

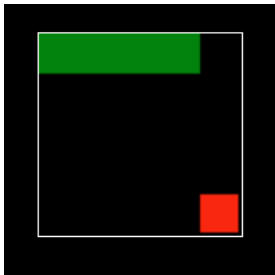
# Snake assignment

SKC Exercise

## Introduction

To prepare for the assignments, extract the provided zip file on your machine. To do this in Windows, right-click the file 'Snake SKC – Master.zip' and choose 'Extract All' from the context menu.

A new folder will appear, containing several files. To see the game, double-click on the 'index.html' file. A browser window will open and you will see something similar to the following:



The game is written in JavaScript, which allows you to program interactive webpages. You can find the source code in the assets/js folder. To open a javascript file, just right-click it and choose 'Edit' from the context menu.

If you make any changes in the code, be sure to save the file and then switch to the browser and press the F5 key on your keyboard to refresh the page. You should see the running game reflect your changes. Feel free to experiment by making small changes to the code, saving and checking the results by refreshing the browser.

### Assignment 1:

The canvas is rather small. Increase it by adjusting the canvas size value in settings.js.

*The change is made by adjusting a variable. You can read more about variables here:*

*[https://www.w3schools.com/js/js\\_variables.asp](https://www.w3schools.com/js/js_variables.asp) and [https://www.w3schools.com/js/js\\_const.asp](https://www.w3schools.com/js/js_const.asp)*

### Assignment 2:

The snake moves at 60 frames per second. This makes the game so fast it's unplayable.

Find the variable that causes this near the top of game.js, and adjust it to something more playable.

### Assignment 3:

The input controls only work in two directions. Implement controls for the other two directions. Look at how controls for the other two directions were implemented near the bottom of game.js.

*The movement is programmed with conditional logic using the if/else statement, you can read more about if/else here: [https://www.w3schools.com/js/js\\_if\\_else.asp](https://www.w3schools.com/js/js_if_else.asp)*

#### **Assignment 4:**

Right now the snake wraps around when it reaches the edge of the game screen. In some versions of the game hitting the edge ends the game.

Make the necessary changes to the `checkEdgeCollision()` function so that the game resets when the snake hits any of the edges of the screen.

*Functions can be used to call (invoke) entire blocks of code using only one line. Read more about functions here: [https://www.w3schools.com/js/js\\_functions.asp](https://www.w3schools.com/js/js_functions.asp)*

#### **Assignment 5:**

The score system doesn't work. Give the player points whenever an apple is eaten by increasing the value of the score variable.

*You can read more about incrementing numbers and other arithmetic operations here: [https://www.w3schools.com/js/js\\_arithmetic.asp](https://www.w3schools.com/js/js_arithmetic.asp)*

## **Bonus assignments**

Here are some bonus assignments to challenge you! You can try to use Google to figure out how to solve these problems.

#### **Bonus Assignment 1:**

Increase the snake's speed for every x amount of apples that are eaten.

#### **Bonus Assignment 2:**

Give the snake a random color whenever an apple is eaten. Make sure it's not too dark or you won't be able to see the snake.

#### **Bonus Assignment 3:**

Add a golden apple to the game. It has a 10% chance to appear instead of the regular apple every time an apple is eaten. It grants more score points than the regular apple.