HTML5 Canvas

The Future of Graphics on the Web

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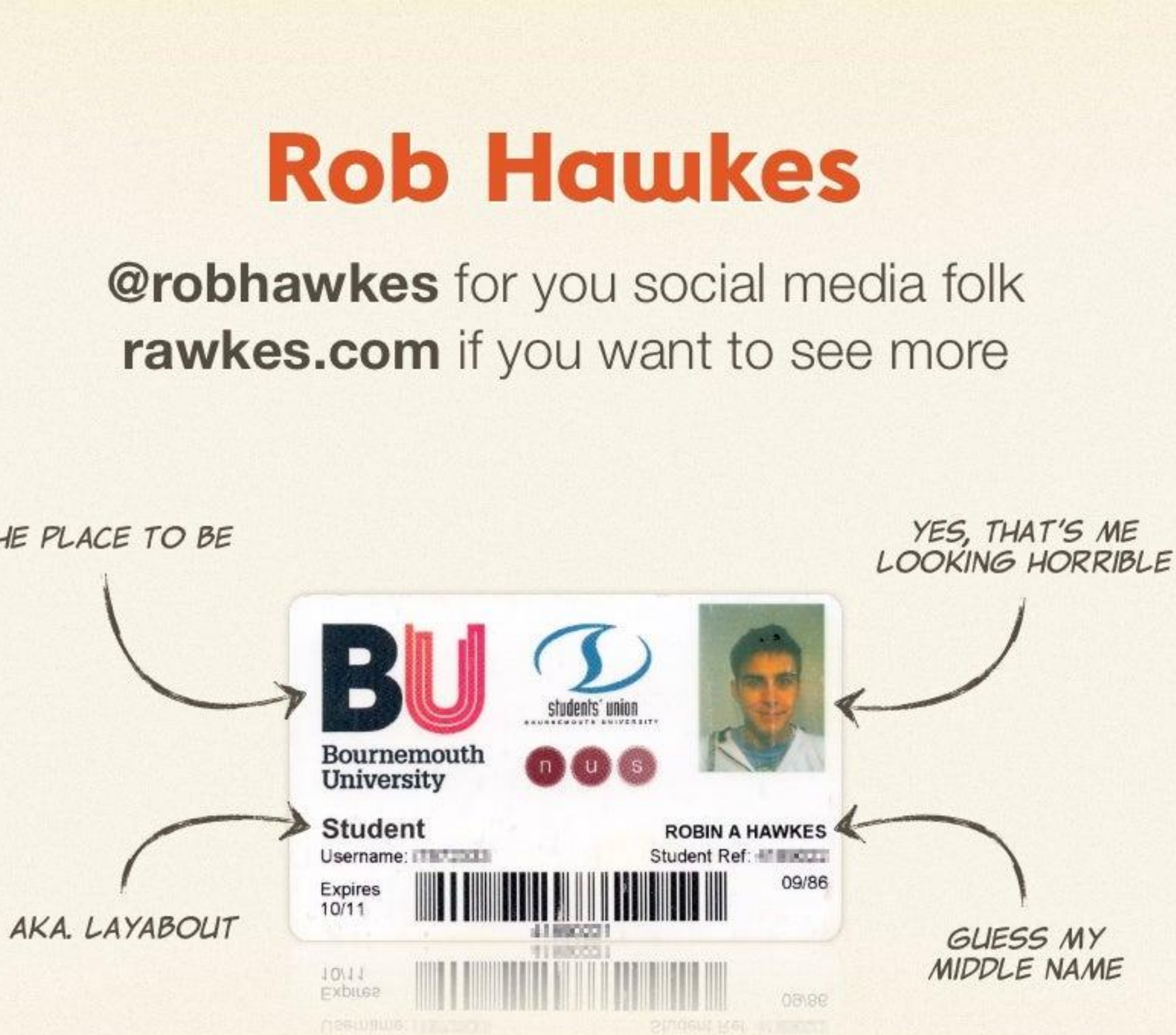
rawkes.com if you want to see more



"Canvas is my favourite part of HTML5, alongside its video and audio support"

Myself, at some point

So what is canvas?

