HTML5 Canvas

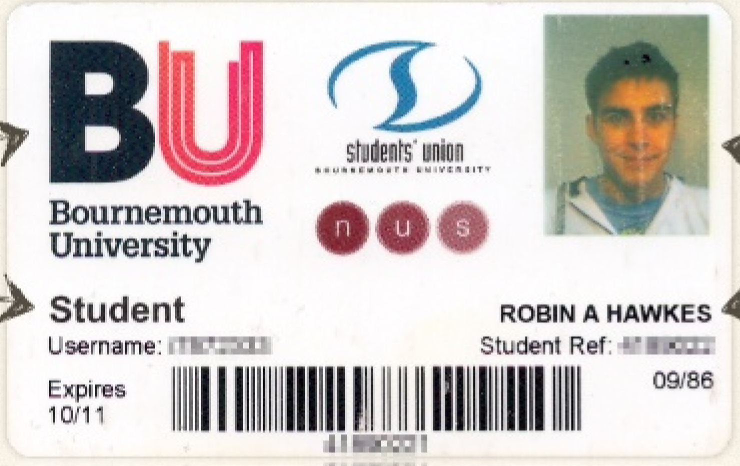
The Future of
Graphics on the Web

Rob Hawkes

@robhawkes for you social media folk
rawkes.com if you want to see more

THE PLACE TO BE

YES, THAT'S ME
LOOKING HORRIBLE



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n u s

Student

ROBIN A HAWKES

Username: [redacted]

Student Ref: [redacted]

