

# Laboratory Sheet 3

## DOM and BOM

**Published date:** Monday, 1 October 2018

**Due Date:** Monday, 12 November 2018, 9:00 am

Successful completion of this lab is worth **2%** of the module marks.

Successful completion of all 7 labs is worth an additional **1%** of the module marks.

**Note:**

1. All the code (e.g., .html, .css and .js files) must be submitted using webcourses – in zipped format.
2. Must be demo-ed in the labs either before or after submission.
3. Failure to provide code or demo will result in a mark of 0%.

**What you need:** Notepad++ (or another); Chrome (or another); HTML5, CSS, JavaScript.

**Where you can get support:** Lecture notes on webcourses + full references on

<https://www.w3schools.com>.

**Tip:** when in Chrome or Firefox, press F12 to use “Dev Tools”, such as the Console and Inspect Elements, to debug your code.

Develop an interactive webpage for a children’s colour learning game. The game consists in having a grid with multiple colours and a panel where a colour name will be presented. The child will click a cell in the grid and that cell’s colour name will be presented in a panel above. Once a cell has been clicked, it will become black. When all cells are black, the game is over. The child will want to click all the cells in the shortest amount of time.

1. When a child enters the page, it shall present a “Start” button.
2. When the child clicks “Start”:
  - a. A grid of 6x6 cells is created.  
The grid should be generated using native JavaScript.
  - b. Each grid cell is attributed a colour randomly, between blue, red, green, orange, purple, pink and gray.
  - c. A timer will start counting the elapsed time.
  - d. The “Start” button is hidden.
3. Then, each time the child clicks a cell in the grid, that colour’s name will be displayed in a panel above the grid, using that very same colour for the text.

- a. Then, that cell will become black.
  - b. The child will keep clicking the cells, and their colour names to be displayed above, until all cells have been clicked and therefore are black.
- 4. When the game is over, the colour name panel will display: "Game Over", written in black.
  - a. The total time taken to complete the game is shown to the child with an alert.
- 5. Change the code to have only 6 random colours and:
  - a. Only when the child clicks two different cells with the same colour in sequence, they become black.
  - b. The game is over when all cells are black.
  - c. Therefore, you need to ensure each colour appears exactly 6 times (3 pairs).