WebGL의 무궁무진한 가능성

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- Now
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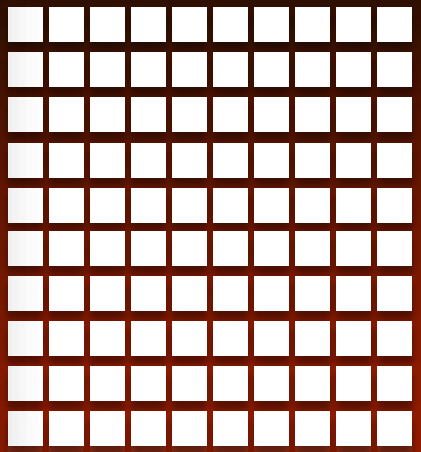
- Where

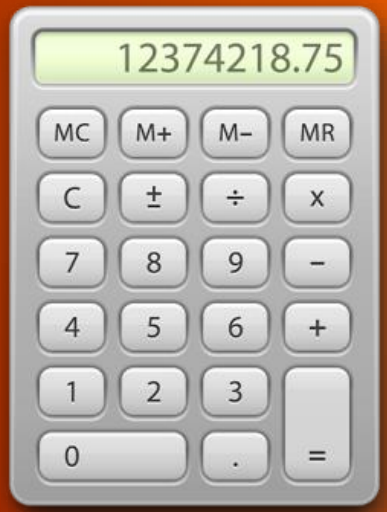
What?

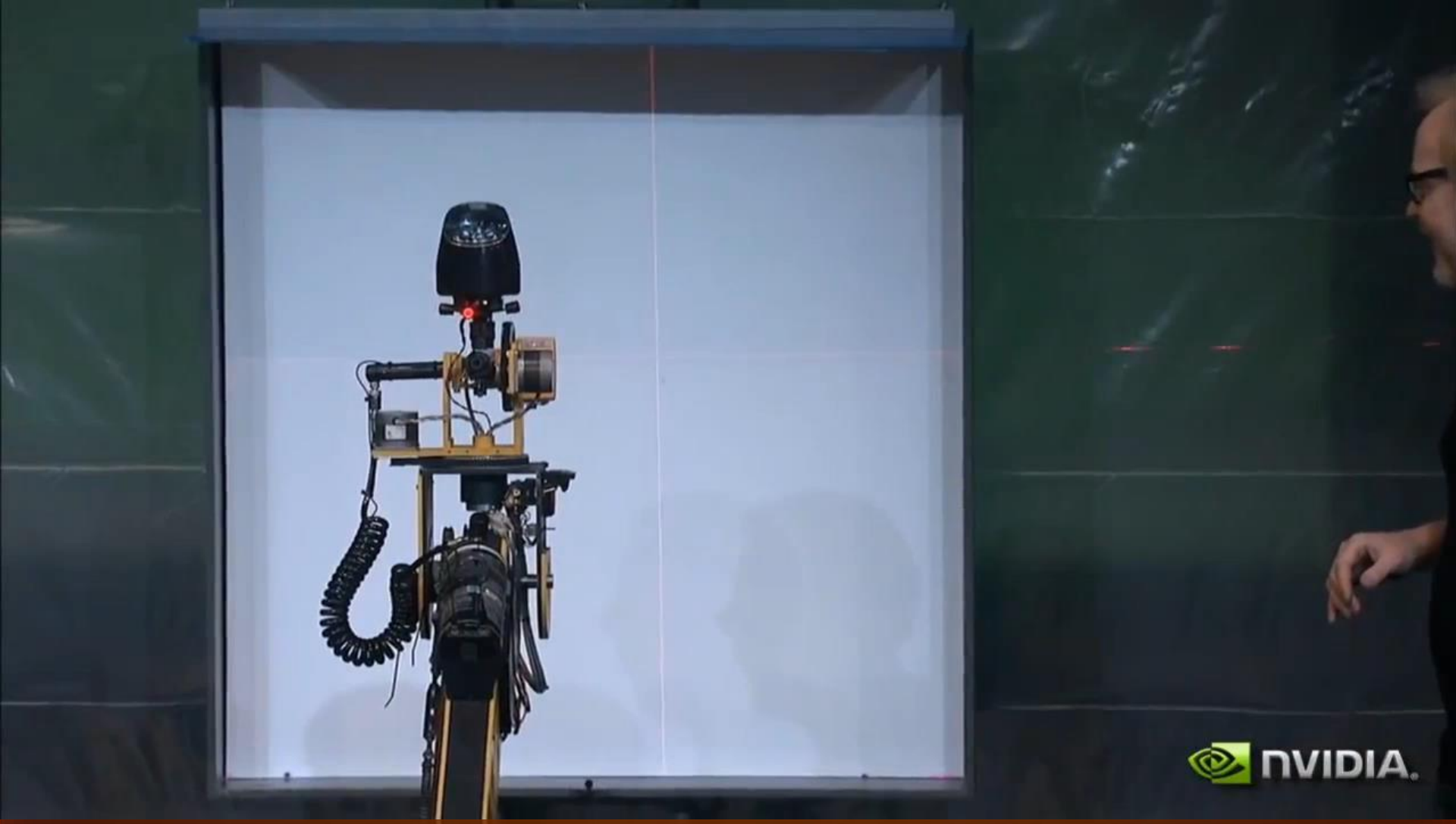
초고속 그래픽 렌더링!