Expires
10/11

09/86

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AKA. LAYABOUT

GUESS MY
MIDDLE NAME

> “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

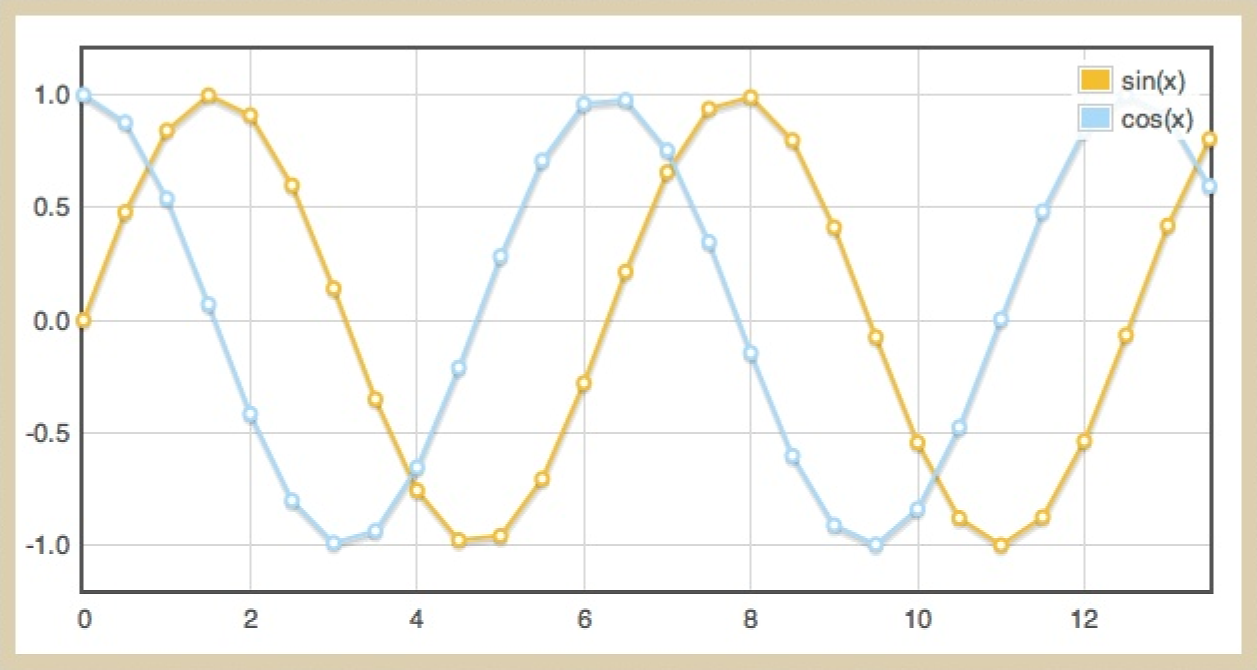
Bitmap vs. vector

- 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*

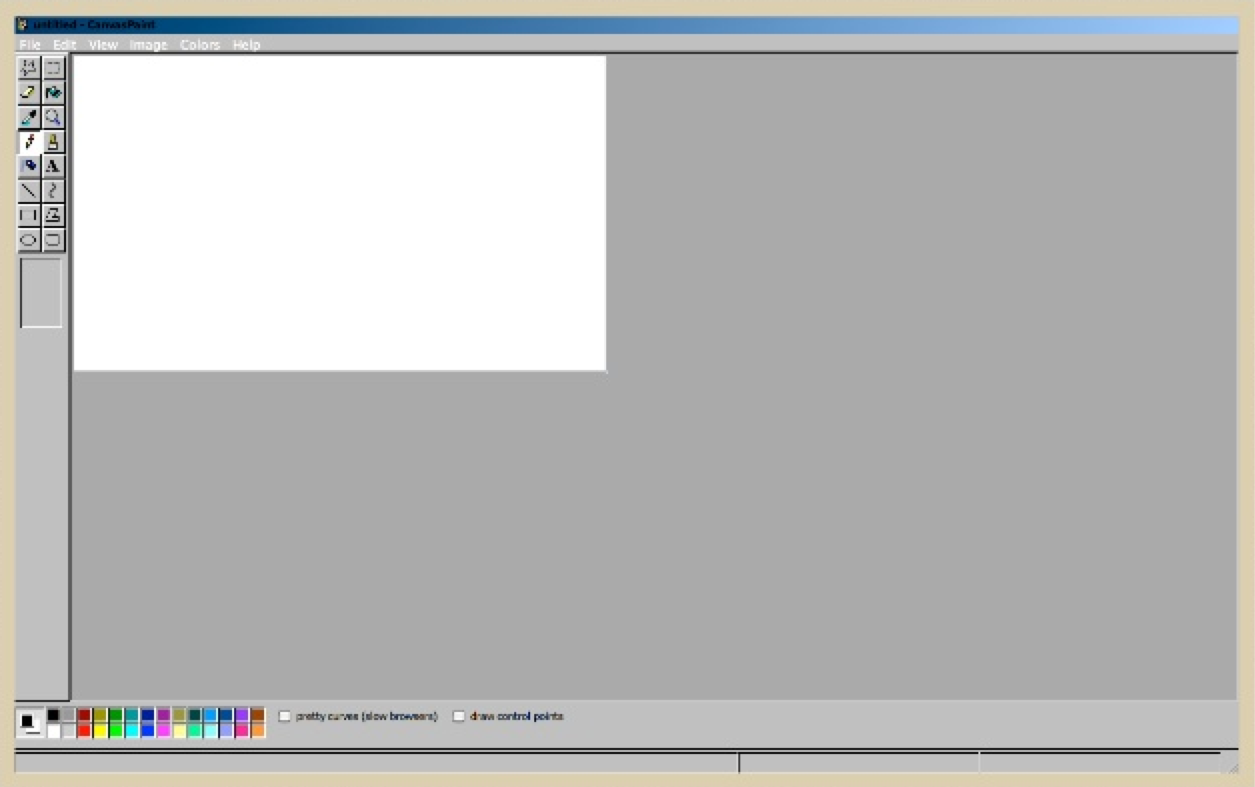
What is it for?