An overview of canvas

* 2D drawing platform within the browser
* Uses nothing more than JavaScript and HTML – no plugins
* Extensible through a JavaScript API
* Created by Apple for dashboard widgets
* Now openly developed as a W3C spec

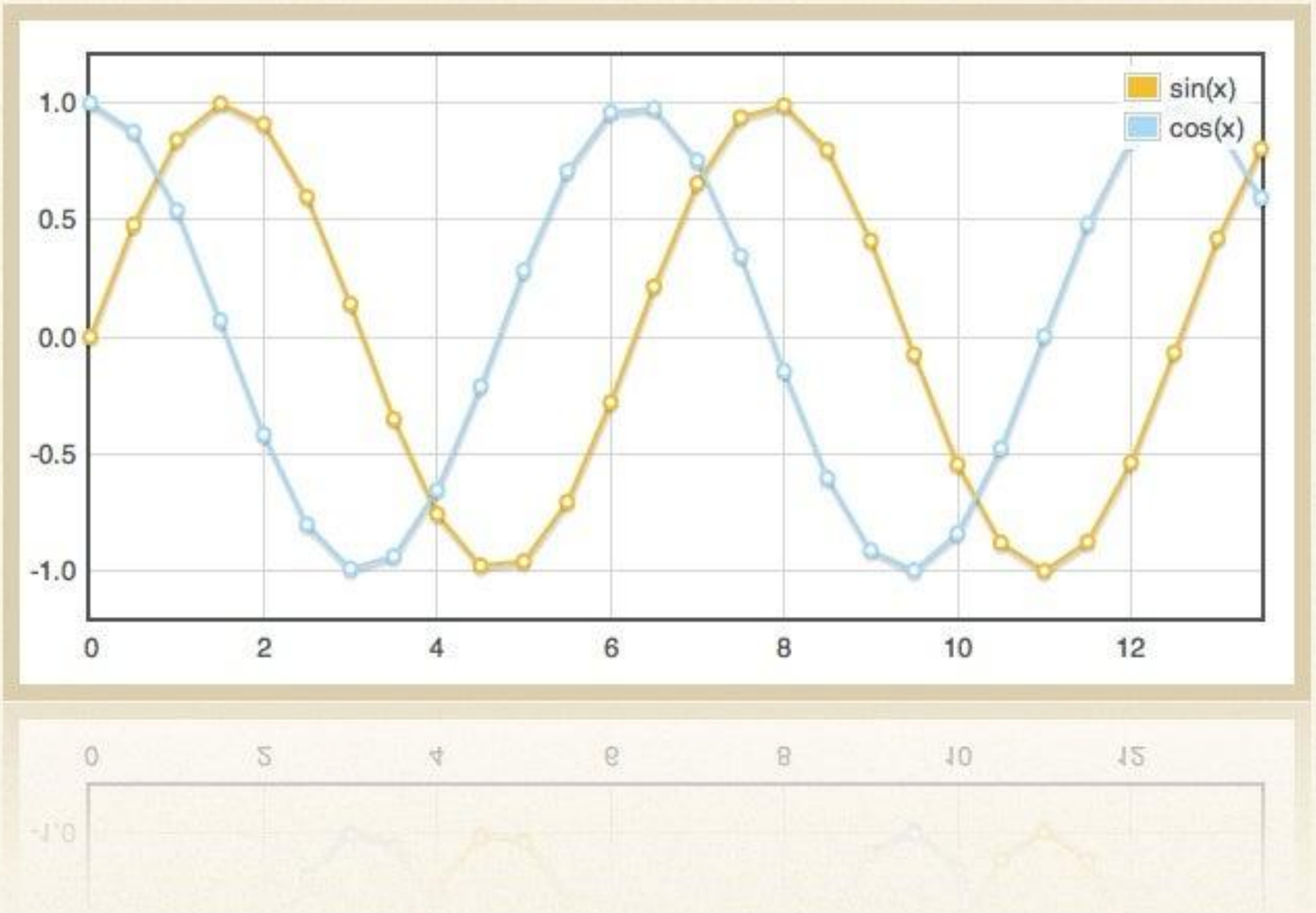
Bitmap vs. vector

* Canvas is a bitmap system
  - *Everything is drawn as a single, flat, picture*
  - *Changes require the whole picture to be redrawn*
* SVG is a vector system
  - *Elements to be drawn are separate DOM objects*
  - *They can be manipulated individually*
* SVG isn't part of HTML5
  - *Future isn't as rosy as canvas'*

