# Software - Javascript

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**SUMMARY DESCRIPTION**

Learn to make a simple game in Javascript.

## Introduction

Javascript (ECMAscript) is a language to make web pages interactive.

A variant of Javascript called Node.js can be used to create server side scripts to access databases and other software not on the client computer.

A variant of Javascript called Electron can be used to create desktop programs on the client computer.

## Language Basics

Comments.

Assigning data to variables

Branching (control structures)

Loops

Grouping code (functions, objects)

### Exercise 1: Write name

In a text editor write a javascript program to loop through 1 to 10, and on the 3,5,7 count write the count and the student’s name.

## Draw on Canvas Object

Create canvas element. Draw shapes on canvas.

### Exercise 2: Draw moving ball

Write a javascript program to draw a filled circle on a canvas object.

In an endless loop, erase the old circle, move to a new location horizontally, draw a new circle. If the circle position is outside the canvas boundary, move to left side of screen.

## Interact with Canvas Object

Set up endless event loop. When user interaction is detected, do action.

### Exercise 3: Move Rectangle

Draw rectangle on left side of canvas. When user moves mouse, move the vertical position of the rectangle.

## Game Logic

Define rules for interaction of objects in the game.

### Exercise 4: Collision Detection

If circle touches top, left, bottom of canvas “screen”, make it bounce (reverse direction)

If circle touches rectangle paddle, make it bounce.

If circle touches right side of canvas screen and it isn’t contacting the paddle, make circle disappear and reappear on the left side of the screen.