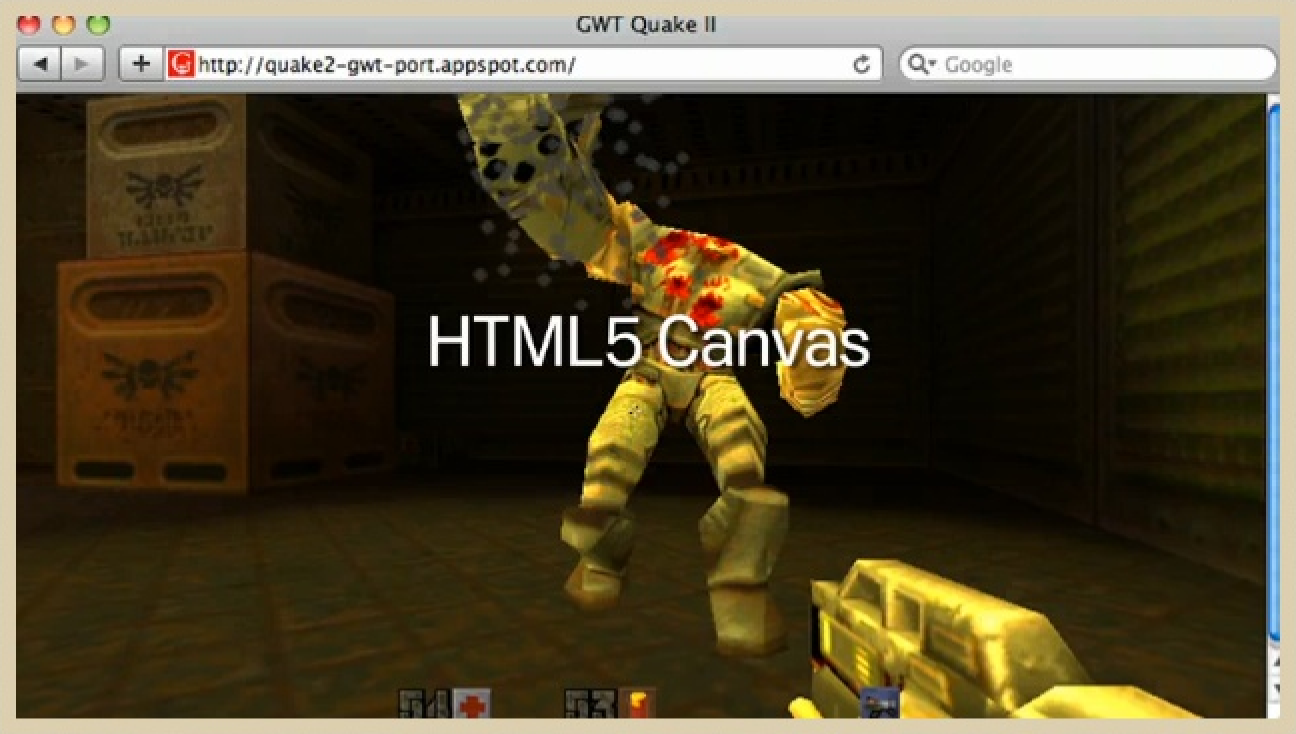
Data visualisation

I hate you, sir Goat!

