

HTML5 APIs

The New Frontier





What is George W Bush's first name?

• A: Peter

• B: Edmund

• C: Torben

• D: George

• C: Torben

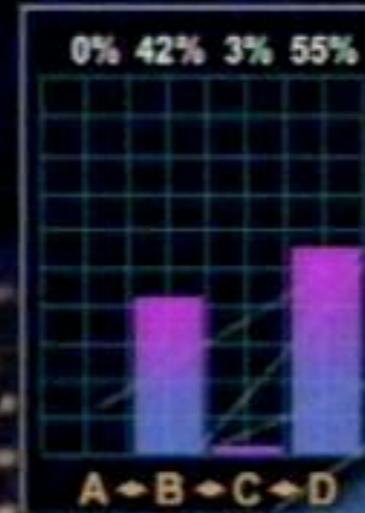
• D: George

• A: Peter

• B: Edmund

(C) 2003 Reality-Inc.com

ABC



What is George W Bush's first name?

• B: Edmund

• D: George

• D: George

• B: Edmund

(C) 2003 Reality-Inc.com

ATC



What is George W Bush's first name?

Edmund

George

George

Edmund



www.says-it.com/churchsigns/

www.says-it.com/churchsigns/

Video



Video player controls showing two tracks. The top track is selected and shows a progress bar at 3:27 / 4:27, a volume icon, a resolution of 360p, and playback controls. The bottom track shows a progress bar at 3:51 / 4:51, a volume icon, a resolution of 360p, and playback controls.

```
<video controls src="nasa.webm"></video>
```

```
<video controls>  
  <source src="nasa.mp4"></source>  
  <source src="nasa.webm"></source>  
  <p>Oh, you use IE? Really?</p>  
</video>
```



VideoJS
HTML5 Video Player

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SKINS (100% CSS)



Original

Tube **CSS**

*vime*ss

hu**CSS**

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Video encoding provided by [zencoder](#) - Video clip is from [Disneynature](#) [oceans](#)

Video encoding provided by [zencoder](#) - Video clip is from [Disneynature](#) [oceans](#)

MORE...


```
<video src="http://vid.ly/4w2g7d?content=video"  
controls></video>
```



- Zoom in
- Zoom out
- Rotate left
- Rotate right
- Blur
- Invert
- Black & White
- Noir

Video taken from [NASA 25th Anniversary Show, Segment 07](#)

Video taken from [NASA 25th Anniversary Show, Segment 07](#)

- Blur
- Invert
- Black & White
- Noir
- Zoom in
- Zoom out
- Rotate left
- Rotate right

```
// Methods  
video.canPlayType();  
video.load();  
video.pause();  
video.play();
```

```
// Properties
video.paused;
video.muted;
video.autobuffer;
video.autoplay;
video.buffered; (Unimplemented)
video.bufferedBytes; (Unimplemented)
video.bufferingRate; (Unimplemented)
video.bufferingThrottled; (Unimplemented)
video.controls;
video.currentSrc;
video.currentTime;
video.defaultPlaybackRate;
video.duration;
video.ended;
video.error;
video.muted;
video.networkState;
video.paused;
video.playbackRate;
video.readyState;
video.seeking;
video.src;
video.totalBytes;
video.volume;
```

```
// Events
video.abort;
video.canplay;
video.canplaythrough;
video.canshowcurrentframe;
video.dataunavailable;
video.durationchange;
video.emptied;
video.empty;
video.ended;
video.error;
video.loadedfirstframe;
video.loadedmetadata;
video.loadstart;
video.pause;
video.play;
video.progress; (lengthComputable, loaded, total)
video.ratechange;
video.seeked;
video.seeking;
video.suspend;
video.timeupdate;
video.volumechange;
```

Canvas



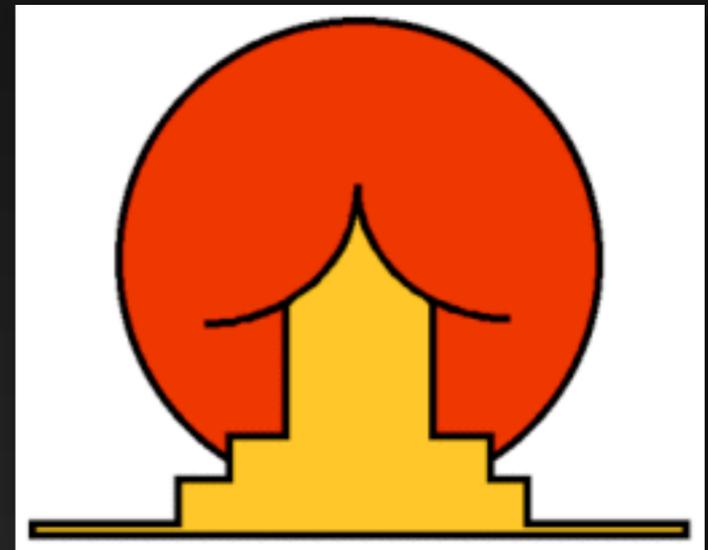
*Apple **even** creates open
standards for the web*

-Steve Jobs

```
<canvas id="my-canvas" width="500" height="500">  
  I am canvas  
</canvas>
```

```
var canvas = document.getElementById("my-canvas"),  
    context = canvas.getContext("2d");
```

```
context.fillStyle = "#f00";  
context.fillRect(0, 0, 100, 100);
```



```
context.save();
```

```
context.fillStyle = "rgba(0, 0, 200, 0.5)";  
context.fillRect(50, 50, 100, 100);
```

```
context.clearRect(40, 40, 20, 20);
```

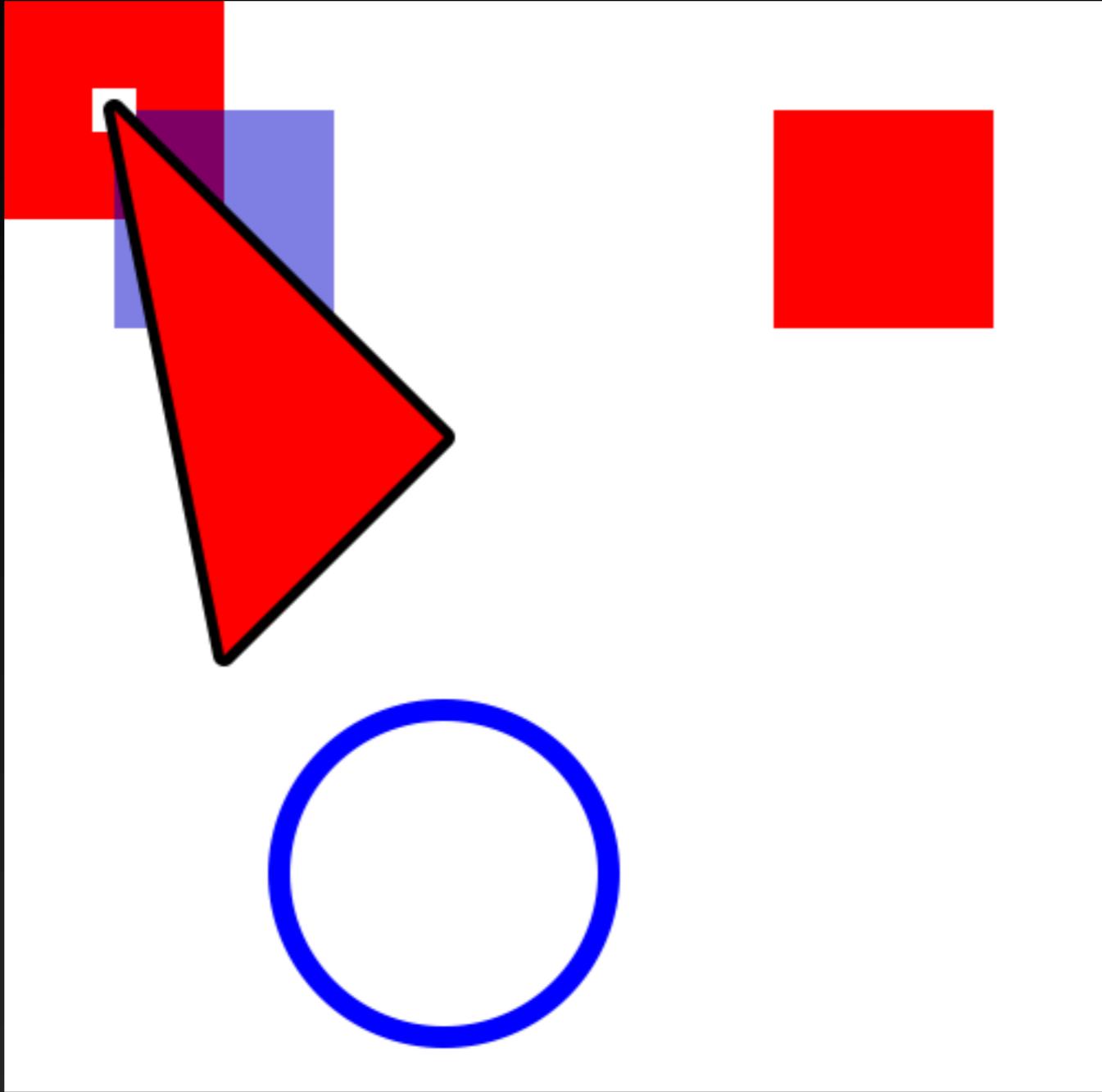
```
context.restore();  
context.fillRect(350, 50, 100, 100);
```

```
context.lineWidth = "10";  
context.lineJoin = "round";
```

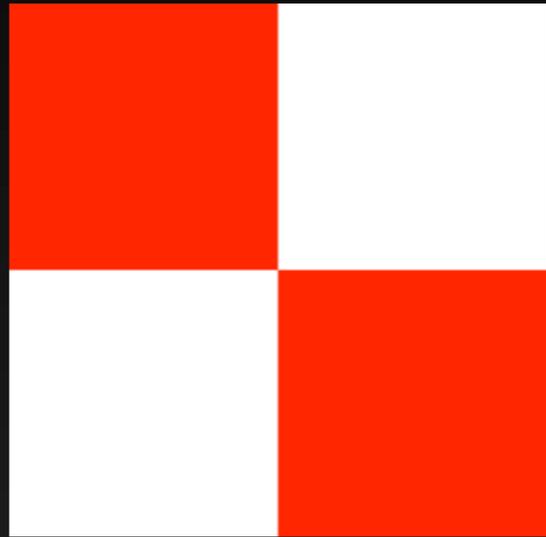
```
context.moveTo(50, 50);  
context.lineTo(200, 200);  
context.lineTo(100, 300);  
context.closePath();  
context.stroke();  
context.fill();
```

```
context.beginPath();  
context.strokeStyle = "#00f";  
context.arc(200, 400, 75, 0, Math.PI*2, false);
```

```
context.stroke();
```



```
context.fillStyle = "#fff";  
context.fillRect(0, 0, 200, 200);  
  
context.fillStyle = "#f00";  
context.fillRect(0, 0, 100, 100);  
  
context.fillRect(100, 100, 100, 100);
```



