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 2 and Lab 3, draw a ball on the canvas and allow the ball's movement be controlled by the four 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 click on the canvas
8. Using the objects created in Lab 3, draw the pizza rather than the ball and allow the user to control the speed of the pizza
9. Instantiate a second pizza/ball object and give it a velocity
10. Detect whether the 2 balls/pizzas collide – Log any collisions to the console

Advanced exercises

1. Add other key combinations to control the speed to spin (angular velocity) of the ball. Have the ball move in a realistic way following a collision with the wall
2. Create an x's and o's game. At the start, a grid should be displayed on the canvas, and two players can take turns in clicking in any of the empty sections in the grid. The first click should result in a circle going into that section, with the next click (in any other empty section) resulting in a square being places in that section. The players then alternate turns until one wins or the game ends in a draw.