Animated graphics



Web applications



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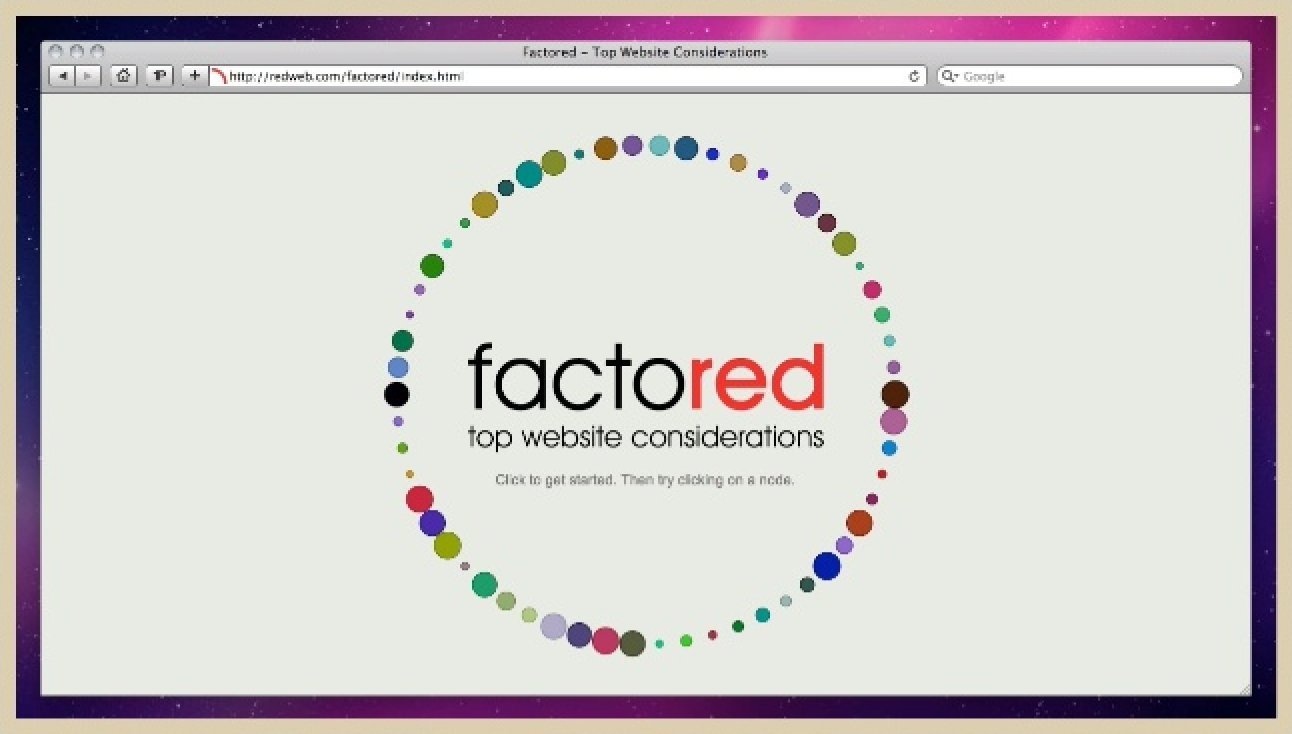
Games


Factored – Top Website Considerations
http://redweb.com/factored/index.html
Google

factored

top website considerations

Click to get started. Then try clicking on a node.