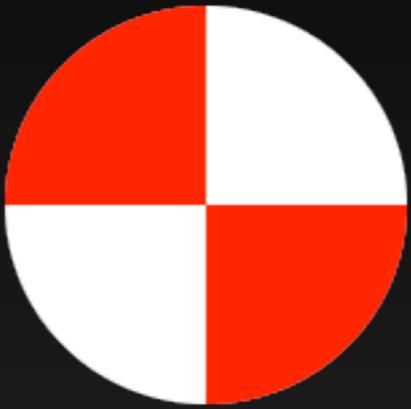
```
context.strokeStyle = "transparent";
```

```
context.arc(100, 100, 75, 0, Math.PI*2, false);  
context.clip();  
context.stroke();
```

```
context.fillStyle = "#fff";  
context.fillRect(0, 0, 200, 200);
```

```
context.fillStyle = "#f00";  
context.fillRect(0, 0, 100, 100);
```

```
context.fillRect(100, 100, 100, 100);
```



```
var canvas = document.getElementById("my-canvas"),
    context = canvas.getContext("2d"),
    img = document.createElement("img");

img.addEventListener("load", function () {
    context.drawImage(img, 0, 0, 600, 200);
    // Get canvas content as a base64 image
    var base64Img = canvas.toDataURL("image/png");
}, false);

img.setAttribute("src", "view.jpg");
```

data:image/png;base64,iVBORw0KGgoAAAANSUhEUgAAALgAAADICAYAAAAA0n5+2AAAgAELEQVR4Acy925Icu5K0xz6QXGvPmEnv/1a60iPoRhcyk2n2XmQf5J970IDKribX/ueXmUBWAQjEGYFDIroYH/63//3/eP8y6f19FQv68v7l8csVftbfHxbql4eHozLgh48sN4FK0Jcf+vKG8VH/fpUenh4+0BQffV7enz+0V4bx3n80+u0XN1lLej2Men3dBtzT7+3hN/oNrxuZI5Hs8TE+q+8qo/hvj/F/4dCA+yg4+d0oV/zm4JEen2/poTnpvz28qA0EM3rQ30mCSbW3t7epp5/gf/J4fhP9pMKpUia9vMur0LxFUaDFexTo9TH8i98cWsrq3pVKV4Bx315bvZsTf+vJji43n6cn06ELXQm0LF/+rfgHMXr6It8JMTwj7vUh9NTge+auLH+mVpzUvzn59hR/X+FtP9z/gT80P2eAgff6+vrLTfEK/PHx2TY8Tzt21Q/wrry3L/Hfuzqb+If+VTn14hBrT+Mn4uGMidcJj+LCu3LIv6t/oe8HGLj9AH9VjMBT2Zc30zxjEZwf9K9iB/vAeTACs0J6Rr1heRmGKCN5T29fnp+fpfPjL++KbWRYp4dRFpyBoT9tfB7HV0i3PpL/9v4Nk/6thN71EbadqbKav72kvf4oLu1JiakTXlpyRYCaEkPiTLvI7TPsjG30X202nX0kvchW58Jnrvspffc1bRdff8x0UH102ZTf3n9Ih60HjQXmEWLnVUzg8dfPtDJuSIyj5Nj3pjGLUYUdo0/9UP8RLZVd0z1fDf7jDL9Tr83/i7gTz+JinyjaD9vA+0G8a9zwKR1+0tPy3cQFrcCIsw/yf+d09MM6bHhRgZx576obcPQh/yF9KL+MHhM04pL591WAJ83h9pEH28S2/Ij0zB+0WeeZw9/EF9584HOVL+CSz1pHe5PnE0LDbh4yBN58sLm8wlt8nrN+PmkAflVnPBnNjE3p+q7Pf/1mfn6ZcWz58LX1fhj9X76Km8x4Fv9n8f86/0HtPtX8Up3gUfrm/zXL0+r/6efa81XMF/0EE0M2c6Dm/HfNqdIRfuoi52+eGwWTmQ9vP798//osvR6/fJP/vz5rznt03CHzGeYQkyiTWndFX1d468Zdw6vY/35eHcoX+S3/d9jDh+G1+3CCbuKJ9sdl87ZTIbeMYII6/VFdi7D0HMCJC+isX3Hv8ThxTlpw29Y87dG1s0blfc3Lk873oNRwIAWupcULAo0bmSgD8crz5JEFMVLiyomlgJb09eP2rHgffXgip3l1Crhdhdc7WnXplQkgDBLRQBmeTEIUg0GDVbLZ62W/dPhE8MpAX+ZzDyxDt84IP/Wvj4CTPqvTD2e6+rr1+uWax5qTQ/Q4IfAoH/LyAGdbL5KaYxnuoTKpNMCIG+qFkZP0/Eo7bFZWejYgq2wm+HcvQD81Qb4ymb5oop0rmLxZ/zxBuiy93V3hgz+8WRy/vkvfxrooZRR4gUVHLsDSB5rfZXMWx0TAUvfTARqfthaxs03ftvw+h7af6laqwsu/cPK07Rwf0YXFLe1J07IvduChT/sxPmh8pt/xLzzjZ743/huLlQD4kVQ+LmvwsMnC9/g4fouEE8+E+kLX4MQXwB/S0dqIb5iklWTJq700+AK48em5DvzEL+2V0ZgujJy09JBN0jra+Yb2DRMmBmgFho1gk6iTqlPaY7/pZ1NB0zrAjnh129CawXyBF163cScK0cpnBzLzFRsTUuVTrg6UkdkEvPzZTFEnWS/HUmWXijl97sAZs01Ei07lcUtx1BJMwRPNiY8u20T/gwflUP5rJdzYfAoTmHFwc/Eb02T8bb/Bb3ZIIo3m6r2ZX340D6L5Umsmy2lc/F5IN8hfVsErXX+uj8MqLtxnmBr0+rwqvh3yjUAWd+knssn4B/o2w75KCrrntf6leVpP/166gZt2132kAgH6vTHyd/9I1hpmk0RcjAKP/kb5mYrAcLow/hhrLp2Q/kGohA6m250I8Be5wrwnYEuT0QzMJrW4jQBftoGTqiKvfPidQAz2BmIc06mdm0nVNtLC5SrBRK+kGrKXV31uTA08M63ry630bYP/vCyPB0BPsyEyDwsdfSmmsEWQr690K09TkS8SNueU7fgXLU4baHtWueEj9T+H/MwBHG1/aoduZG07g2PUCx+wqd81k03X0wW9oMnDdHS/9JJJA0PRsRB+ZBf7aC9s0IhIrxPqyIYuD/EnWzI+QFt2uQz8QnAxuov2n7qCn82WL5KFruv4Gkie1IApJ+QgQ6R+UbAqf4iXXvlnUWYy+rc7XjKgeQ/GM/cq1KyqjhWvx3KWzi84UrJkyyJDbtpPomtf1dP0eZLnCiUwzix9hx4l/7Eo13f9T364IGXcSn47CcgLVv7umWtmCX/uRBuz9yIjmnR0owyXpy/CQeMmYrU4hTTA4d8Qf/eyly0xac2C4vLfrCek6qC/BtQuezdVxV7Ses9jWgyUnA/RE7X6gDgzdw5Q863Wjypt1jWseywYpZRXV9JS3abaewCivredZr5tKoNhCrFvfwetJc/SRrxXzjkexRT0reqwP1aE5PHU4ZL9seTq18V0hWqX9nJ4hs8n06IcAT+z4iYVEvkYHldhk8znvBpX+Jh+25dm2+ILG2qvcYzV9wwjLQgz+7Tdo4yPoAgdm29BVqXxrij+WCI38+yb85pRJ3xYcmH9nzungyps4xgL1P8su35yd9Qk8dPJz/Kp4+wbJkhAhYwRvWUpSjVqWM04pvrH+/dJVJfecn4DTvcduIXvTy9Rsa3aaJ81Anip0npqTXrItv4ujVXnTjk0bfMA4w/00nHt+VT/bYyu33z2gFRfcjrg/Je4ZZf8tq0+ +ykL27oaeHkCr6ELb5X8BJcxMMMQGhKV17WQwj0Bbz1TbB8UqRivKvFjsCXrE49TEakxXurbjbbPbcvDuWUfPef0T58PbAhmLR70T06iocKiGSBpa99ZC6Y5w3J7CJRlA3mV+E8eZMLSFQwd/S3vy75Kbvl5tEnG5fstm3zi/5tP/PinnpgFHW/8m3ssBXMg515MQxua0RDE8ycZZ5efIA0x0bfeCs4MP5QBW5nYzSf+EG3calzFqGrymjg0+vtDr81MT2qs/L63ffzn7zUYHwmMh1+/PdEz9RpJsMtg5sUuSQdSHCVN8VerCPgtNYhx5gucSNfIJeIXu2sLzFd8YkvoUnUXf6n22BLc+bn6LkVp5tA3cfvZC8bmM0pEv0eIBrd1peLDKN7XjW40xNvZihTkTy/EQdPDRB8r02/S78FjMs8hBo+t/+Z7+A+8h1/BQeRPAQFu6Mrbl7Pqh80bIkviF382GTWjGwPcZ38teSXRK90pvFYSTKvMbcU5+m5DJp4t1dUgs2BPeVFHSbDnEnPJEnqLaZW4o2T+CMzY4k8KX/QchuHDgdDVbIaCqy4hlB/oIIm83Wz+Tp0o+cV8NUJI1b7MVZfxN/8xtL0h0P9c++rW44NQPlEnZ0KXmd3SMNzdUPomLsn782PjyqcwT9yxjX3GaVwfyr/hhPufJUXlAg/7c0gSPHE0k2vDnyfcax4/4Z+he5LvwU6+og+BJDzCXPgvygH9506xk7XcFyLM2pFzE8YgBGjjZDS8fIKFMIQYVJlAAqN8wu/hFf+/k9dByGpZiF9rluWAPknwyAYpARG+I08A4VmFJDn3KNXe0nSaPviE8/GHd9R7kfICrJ0+rLH0gUGTWLgbDvLUM7pSqHJt54bXn0L+YznFS/mT2ApPDzYCK7xxrND5lZHeMS3PGtBE070gb+Cv7g+uVLws8katyzCK10b2iuVeebgdNIt/jVv90JXGfhcLEZ9GPW50nr0pJhnlU0WChMgiTZ1hgcbmyz6xZnKTWDD9JDRXjL5p18c7A+pNMo/kCkL33y2/oHd1oNvmomx +N1swkvwM0Hf0KLEUAKLvzhFqhzgpTkn5ZZp6wRGzqTz5TUPQdBWPmdu9+Nwfc+/vr/y3CQTppZqPX/yokm0NiZ65k3z95yID4gtbMAqcPb8LYUBXpkk8ScU0SPjLnpErzwjqKnRzDRhKvcp1PJH/RIep6zwTJ/Ed8FB1+I1R9Mm43LERT8ICB/EexPLRgR64u6TFJ5pjC3R0XwnfsTVCIFFBoDihxrvJfkCaCr47JETXvmYdQj/21bGtIL/XbLkXtRV9IJKztzhZ3nk+me0SCZLLpas0daL/lu/2J8+rL7d0JcHeXVv3jbrJh+e6VUb814EcPFEWSouHtvYUG256Tv6k0Rvdc6T463bJmaHzP/E6HVzZULHU/rF9ctX5fk0gsdIcJnXTER/SyYJ3GG36o8aF6DUdjYJRgk9pXt93BuP0MNj9f9hAilH22CseX6cMwupn8n0sU8cT2fjgB/LAqjoGVFCzYVb2k6/GHc31BXnHzqMmaGIAnRo/fmZT+ka3bHKRLQzLS/lWdnn3NJs6+j/NVRd6c1qF7sw5sVNycZBigB5YPBALWnGQ7dJPvNinYC+PmsDEfMTrZoMlsv9fpBqCMqj+y4RBd1J5eP0bZ9JLDpbm00E8PGN3ke07MyfwbtMpkgG769DLUXgDJ7qEZ+CFCd2DJ/XSpP+CTwCf+lBee07Lrd8pZ0y00vbA6JAgKb9YxUDAL2j0l0IFnbjqs6z4t+WTFnns0m/TbX8QuGxEGCRmxjyzMkAE7nTbJBPvsBbh337srHQ3PSeGFK6951JVQoolwfxznf9J32k15sU5cQLPj9U5RjLfeSiLPfiY92FI0aPy9Gb/1U08mrD2QbsrINH/TN428+c8jVB3484Xptv6pV3A1QF0J88rJtWemyfbjG98Exa9AwjMq85bST4NW9ZhvRUiUu5vcDi7ImaSQp8TXqNHxb1Zy303J55FK43IF5AFE34UrDoTY4+4pmZU2JFFINZLMFhAiW9HRcI9CW3lKGjv0kZPbv/gFkWApsY1/1qsfWWL/QvCw7t8aHxBp8yCR7Ny6/6US9MmeFZJ0srtkb0AqoQ3qFDB9L2d8qr3isQ4WhJt926rREa7apwWfUJ3/I3iqmiQTbCzB1skll6cwUSn3dxNGs5Lbz25h1uV/5Lx4pSHpubMwZHV/s3/Q96aR98BdVbP70NAffjnCW6u0Gbuk8jZDj9wYaqKWVmZ0nPXDF+wnPdXDEfsibIGn0P9cTZxqeMCvviVhJ0H+A/8RCrN10kICuf2Mbpk00FXwGJGfq/eGHXyYnaag9xvmnLY+ciXsJrD3npXmXR07bIMQXTWzqkGf5ov0F6PJRsw5zeDXd05NHAAbwGjv3wPhPjDz9p1KU/8JldIr1pE/vyvaGrXCEX51hvxRX5cUbWkrEUD2aA8GSofIWJaLM0E0VIVlljiiFDXMCmq4N1mko+K3j4DMVfsL+0+WTXzv45HcPdrbl0LUFt/xKx5UXMLqAtPy6zMqCml1vgglc0xz8oC1PyvdS25uDs8TcIxyG+KvPvXvSekHVBuLZ7BizyJceGDrBL06qu3T7u0aqyNleJz0XPyoew+sL/GvDVRzmTgPHpAfzpoGfhjmeIX/g0XcsaLzft5lHaS/+Ux5nnBCT84W1dxt+u0y6YDLSYYr+u2DljI2WRZTFXRRMqXDjJYiAx78KLvj2v0W09YwvbleZ6BB9+fCdlsm5527HalxFW/m3/LK8+tKeMQSLT76fxU76lo07favQsXHgBly60PpkSrPzAaQLPFunrdnPFYg1fPd/AyZVmKdYRL2qaDjmKf9aV5Vf9WrBX+oQENBKpD7Q60RM90xz99f6gM0kvlrP4iA/p/SVL0E9kiFV4aPF910eaald9cLZHdhYz4LbNNsQ/xS2P4uAAYP0Ub8tIjBXenPby2rjinQhXfoDpD3D7KS/y7iNYMFiwDNPfzyMbWusHhN7aH4HFC3gSm1Po2fh6s4q048foWv9Ud+be3uItl53XvklQGxvYE9eGdyZ4pdav5Z8M7PY1ChuBzVV80Qyb5/iG0husbrL0RJL5Jxq4+YN9GJ2LxB/K5VHjZHNFGS/FMZygti9qT+04daYN2cR88FRGXX0Esdr9Mt3IjC/4tTY+mI2BtLQGB9k9HeDDCY7nsqirrk+dgwEM0RmyvZXclJdGS9IELK1+eF6hL9CGk32zAg3za++bD+y+7EM+UR87XPFoudjqqw9EDkMoenJ1FVG+QE/+5k6bW86KcYmt0mW7USH8bk38GRHR8jjLJ3hwWab/Fk2JqmVeUcweLGKEAPPddhg0bsHo+Ez+En73ynDH6PPLGA+Idfyxr/Slx5Z7pztlbNhrk0PuU0W7c9pcvWB5rJ/pLMGSRvkFwZemz1b+XvTLOPHrGR4XnlsbmX77k4Lxp1JMXv3kpCAinbWbwC75eMYhvJoLhL2eVJ3nldrLxgfNhoERW/JxyMbd/a8Nu2aWTP+X0226/luhLoU1CP/UZI4MhJJ00HIAHGlw3ZBaGELIUs/nisC26Da7lh3V1vubDcvmo7ZEtfkIoLJxuv882WevG5reYv6/Bq3KLfcIqi7wf8KApXeGFEX8n3ckX0K9RaSpe6+SL7wA3Dh0Xfob+lZ9+s/iArJ5QPPMahm/60TQ/k2cDHR7IyUTJ7UveN0HigoGXAbzpdSSN2/fj4WRWa+ifuJXEL0orVpN607e0sAL69Bu9q3vLZw5hbSVvmWhTi+sC04VP+DFqzkrBacsF+ms6ZYTfxjJ7/QWJvRRyN2dK3McqF+8uFCQRB9t0Hx+AJT8w8rP6UxLvm2AfnPHYw8+Cd/yvvpXHIvYhS0wUpb5LRcWvBI1le529EL6G7jQ3TgESf9+GF2wfJAO/0U3Zn3s2Fvp9FPs1gfv0ELz36QVd1P3fAVMmWQdaH0f3+GHzxQ3Lp07k1NYfgDEuElqqh9lg/o4FK0M6r0zn26K52Q1xQdWk092F//YZPtUgy4ZS0wm+Ys5Q7Q+Adu9dUgefQW5h7pQhfqsgH06/saFjDq1f1AM2oKxbDc0mX6qLLOzwQISg+JKb9XJb0Qk+zRifqKAN9kiV9mG6CAzCbfnR67jNCpx0FsZzqn+uPwHn01IKshb76jE7op/0nQ4AlaIJ90qH0hVGPc9qSnGdAfpUe5goGnJPXlebadLOXI0iozYd3Y6T+/uWfr3G4AFMVv0CwWnD3zcub/Imnp5VoWzFx7rp0hQc/0i1Zggwa6F/0no3ydd8LmX99ePxRV+bFBR/cha+GP7/5UPMD3ET64ng0Sbls4b1aBC8TC8m301Sc4bLqjGCC9evzN/P2oAqJqPBnJgwedpVa/JrCt+C8ydLsVK9yJivefBorLjvYQNwMuuKktLX6zwa6bT7LsKpFstV253oPGu1+9oQTEfv3JxYm0dwyid2VZ2YcHW0rlypM+zKD/70jd0YwPttSNumNKy6rnq2tUa9+fKCNRB4R+ftgAx7yZV08GRskzNXM/jXrYkRUv3Kiyt5+tZXh0Lh43LJgS8/Vy4f013vP00XNt+edXDvDuSEai8YPEhuHQzLcwwv8zNVJis/nyBb6P36jNuyPmXECxolr/IH5a+a7J5fvqm+GV70zbJnoenZ//0nNHiz/q0eYI3hfkq3jYyP43+cGTKbyQKTj9KU6SveU/+wSFw0GMVSHd26ra9w+8uCqYqP851oYKu4S+lgiDasapMVccFse1a0ey8/f/48H0DrZ+qMJzPHABFmJroK3zXj2dgKrk/o3+ST2iILbXV11aR5mP04hkT88Kf8i+PnLA8hP8P9ZTmD6mDX0hsJ1f9nApp7nkR01f5kIWe58Ue5C+9qU0chCM9eS90eNU4TDn0TschlRI40Tm5vjkOUZ/zMLL7UzJeFiC5JRH