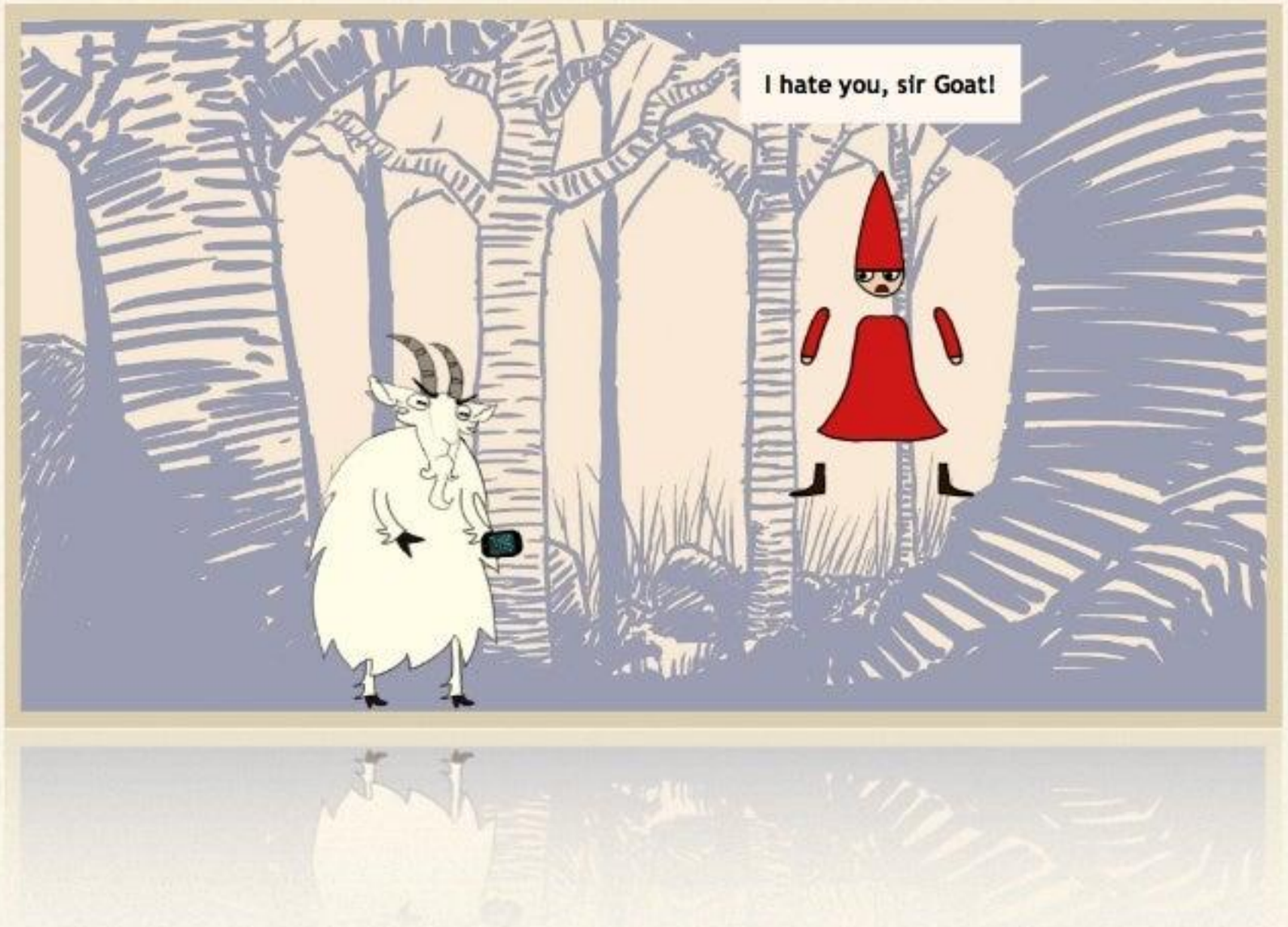
Browser support

* Most modern browsers
  - *Safari*
  - *Chrome*
  - *Firefox*
  - *Opera*
* No Internet Explorer support by default
  - *However, there are hacks to get it working*

