too long (e.g. 10).

In both versions, the game needs to get more difficult gradually: the further you get the faster the buttons change.

You can find a skeleton for the game with three buttons. If you use the template, you can start immediately with the game logic implementation as the basic structures are in place.

As always, feel free to style the page any way you like.

Questions

1. Explain what is an array and how do you define and use it in JavaScript
2. Write a code snippet that
    a. creates an empty array
    b. adds elements to the end
    c. removes elements from the end
    d. removes elements from the beginning
    e. adds elements to the beginning

    Document your code so that the reader can understand what happens in each phase. Use line comment:

```
// comment until the end of line
```

3. The previous question introduced a few Array methods. List and explain ten more Array methods you find useful.

Hints

- You are going to need arrays, look them up in the tutorial http://www.w3schools.com/js/
- The template implements already quite a lot of the game. You may want to study the template for a while before you start implementing the game logic.
- Figure out what is needed, add one small piece of functionality, try out and fix until you are happy with it. Then proceed to the next piece of functionality, one at a time.
- The game template contains some instructions about how to proceed if you would like to use the template.

Bonus

Challenge yourself to get to the next level!

Game over

Implement an earthmoving game over animation with fanfares.

Hi-score

Add a high score board to store the best scores. Display them when the game ends.

For this, you will need to ask the name of the player and store the data permanently so that it does not disappear at page reload. You can use for example the localStorage object that can store data in the browser across browser sessions (http://www.w3schools.com/html/html5_webstorage.asp).

Own architecture

Forget templates and design the game from scratch.