HTML5 Canvas for Internet Explorer ≤ 8

-

explorercanvas

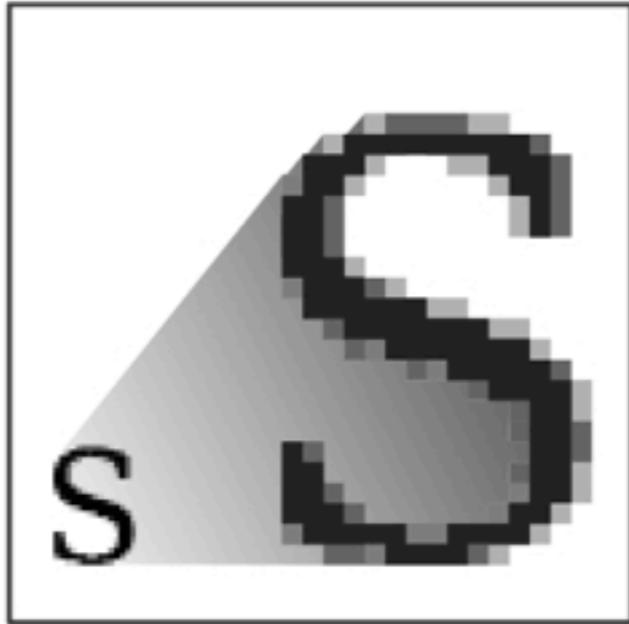


<http://www.nihilologic.dk/labs/mariokart/>



[http://craftymind.com/factory/html5video/
CanvasVideo.html](http://craftymind.com/factory/html5video/CanvasVideo.html)

SVG



BITMAP

.jpeg .gif .png



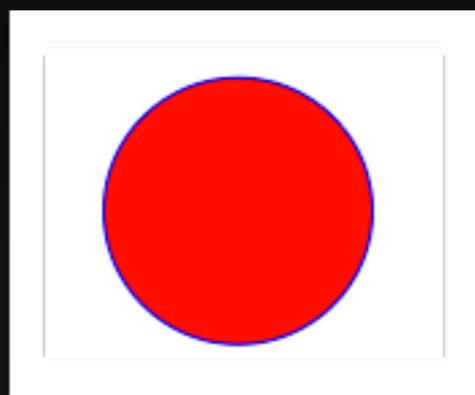
OUTLINE

.svg

BITMAP
img .gif .png

OUTLINE
svg

```
<svg xmlns="http://www.w3.org/2000/svg"  
      width="200" height="110" version="1.1" >  
  <circle cx="100" cy="52" r="50" stroke="#0000ff"  
          stroke-width="1" fill="#ff0000" />  
</svg>
```



```
<?xml version="1.0" standalone="no"?>
<!DOCTYPE svg PUBLIC "-//W3C//DTD SVG 1.1//EN"
  "http://www.w3.org/Graphics/SVG/1.1/DTD/svg11.dtd">

<svg xmlns="http://www.w3.org/2000/svg"
  width="200" height="110" version="1.1" >
  <circle cx="100" cy="52" r="50" stroke="#0000ff"
    stroke-width="1" fill="#ff0000" />
</svg>
```

```
var svg = document.createElementNS("http://www.w3.org/2000/svg", "svg"),
    circle = document.createElementNS("http://www.w3.org/2000/svg", "circle");
svg.setAttribute("width", "200");
svg.setAttribute("height", "110");
svg.setAttribute("version", "1.1");

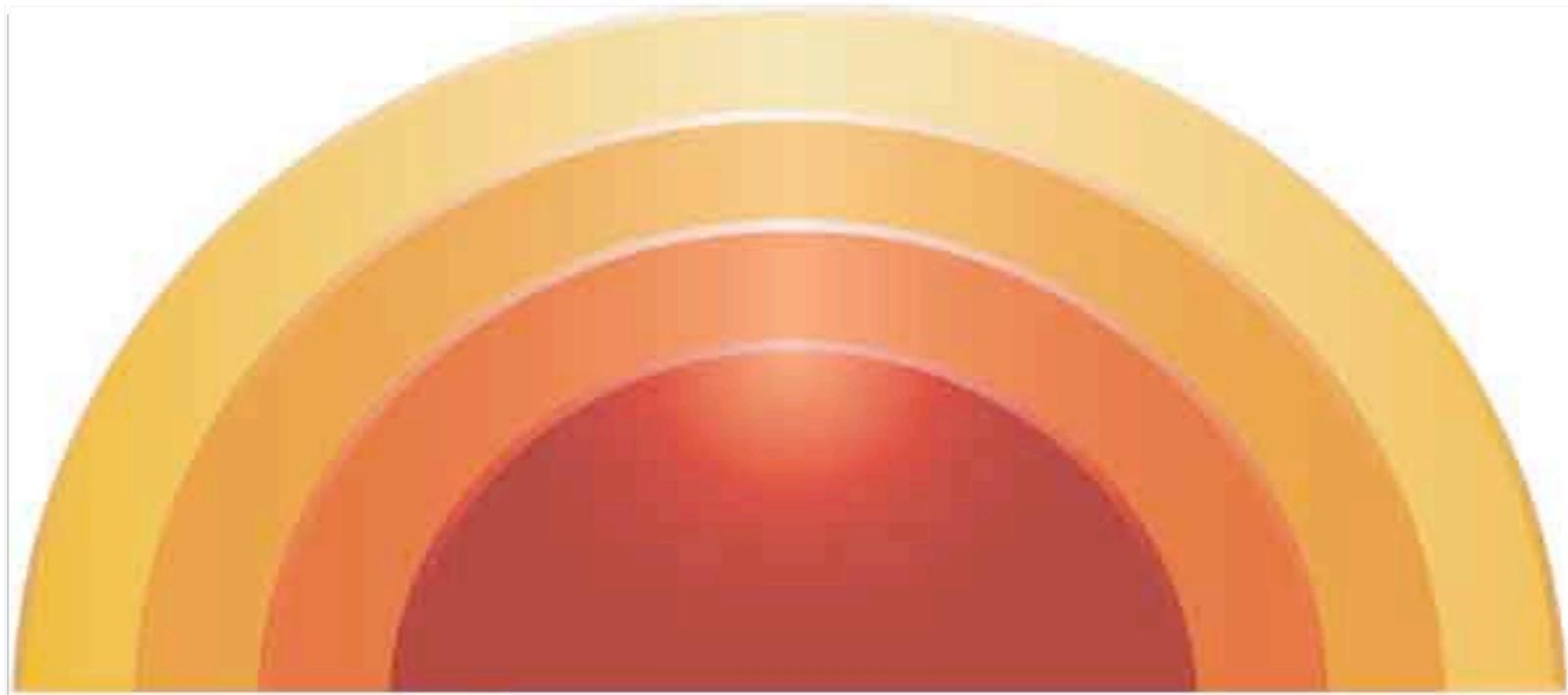
circle.setAttribute("cx", "100");
circle.setAttribute("cy", "52");
circle.setAttribute("r", "50");
circle.setAttribute("fill", "#ff0000");
circle.setAttribute("stroke", "#00ffff");
svg.appendChild(circle);
document.getElementById("svg-container").appendChild(svg);
```

