JS Snake Game

Documentation for JS Fundamentals Teamwork @ SoftUni

## 1.1. Goals and Motivation

Inspired by the recent uprising of motion controlled gaming, our group decided to reproduce one classic game Snake.

## 1.2. Background

Snake is a classic single player game. In the game, the player controls a long, thin creature, resembling a snake, to roam around a bordered plane picking up food. Each time the snake eats a piece of food, its tail grows longer. The game ends whenever the snake’s head hits the border or itself.

## 1.3. Description of Project

In this project, our group plans to recreate this game with added features. Our goal is to have the player hold and move a physical object (acting as a beacon) to attract the movement of the virtual snake, which is being projected onto a screen. The goal of the player is to physically move the snake to different positions in front of the screen to guide the snake to its food, while at the same time avoid having the snake hitting itself or the screen border.

**Review** of the goals and implemented features:

1) Basic game rules including movement of snake, scoring condition and representation (snake growth), and game over condition detection;

2) “Game Start”, “Game Paused” and “Game Over” screens;

3) Maintaining an acceptable frame rate so that the game is playable.

4) Sound effects for events in game such as game start and game over;

5) Increasing game difficulty: for every X scores the movement speed of snake increases;

In conclusion, our project shows positive result in terms of meeting initial design goals: most of the features important to game play are implemented and fully tested.

The main game field is an HTML canvas element. For all the styles we used CSS, and the main logic is written in JS.

For the snake body implementation itself, we used an array. Every time the snake catches a piece of food, that piece becomes the head and also this is how we increase the body. Otherwise the basic **movement** is made by moving the last element in first position (the tail becomes the head).

Files description:

* index.html – start up

Here we make the canvas and load all the JS files needed for the game.

* inputHandler.js – takes care of user input   
  Here we handle key action and control the game. At the start we take a JSON object from drawn file and add it to the start button. When the button is clicked the game starts. We call the start function to start the actual game.
* constants.js - all the global variables   
  Here we set all the global variables we need like the snake speed, size canvas options. Keeping it this way it’s easier when we need to make some changes.
* main.js - main logic of the game   
  This is where the magic happens. Here we have few main functions for different tasks – drawing the snake, the food, creating food at random position, changing snake position, game over and all the things we implement in the game. The main function simulates a class and its inner function returns JSON we call in the app file.