User Interaction

In this exercise, we will look at user interaction with the HTML5 canvas.

Exercises

1. Open mouse.html and click on the canvas. You should see a red dot appear on the canvas.
2. Log the event variable to the console, and examine it. Change mouse.html to draw the circle at (event.clientX, event.clientY), rather than (50, 50).
3. Have a look at Mozilla's documentation on offsetTop and offsetLeft. Fix mouse.html so that the circle is drawn with its centre at the mouse cursor.
4. Open keyboard.html in your browser, with the JavaScript console open. Press various keys and examine the console output.
5. Using the code from Lab 3, draw a ball on the canvas and allow the ball's movement be controlled by the arrow keys; i.e. **the 'up' key adds an upwards velocity to the ball etc.** You might have to use the keydown event rather than keypress, if it is not working.
6. Edit the code so that the ball will bounce off the edges of the canvas (as implemented in Lab 3).
7. Edit the code so that the ball can be repositioned using a mouse **right click** on the canvas
8. Using the objects created in Lab 2, draw the Pokeball and allow the user to control its speed
9. Instantiate a second object and give it a speed

Advanced exercises

1. Add other key combinations to control the speed to spin (angular velocity) of the object ('o' to increase spin, 'p' to decrease spin).
2. Give the object a downwards acceleration, so that it gets faster as it falls, and slower as it ascends. Also add a kinetic energy loss on each bounce (i.e. the ball will only bounce to 90% of the height from which it has been dropped).