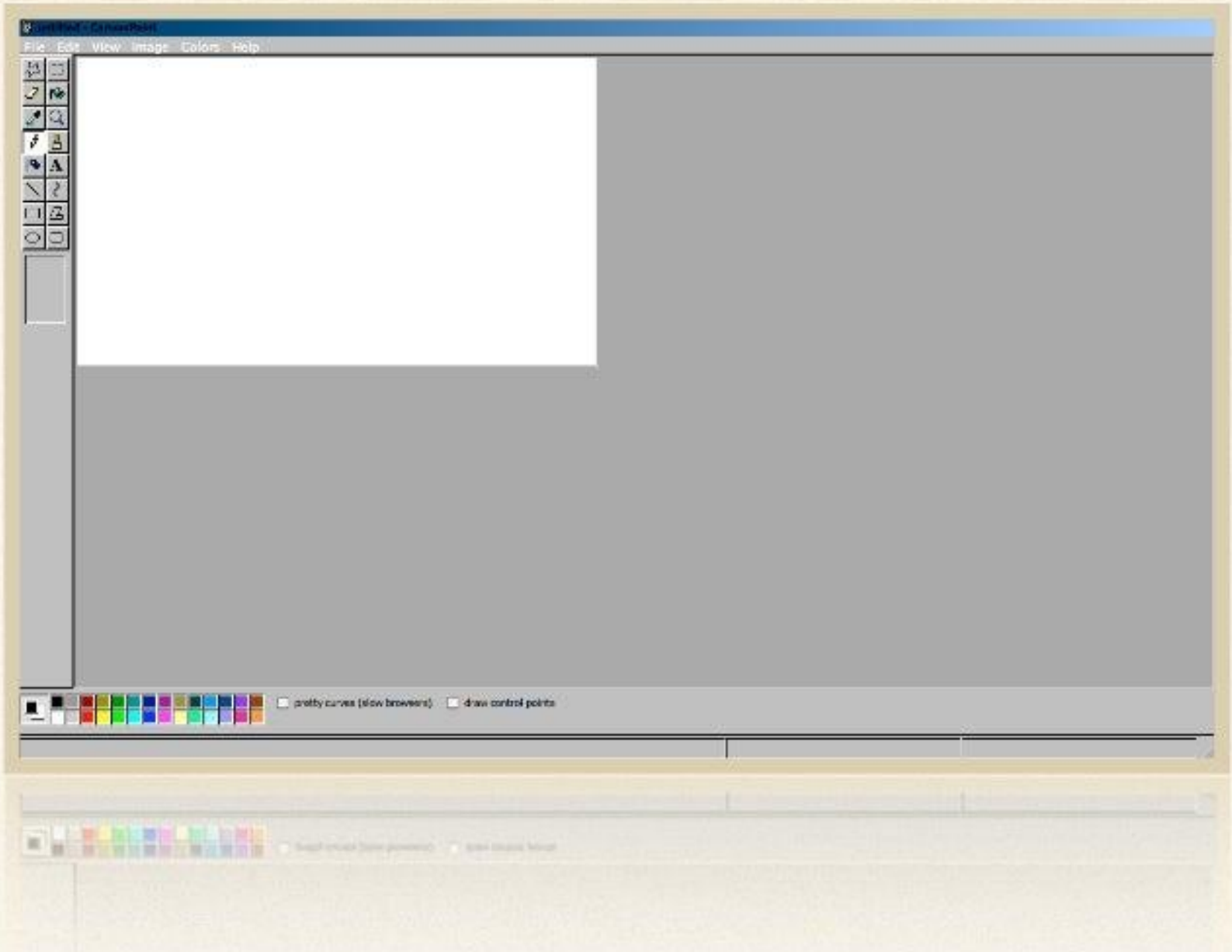
What is it for?