Raphaël JavaScript Library

-

SVG and VML

```
var paper = Raphael(document.getElementById("raphael-demo"), 320, 200),
    circle = paper.circle(150, 62, 60);
circle.attr("fill", "#ff0000");
circle.attr("stroke", "#00ffff");
```



TODAY

TODAY

Inline only in application/xhtml+xml pages

or

```
<embed src="circle.svg" width="200" height="110" type="image/svg+xml"></embed>  
<iframe src="circle.svg" width="200" height="110" type="image/svg+xml"></iframe>  
<object data="circle.svg" width="200" height="110" type="image/svg+xml"></object>
```

or

Plain JavaScript

or

Use Raphaël



TALES OF TOMORROW

Inline in HTML web pages in:

Firefox 4

Google Chrome 7

Safari 5.x?

Internet Explorer 9

Opera?

FROM THE DIRECTOR OF INDEPENDENCE DAY

THE DAY AFTER TOMORROW

MAY 28 WHERE WILL YOU BE?

MAY 28 WHERE WILL YOU BE?

SVG vs. canvas



Vector vs. bitmap

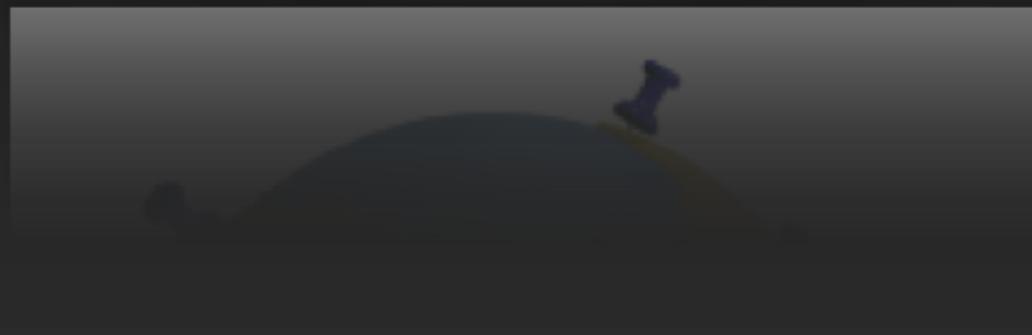
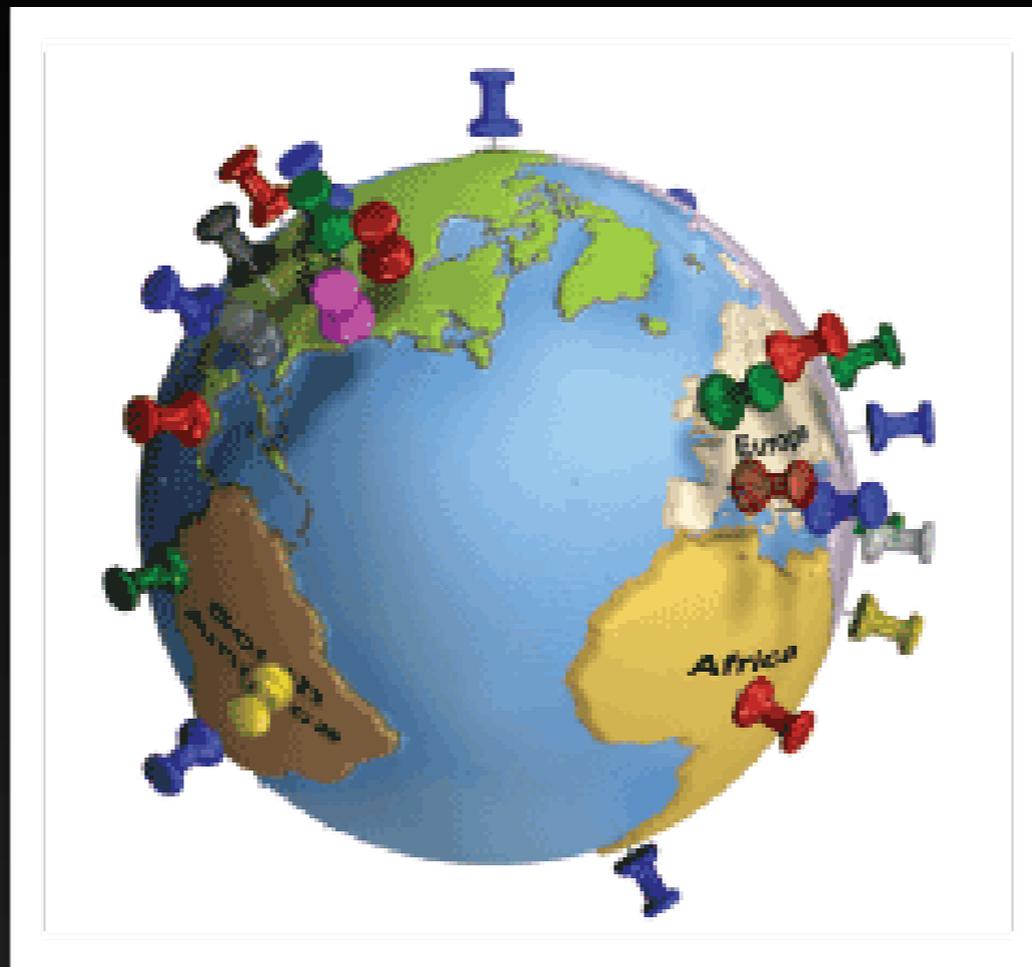
SVG for interaction, shapes etc