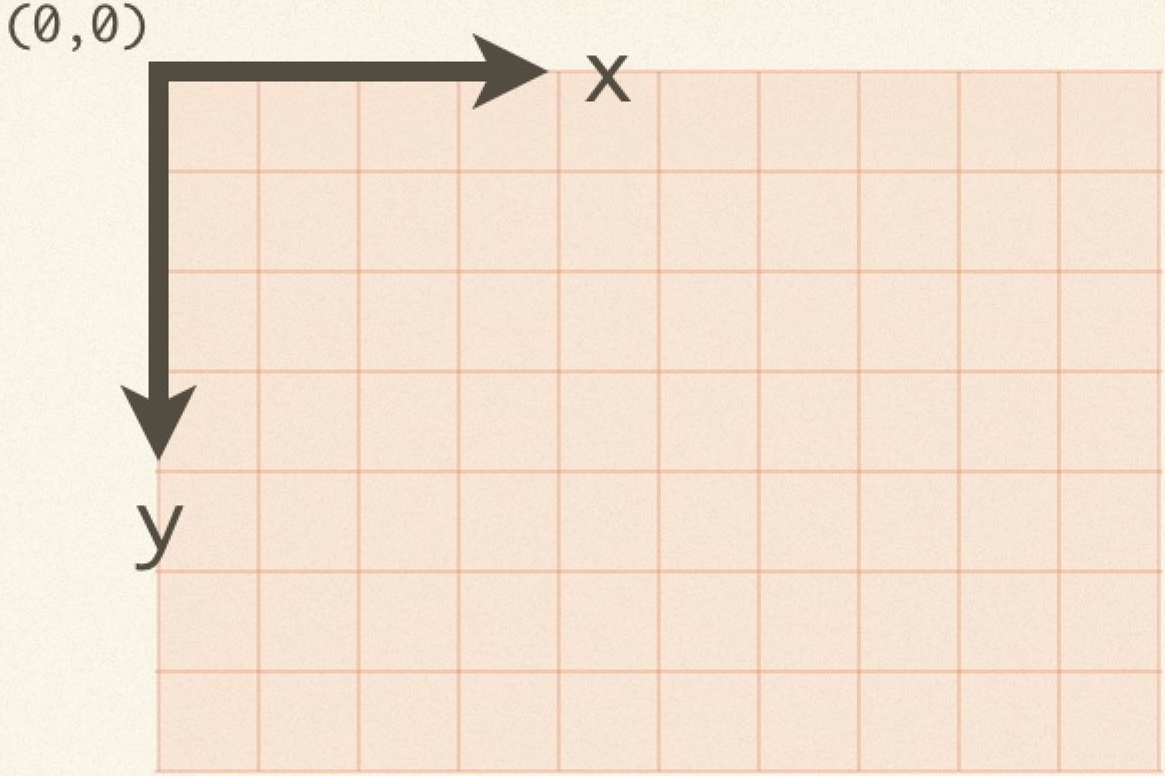
Here’s something I made earlier

Getting started

Created using the new HTML5 tag

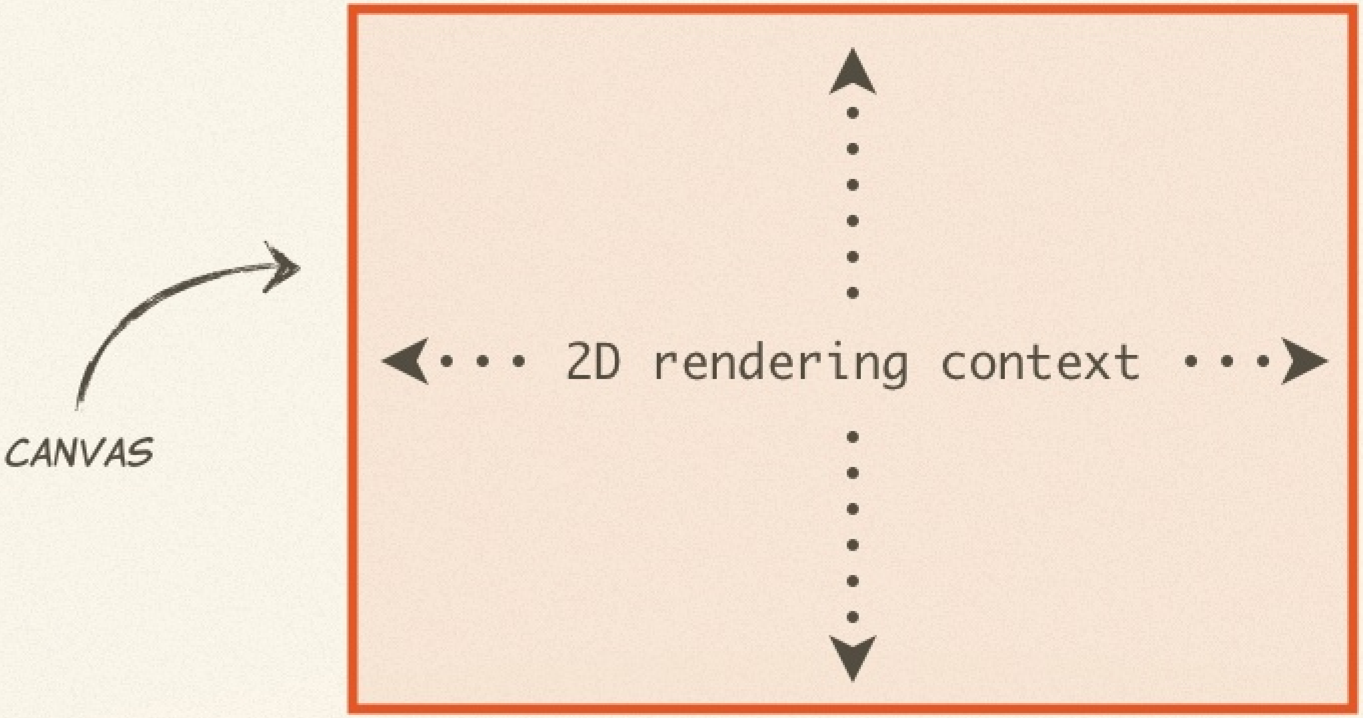
```
<canvas height=”600” width=”800”></canvas>
```

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");
```

THIS IS YOUR FRIEND

```
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