

## APPLIED COMPUTER SCIENCE

ACS-2909-001  
Internet Programming

Fall 2016

### Assignment 1

Due date: October 17, 2016 11:59 pm

Total marks:

### Motivation

This goal of this assignment is twofold. First, this assignment will act as a review to CSS and HTML (or provide exposure to students without any experience). Second, this assignment will focus on demonstrating that JavaScript is a simple and powerful tool for creating dynamic webpages.

### Questions:

The answer for each question should be given in a separate set of files labelled Q\*. \*. Your name and student number should appear in all source documents, but it does not need to be displayed by the browser. Your solutions will be tested using Chrome.

1. Create a web page that exactly recreates Fig. 1 (you can use your own text). The re-creation should remain at the **top centre** of your page for any size of window.

Evaluation: This question is worth **7 marks**. Including the dotted lines, there are 6 components to Fig. 1, each worth 1 mark. The last mark is for correctly positioning the box within the page.

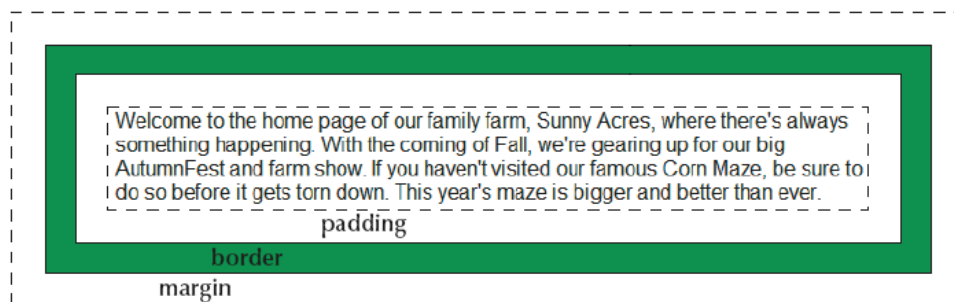


Figure 1: Box model.

2. Create a web page that dynamically adds randomly coloured boxes and positions the boxes at random coordinates. An example is given in Fig. 2. In other words, your page must create and add the boxes via JavaScript only.

Evaluation: This question is worth **8 marks**.

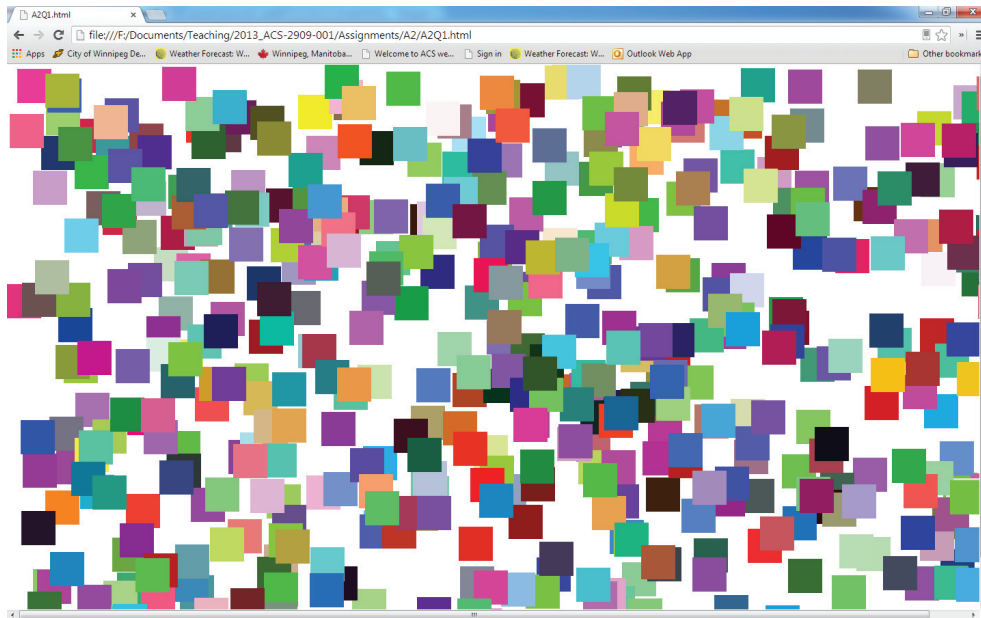


Figure 2: Sample output for random boxes.

3. Create a web application that displays the coordinates of the mouse. The coordinates should update anytime the mouse moves. An example of my solution is provided in Fig. 3.

Evaluation: This question is worth **5 marks**.

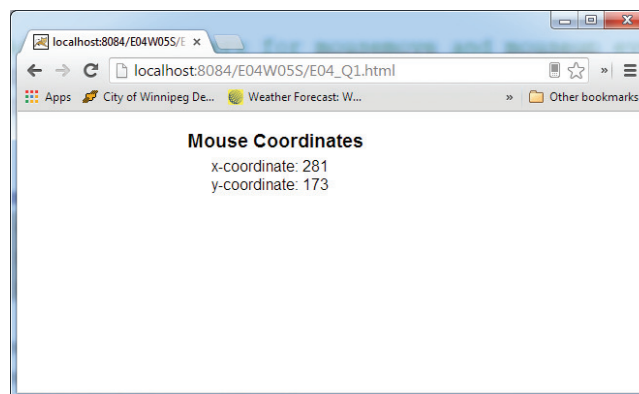


Figure 3: Sample screen shot for mouse question.

4. Modify your solution to Q2 so that the user can move any of the coloured boxes using the mouse by first click-and-hold and dragging. Make sure the pointer stays a constant distance from the top-left corner. Note, you do not have to change the pointer's appearance.

Evaluation: The question is worth **10 marks**.

5. Create a web application with two boxes, one contained in the other (see Fig. 4). The user should be able to click and move the inner box, however, the user should not be able to move this box outside the confines of the outer box. In other words, the user should not be able to move the black box in Fig. 4 outside of the blue box. Additionally, the outer box should move in the direction of the inner box as soon as the inner box contacts the edge of the outer box. To rephrase, the user can move the outer box by dragging the inner box against one of the edges of the outer box.

Evaluation: The question is worth **10 marks**.

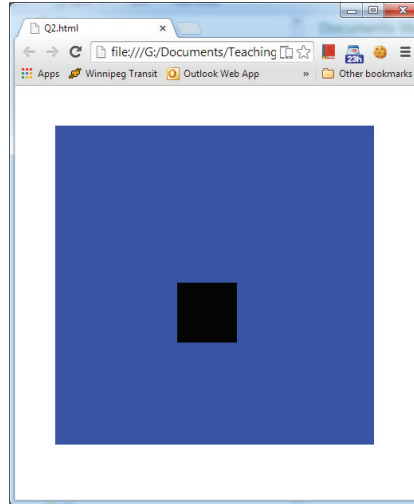


Figure 4: Sample screen shot for Question 2.

## Hand in instructions

Zip all the files into a single archive named `YourStudentID_Ass1.zip`. Submit the zip file to the TA, Matthew Hiebert, at: [hiebert-m70@webmail.uwinnipeg.ca](mailto:hiebert-m70@webmail.uwinnipeg.ca). Marks will be deducted for students that do not follow instructions.