canvas for speed, animations

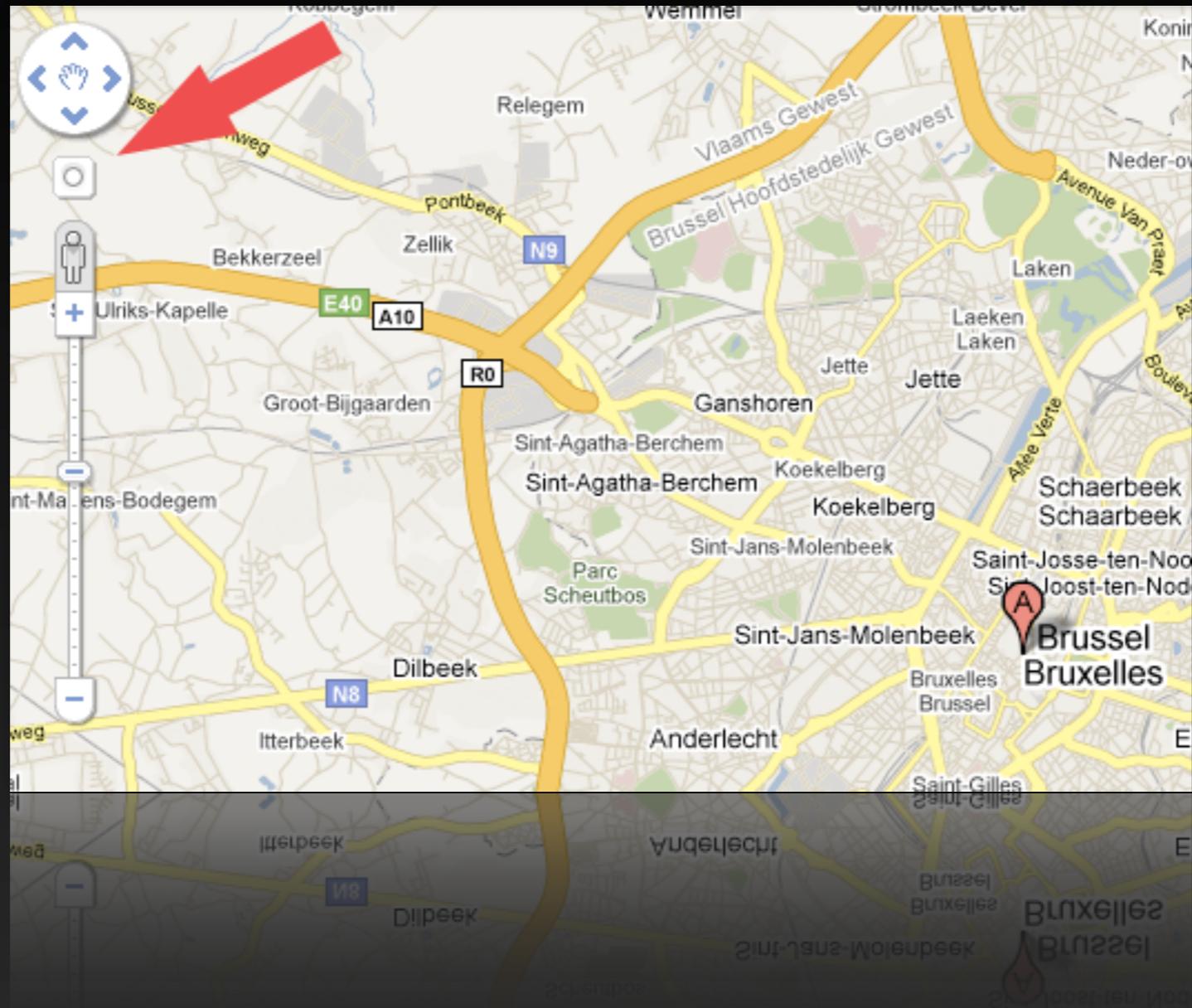
SVG = “Real” DOM elements

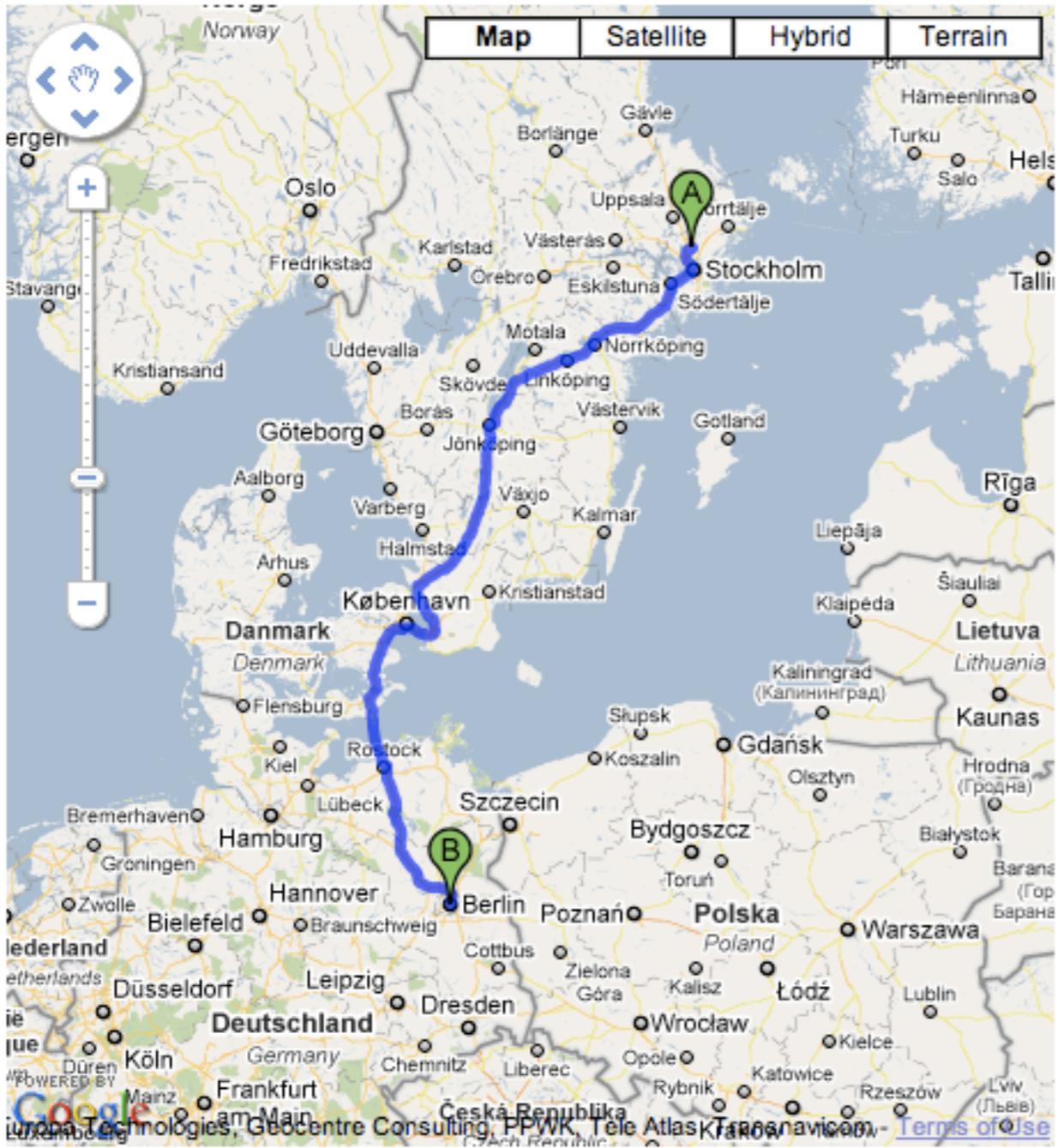
Google indexes SVG

Geolocation



```
if (navigator.geolocation) {  
    navigator.geolocation.getCurrentPosition(function (position) {  
        alert(position.coords.latitude + ", " + position.coords.longitude);  
    });  
}
```





A Lindönäsvägen 23, 186 92 Vallentuna, Sweden

1,114 km - about 12 hours 16 mins

1. Head **south** on **Lindönäsvägen** 0.1 km
2. Turn **left** to stay on **Lindönäsvägen** 0.1 km
3. Turn **right** at **Lindövägen** 0.2 km
4. Take the 1st **right** onto **Route 268** 8.2 km
5. Turn **left** at **Route 268/Stockholmsvägen** 0.4 km
6. Slight **right** at **Route 268/Sandavägen** 0.1 km
7. At the roundabout, take the **3rd** exit onto the **E4** ramp to **Stockholm** 0.6 km
8. Merge onto **E4** 27.8 km
9. Take the exit toward **E4** 0.1 km
10. Take exit **155** toward **Helsingborg/Göteborg** 0.6 km
11. Merge onto **E4** 316 km
12. Take exit **95b** to merge onto **E4** toward **30/Helsingborg/Växjö** 223 km
13. Take exit **30** to merge onto **E20/E4/E6** toward **Helsingborg S/Malmö** 86.0 km
Continue to follow E20
Partial toll road
Entering Denmark
14. Continue onto **E20** 53.7 km
Partial toll road

14' Continue onto **E30** 23.3 km

Web Storage



FLOPPY DISK

Tha Gangsta way of storing dem filez

FAIL Fun .com

FAIL FUN .COM

Tha gangsta way of storing dem files

FLOPPY DISK





You SUCK!!

you SUCK!!

```
sessionStorage.setItem("FU", "Sarah Palin");  
console.log(sessionStorage.getItem("FU"));
```

```
localStorage.setItem("Job", "Politician");
```

```
var sarahPalin = {  
  "contest" : "Miss Alaska pageant",  
  "Talent" : "Flute playing"  
};  
  
localStorage.setItem("sarah", JSON.stringify(sarahPalin));  
console.log(typeof JSON.parse(localStorage.getItem("sarah")));
```

Web SQL

IndexedDB

Web Workers

THIS MODERN LIFE:

WORK



HOME



PLAY



SLEEP



WELLINGTONGREY.NET
WELLINGTONGREY.NET

```
var worker = new Worker("worker.js");
```

```
// Main page code
var worker = new Worker("worker.js");

// postMessage
worker.postMessage(5);

// Receive message back from Worker
worker.onmessage = function (evt) {
    document.getElementById("worker-results").innerHTML
= evt.data;
};

// Error handling
worker.onerror = function (evt) {
    document.getElementById("worker-results").innerHTML
= "An error occurred";
};
```

```
// Web Worker code
onmessage = function (evt) {
    for (var i=evt.data, il=1000001; i<il; i++) {
        postMessage(i);
    };
};
```

Offline Web Applications



```
if (window.addEventListener) {  
    /*  
        Works well in Firefox and Opera with the  
        Work Offline option in the File menu.  
        Pulling the ethernet cable doesn't seem to trigger it  
    */  
    window.addEventListener("online", isOnline, false);  
    window.addEventListener("offline", isOffline, false);  
}  
else {  
    /*  
        Works in IE with the Work Offline option in the  
        File menu and pulling the ethernet cable  
    */  
    document.body.ononline = isOnline;  
    document.body.onoffline = isOffline;  
}
```

```
// Poll the navigator.onLine property
setInterval(function () {
    console.log(navigator.onLine);
}, 1000);
```

```
<!DOCTYPE html>  
<html manifest="offline.manifest">  
<head>  
...
```

CACHE MANIFEST

VERSION 10

CACHE:

offline.html

base.css

FALLBACK:

online.css offline.css

NETWORK:

/live-updates

Drag and Drop



*...I am forced to conclude that the HTML5 drag and drop module is not just a disaster, it's a **fucking** disaster.*

-Peter-Paul Koch

```
<div id="can-be-dragged" draggable></div>
```

```
<p id="drop-area">
```

Drag and drop files here

```
</p>
```

```
var someImg = document.getElementById("some-image"),
    dropArea = document.getElementById("drop-area");

someImg.ondragstart = function (evt) {
    var event = evt || window.event;
    event.dataTransfer.setData("Text", this.getAttribute("alt"));
    return false;
};

dropArea.ondragenter = function (evt) {
    return false;
};

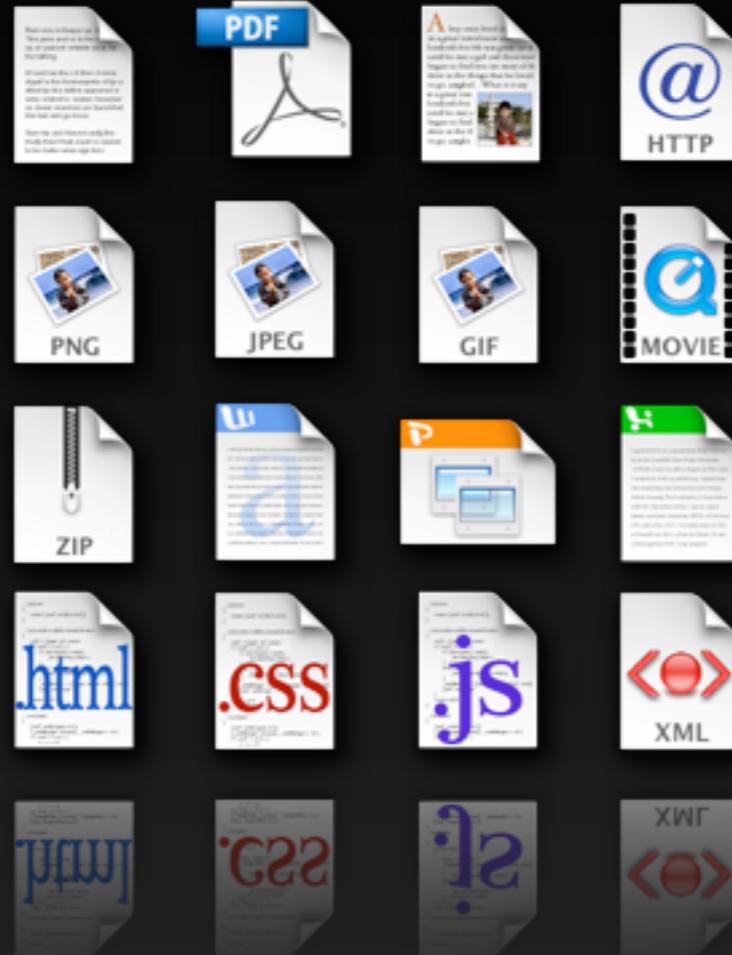
dropArea.ondragover = function (evt) {
    return false;
};

dropArea.ondrop = function (evt) {
    var text = event.dataTransfer.getData("Text");
    event.cancelBubble = true; // For IE
    return false;
};
```

“If the drop is to be accepted, then this event (dragover) has to be canceled.”

```
someImg.ondragstart = function (evt) {  
    var event = evt || window.event;  
    event.dataTransfer.setDragImage(dragIcon, -10, -10);  
    return false;  
};
```

File API



```
<!--
```

```
    The multiple attribute allows for  
    uploading of multiple files
```

```
-->
```

```
<input id="files-upload" type="file" multiple>
```

```
var filesUpload = document.getElementById("files-upload");
filesUpload.onchange = function () {
    // Access to data about all files
    var files = this.files;
    for (var i=0, il=files.length; i<il; i++) {
        file.name; // Get the name of the file
        file.size; // Get the size of the file, in bytes
        file.type; // Get the type of the file
    };
};
```

Uploaded files

Name: berlin.jpg
Size: 8631 bytes
Type: image/jpeg

Name: cv.rtf
Size: 1309 bytes
Type: text/rtf

Name: Screen Recording.mov
Size: 3108303 bytes
Type: video/quicktime

Type: video/quicktime
Size: 3108303 bytes

```
for (var i=0, il=files.length, file, img; i<il; i++) {  
    file = files[i];  
  
    if (typeof FileReader !== "undefined") {  
        img = document.createElement("img");  
        reader = new FileReader();  
        reader.onload = (function (theImg) {  
            return function (evt) {  
                theImg.src = evt.target.result;  
            };  
        })(img);  
        reader.readAsDataURL(file);  
    }  
}
```

```
// For Firefox, Google Chrome and Safari
var xhr = new XMLHttpRequest();
xhr.open("post", "upload/upload.php", true);
xhr.onreadystatechange = function() {
    if (this.readyState === 4) {
        // File uploaded
    }
};
```

```
// Upload file: Firefox, Google Chrome and Safari
xhr.setRequestHeader("Content-Type", "multipart/form-data");
xhr.setRequestHeader("X-File-Name", file.fileName);
xhr.setRequestHeader("X-File-Size", file.fileSize);
xhr.setRequestHeader("X-File-Type", file.type);

xhr.send(file);
```

About Plupload

The developers of [TinyMCE](#) brings you Plupload, a highly usable upload handler for your Content Management Systems or similar. Plupload is currently separated into a [Core API](#) and a [jQuery upload queue widget](#) this enables you to either use it out of the box or write your own [custom implementation](#).