Data visualisation



Animated graphics



Web applications


GWT Quake II
http://quake2-gwt-port.appspot.com/
Google
HTML5 Canvas

Games

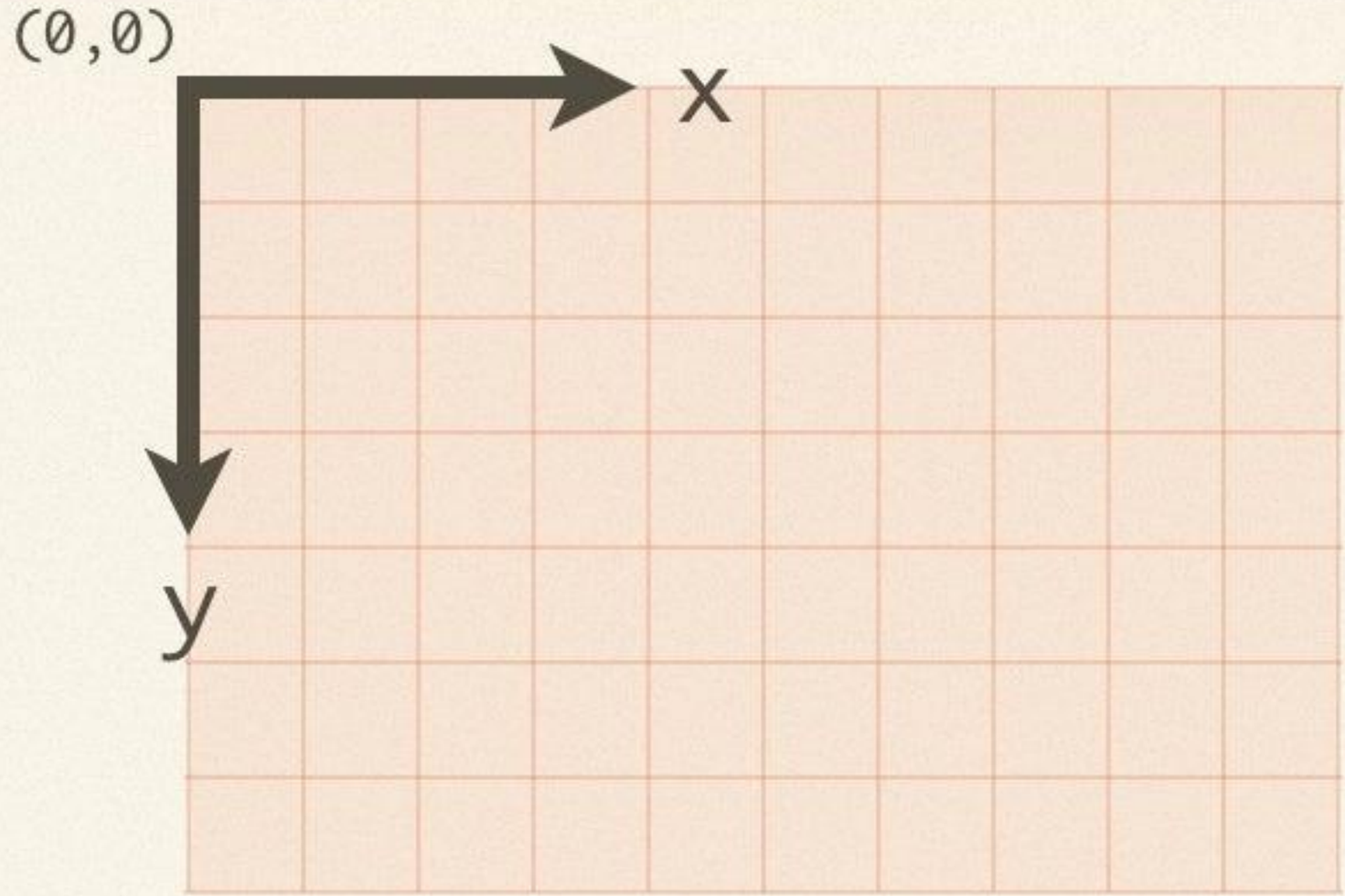
Here's something I made earlier

Getting started

Created using the new HTML5 tag

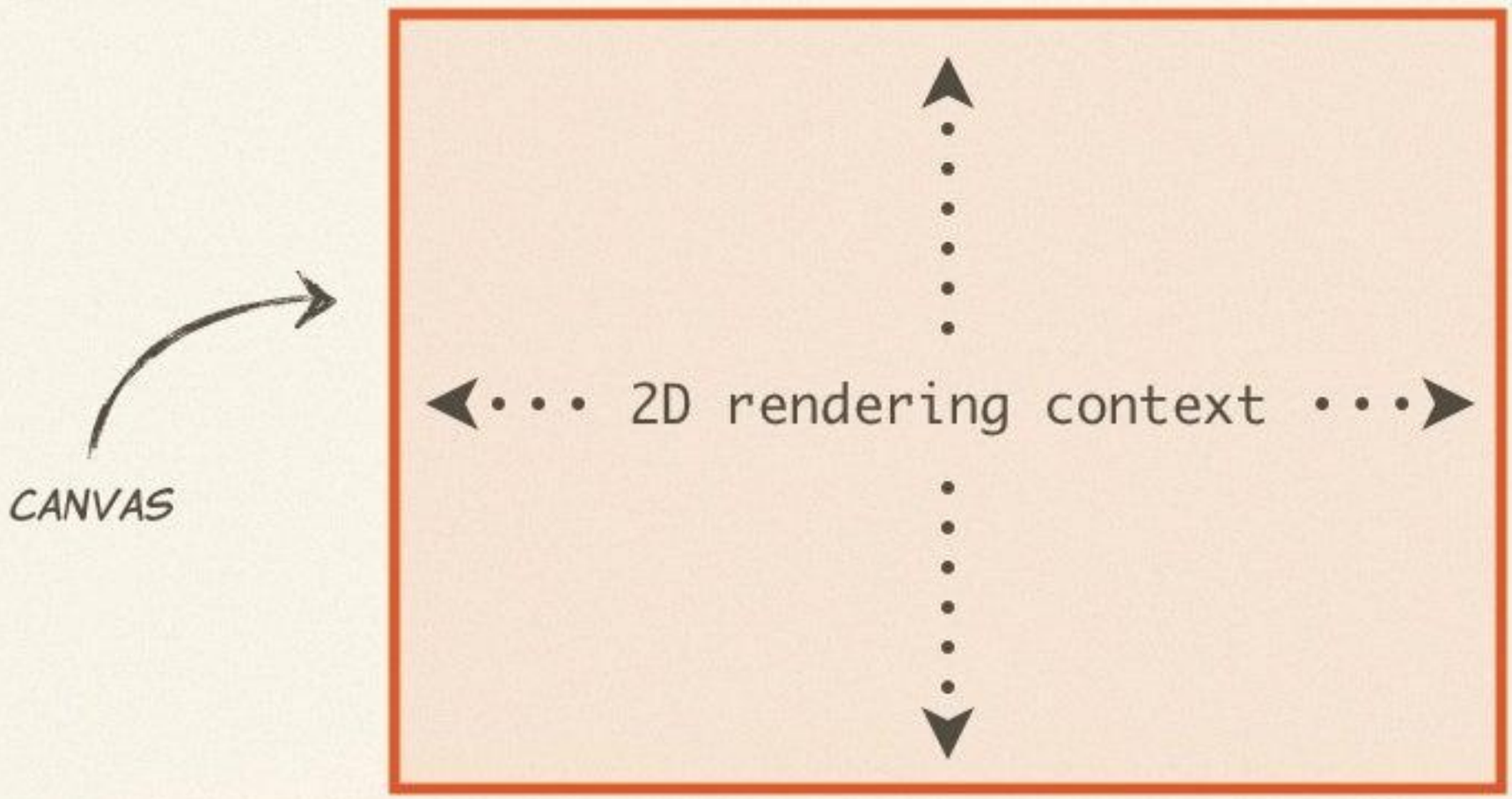
```
<canvas height="600" width="800"></canvas>
```

HEIGHT AND WIDTH NEED TO BE SET EXPLICITLY



Uses the standard screen-based coordinate system

Everything is drawn onto the
2D rendering context (ctx)



Use ***getContext()*** to access the
2D rendering context

```
var canvas = document.getElementById("canvas");
var ctx = canvas.getContext("2d");
```

```
ctx.fillStyle = 'rgb(255, 0, 0)';
ctx.strokeStyle = 'rgba(0, 255, 0, 0.5)';
```

USE RGBA FOR ALPHA TRANSPARENCY

fillStyle() and ***strokeStyle()*** define the style of shapes to be drawn

Simple shapes

Method	Action
fillRect(x, y, w, h**)**	Draws a rectangle using the current fill style
strokeRect(x, y, w, h**)**	Draws the outline of a rectangle using the current stroke style
clearRect(x, y, w, h**)**	Clears all pixels within the given rectangle

Simple shapes are drawn without effecting the current path