Features

This table shows the availability of the different features in each available runtime.

Feature	Flash	Gears	HTML 5	Silverlight	BrowserPlus	HTML 4
Chunking	✓	✓	✗	✓	✓	✗
Drag/Drop	✗	✓	✓ ¹	✗	✓	✗
PNG Resize	✓	✓	✓ ²	✓	✓	✗
JPEG Resize	✓	✓	✓ ²	✓	✓	✗
Type filtering	✓	✓	✗ ³	✓	✓	✗
Stream upload	✓	✓	✓	✓	✗	✗
Multipart upload	✓	✓	✓ ⁴	✓	✓	✓
File size restriction	✓	✓	✓	✓	✓	✗
Upload progress	✓	✓	✓	✓	✓	✗

Upload progress



File size restriction



Multipart upload



Web Sockets





```
var ws = new WebSocket("ws://robertnyman.com/wsmagic");  
  
// Send data  
ws.send("Some data");  
  
// Close the connection  
ws.close();
```

```
var ws = new WebSocket("ws://robertnyman.com/wsmagic");

// When connection is opened
ws.onopen = function () {
    console.log("Connection opened!");
};

// When you receive a message
ws.onmessage = function (evt) {
    console.log(evt.data);
};

// When you close the connection
ws.onclose = function () {
    console.log("Connection closed");
};

// When an error occurred
ws.onerror = function () {
    console.log("An error occurred");
};
```

web-socket-js

Socket.IO

OOMP A LOOMP A DOOMPITY DOO



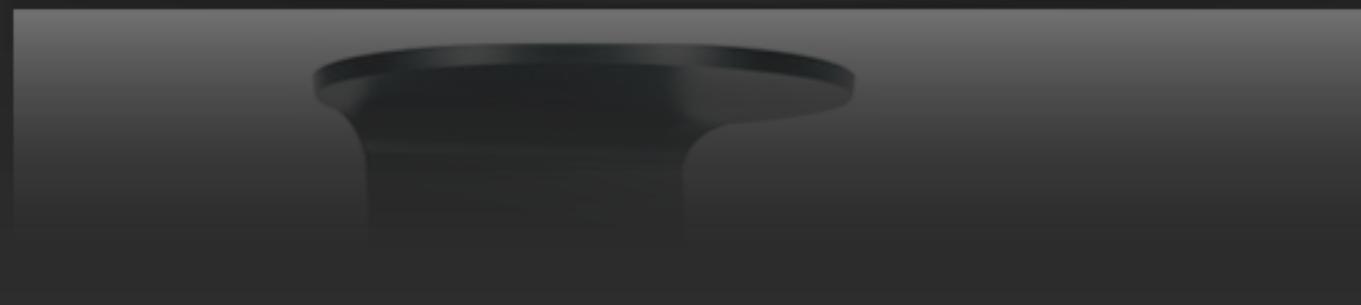
WE WOULDN'T HIT THAT
AND NEITHER SHOULD YOU

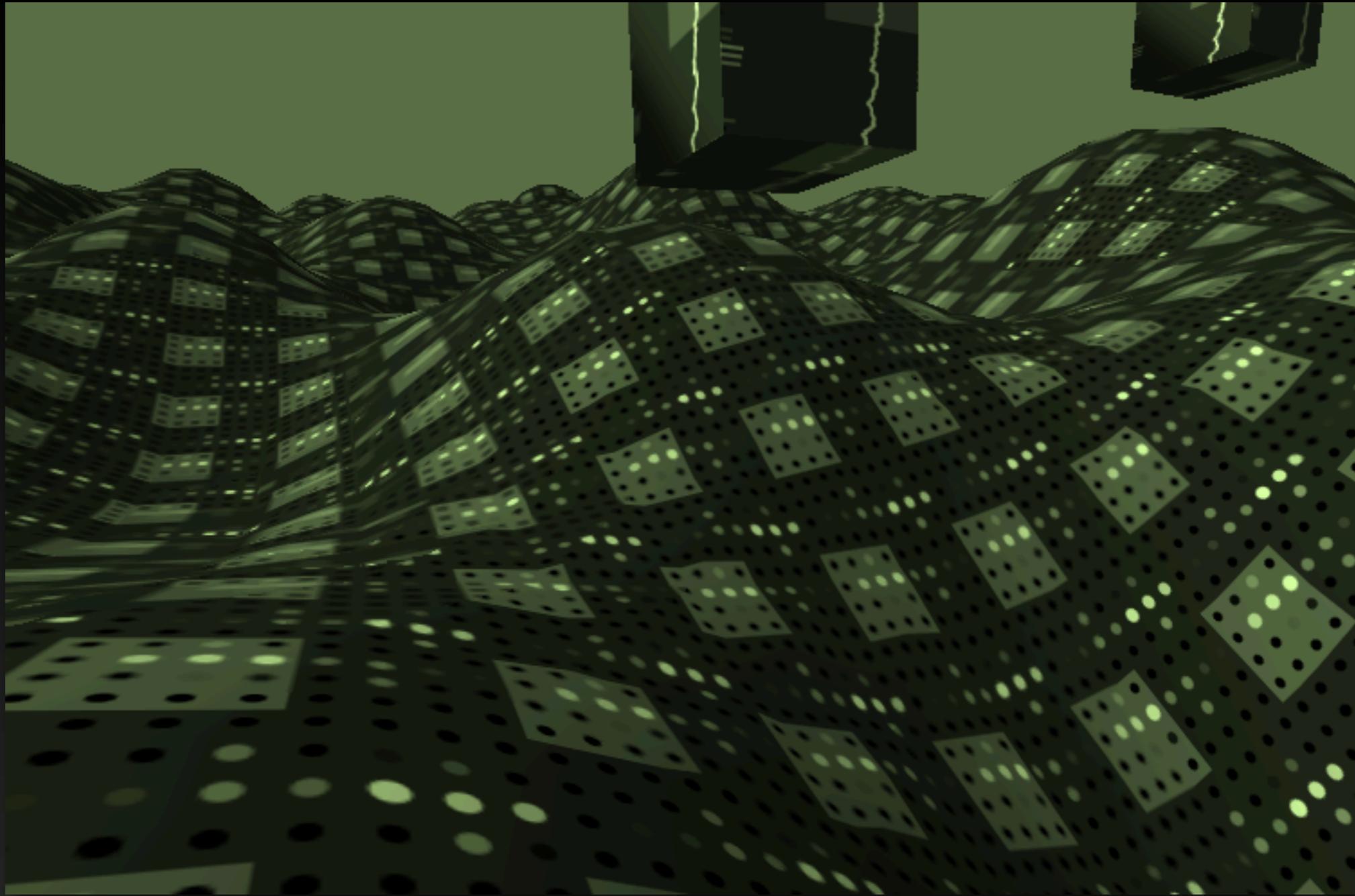
 FUGLY.COM

 EPICCOW

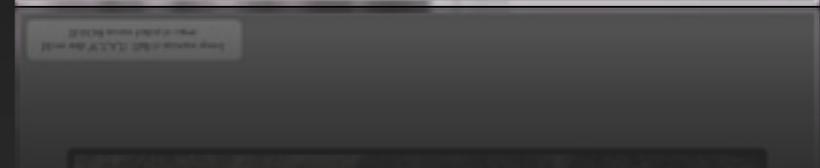
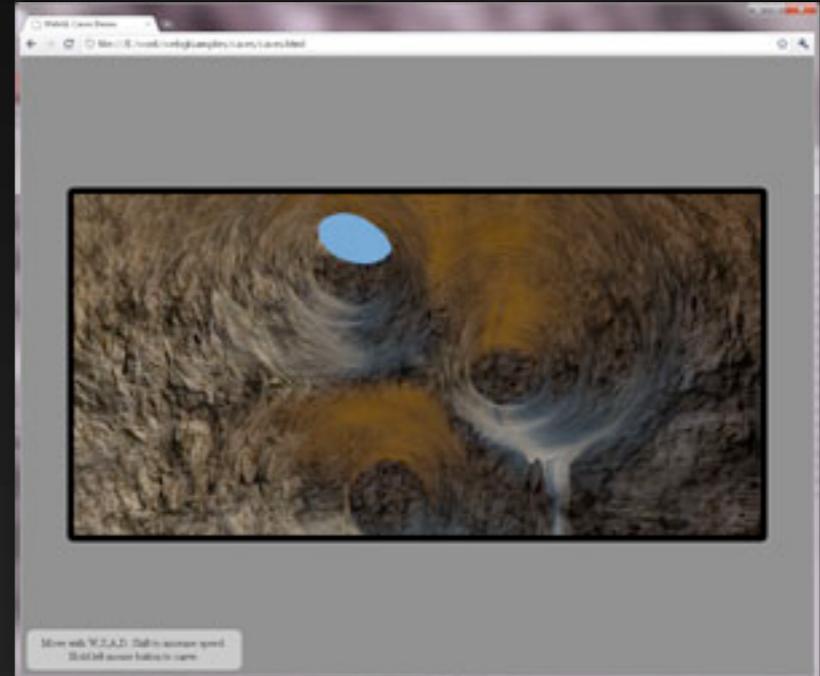
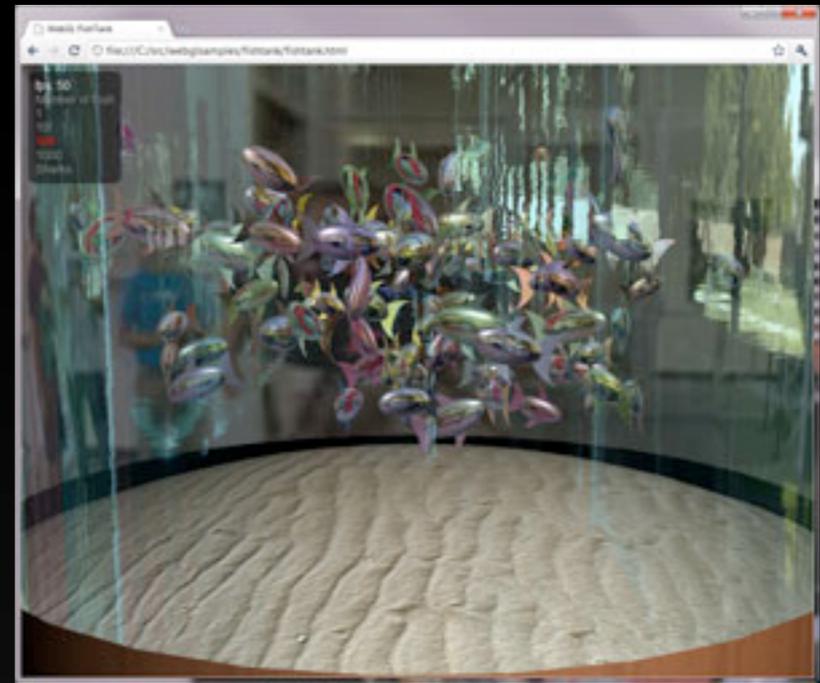
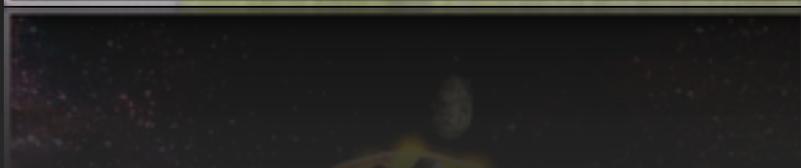
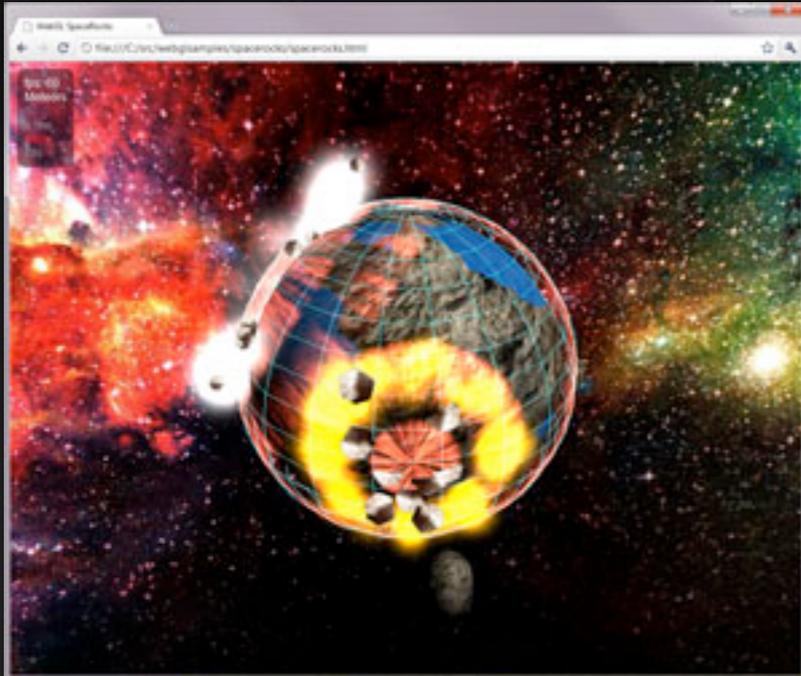
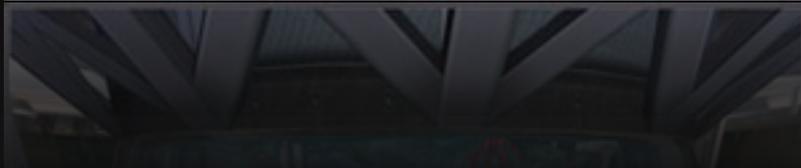
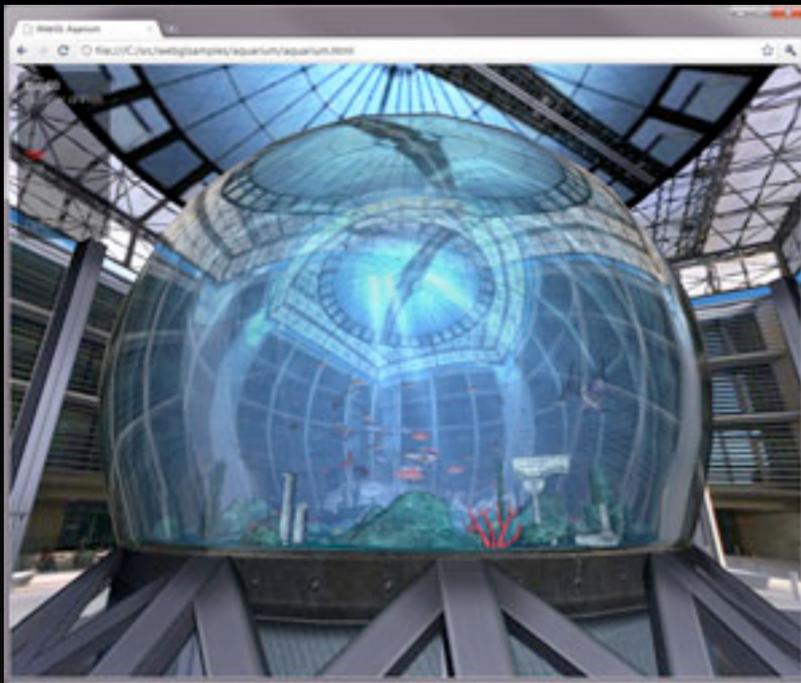
AND NEITHER SHOULD YOU
WE WOULDN'T HIT THAT

WebGL

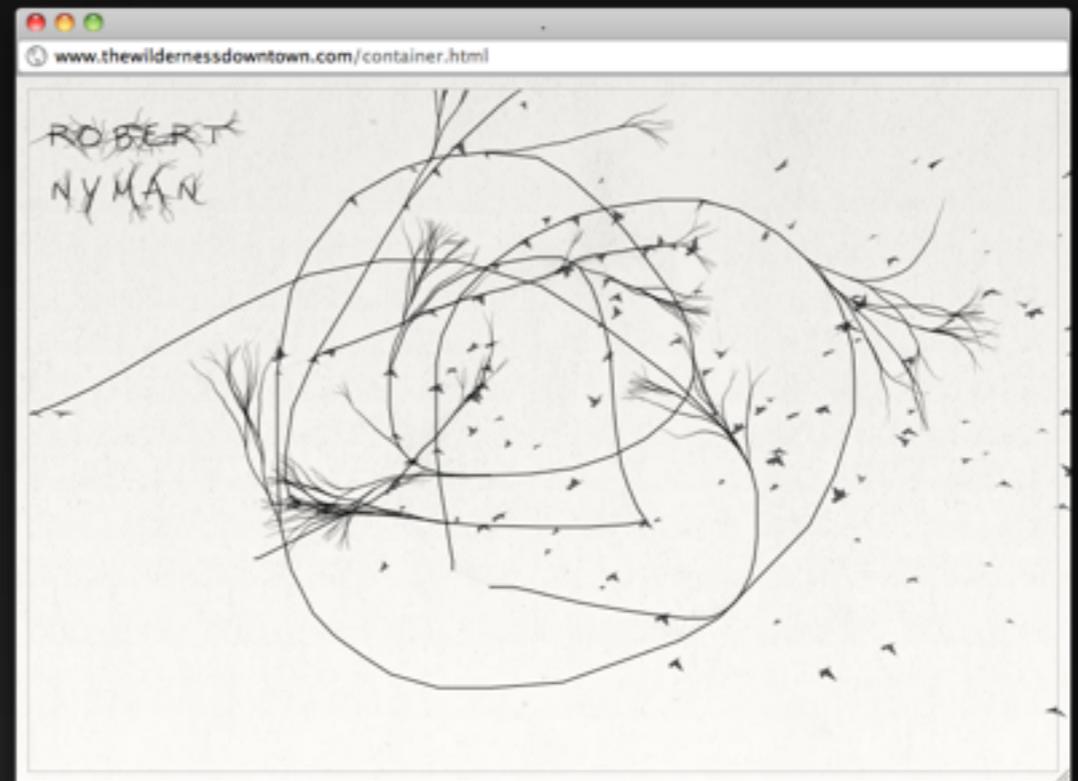
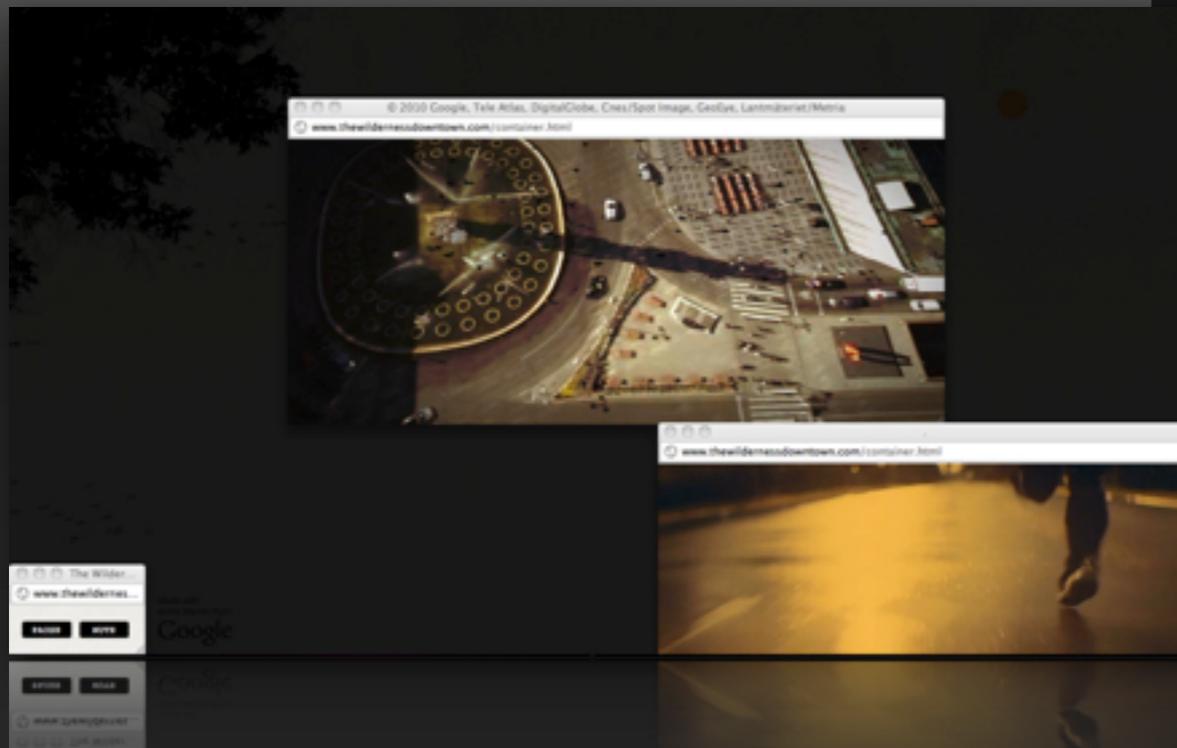
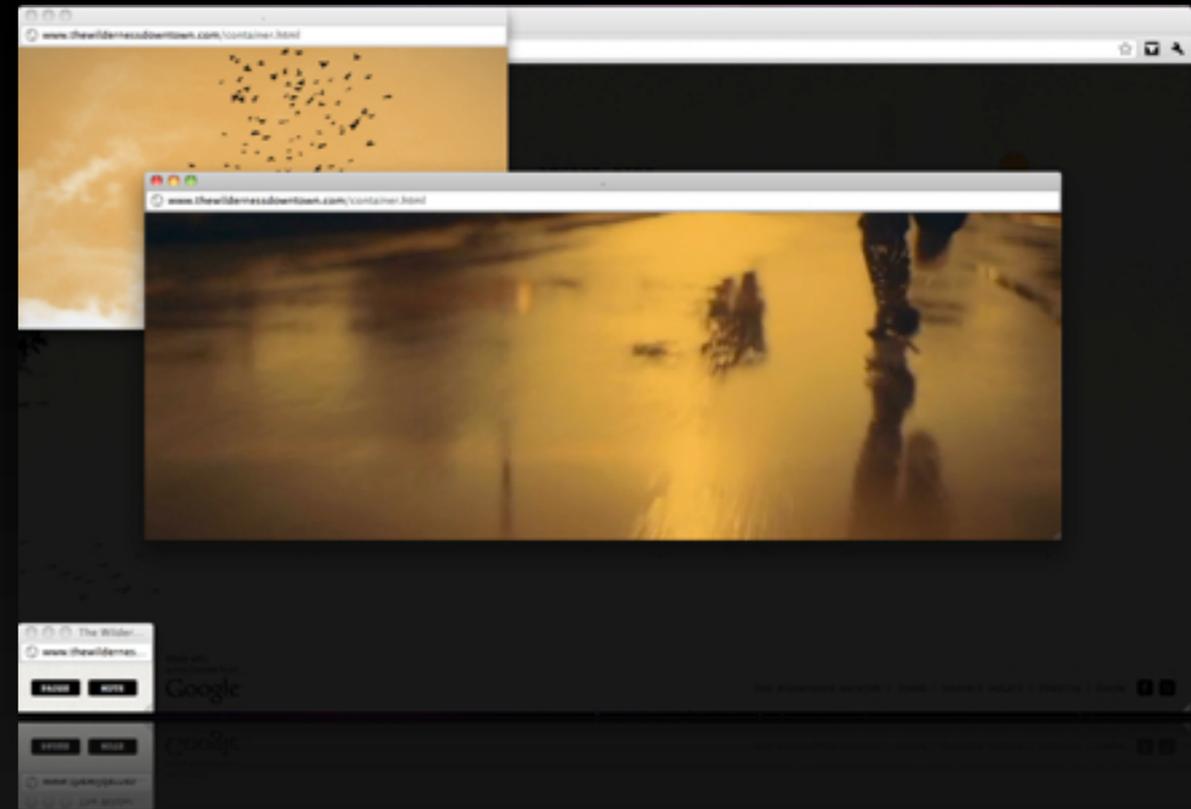
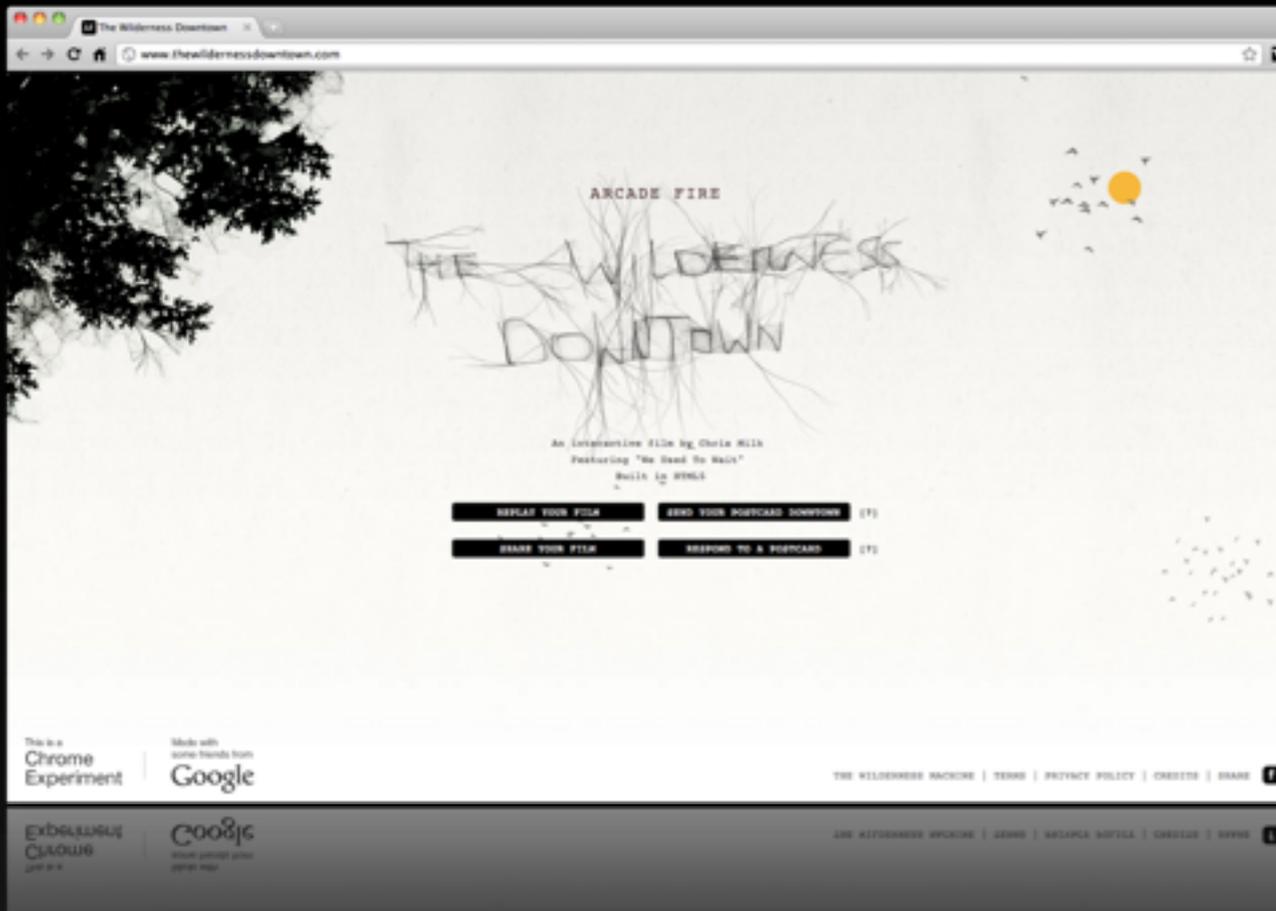




<http://audioscene.org/scene-files/humph/slideshow/>



<http://code.google.com/p/webglsamples/>



<http://www.thewildernessdowntown.com/>

Flight of the Navigator





Web browser support



HTML5 ROCKS MY SOCKS OFF

HTML5 ROCKS MY SOCKS OFF



MY FAVORITE THING
IS TO GO WHERE
I'VE NEVER BEEN

-DIANE ARBUS

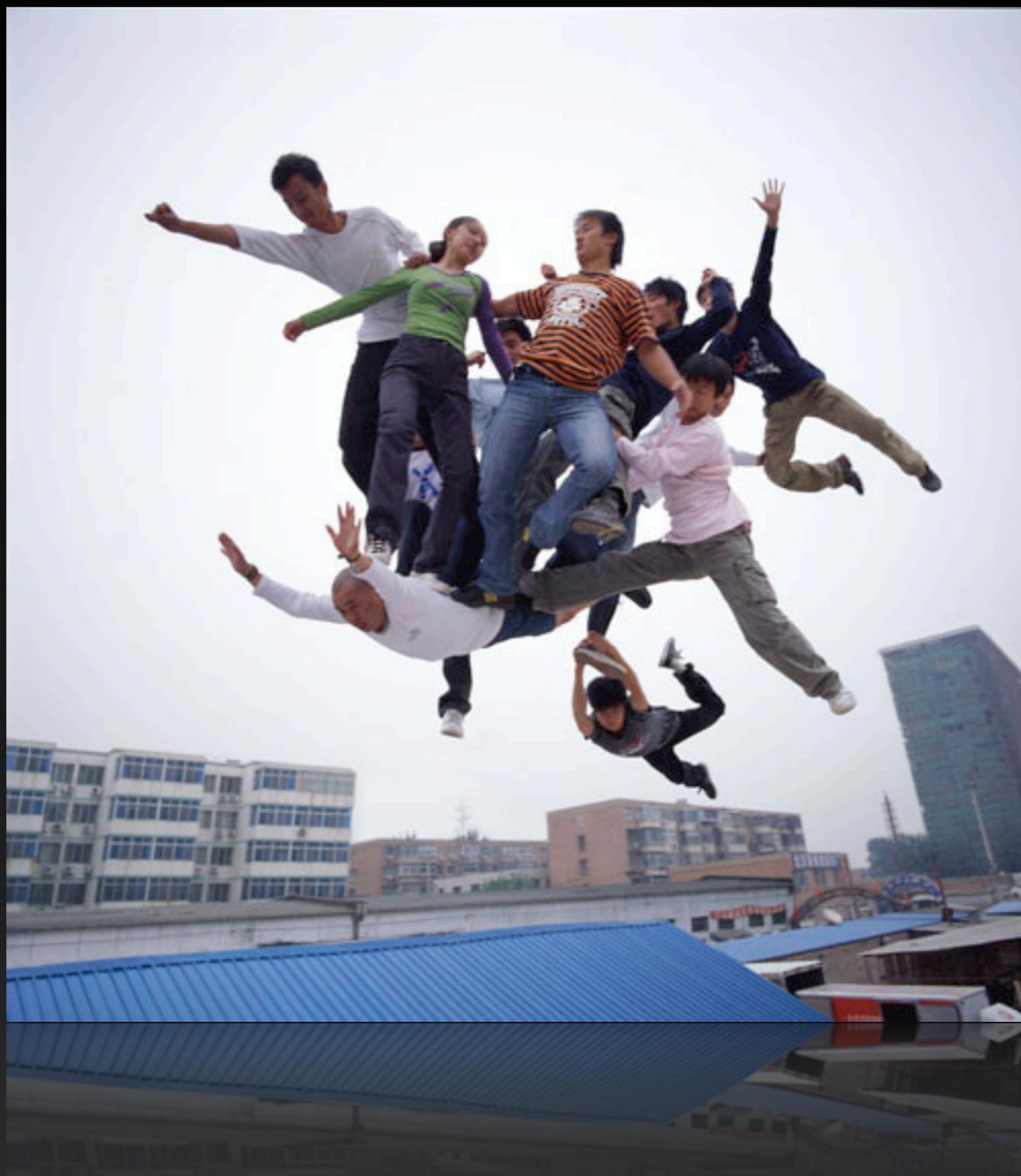
-DIANE ARBUS



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Robert Nymman

<http://robertnymman.com/speaking/>
<http://robertnymman.com/html5/>

Twitter: [@robertnymman](#)

Pictures:

Robocop: <http://www.meh.ro/2010/04/01/murphy-as-robocop/>
George W Bush fail 1: <http://freetraveler.net/pictures/2.09.06/fun/1.jpg>
George W Bush fail 2: <http://blogs.warwick.ac.uk/images/akyrtozoglou/2005/06/07/g2.jpg>
George W Bush fail 3: <http://blogs.warwick.ac.uk/images/akyrtozoglou/2005/06/07/gb3.jpg>

Dolph: <http://www.bestweekever.tv/2010-02-08/dolph-lundgren-becomes-the-david-hasselhoff-of-swedish-television/>
Canvas: <http://www.ioffer.com/c/Drawings-1000407>
Oriental studies: <http://www.swollenpickles.com/2007/01/29/phallic-logo-awards/>
SVG: <http://shauser.umwblogs.org/2007/08/28/learning-a-little-svg-from-pgmj/>
Today: <http://www.nickcannon.com/2009/09/21/mariah-set-to-perform-on-the-today-show-oct-2/>
Tomorrow: <http://www.hulu.com/tales-of-tomorrow>
Day after tomorrow: http://www.impawards.com/2004/day_after_tomorrow_ver3.html
Fight club: <http://www.unique-screenwriting.com/rules-of-fight-club.html>

Geolocation: <http://www.datadial.net/blog/index.php/2008/09/22/the-definitive-guide-to-website-geo-location/>
Storage fail: <http://failfun.com/funny-pictures/gangsta-fail/>
Cookie monster: <http://honestviewsfromhonestman.blogspot.com/2009/09/cookie-monster.html>
You suck: <http://www.crunchgear.com/2009/04/22/gadgets-sucks/>

Web Workers: <http://miscellanea.wellingtongrey.net/2007/06/03/this-modern-life/>
Internet hole: <http://cheezburger.com/View/3194058752>
Files: <http://www.hannonhill.com/products/index.html>
Drag me: <http://mcus.nu/?cat=25>
History: <http://animatedtv.about.com/od/fgmultimedia/ig/-Family-Guy--Pictures/Griffin-Family-History.htm>
Sockets: <http://www.gigaweb.com/products/view/31681/plug-socket-adult-costume.html>
AJAX: <http://www.aqlanza.com/technologies01.html>
Comet: <http://www.blogiversity.org/blogs/cstanton/archive/2009/12/16/revealing-hidden-comet-strikes.aspx>
Flash: <http://www.zerofractal.com/assets/error-flash.jpg>
Oompa Loompa: <http://www.fugly.com/pictures/19609/oompa-loompa-hit-that-forizzle.html>
3D apple: <http://3dst.de/typo3temp/pics/974e4144fc.jpg>
Elsewhere: <http://www.allisonweiner.com/index.php?/posters/elsewhere/>

Web browsers: <http://www.zamaanonline.com/category/funny-amazing-stuff/geek-fun>
Rocks my socks off: <http://www.threestyles.com/tutorials/html5-rocks-my-socks-off/>
Web browser icons: <http://paulirish.com/2010/high-res-browser-icons/>
Go where I've never been: <http://musicisart.ws/diane-arbus/>
Head in ground: <http://56minus1.com/2009/02/things-well-done-li-wei/>
Basketball player: <http://www.hemmy.net/2008/03/22/the-fail-collection/>
Anything is possible: http://www.elektrodop.com/2009/12/straight-out-of-china/?quick_view=1
Girl taped on wall: <http://www.mymodernmet.com/profiles/blogs/a-father-who-creatively>

*We can't change history, but we can change the future.
Be nice to each other.*