웹기반 GPU제어



```
While(i--){
    // 픽셀처리
}
```





CPU

GPU

DOM

SVG

CANVAS 2D

WEBGL

GPU렌더링을 통한

렌더 부하 분산

Application Performance

51
$ 4
2m
Escort Dr. Adamos to the chopper
DUAL GLOCK
11 80
10
10
5
WebGL
Dead Trigger 2

SCORE: 0
100lbs

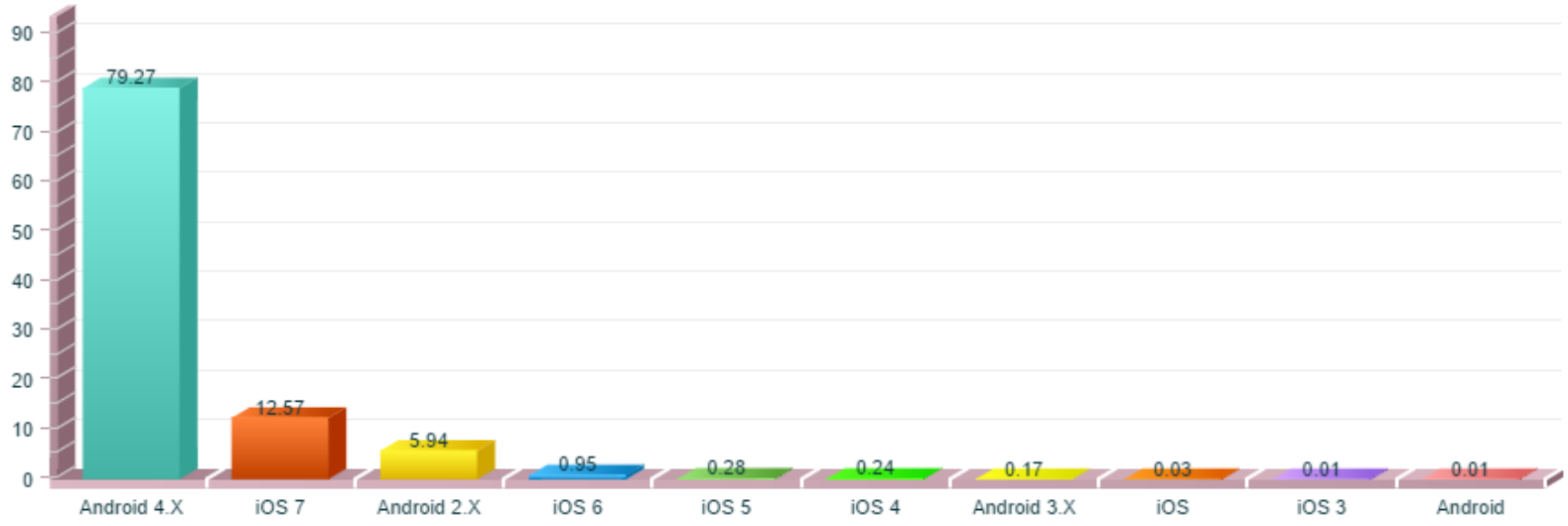
assets/obj/artwall2.obj
assets/map/artwall2.jpg
186/188
triangle : 442258 / num Object : 93
거실
주방
안방
침실1
침실2
공용욕실
부부욕실
ISO
SKT
67%
03:41
webseon.nacan.net/deview/deview/0
Recorded by Mobizen

Now

Safari (Mac)

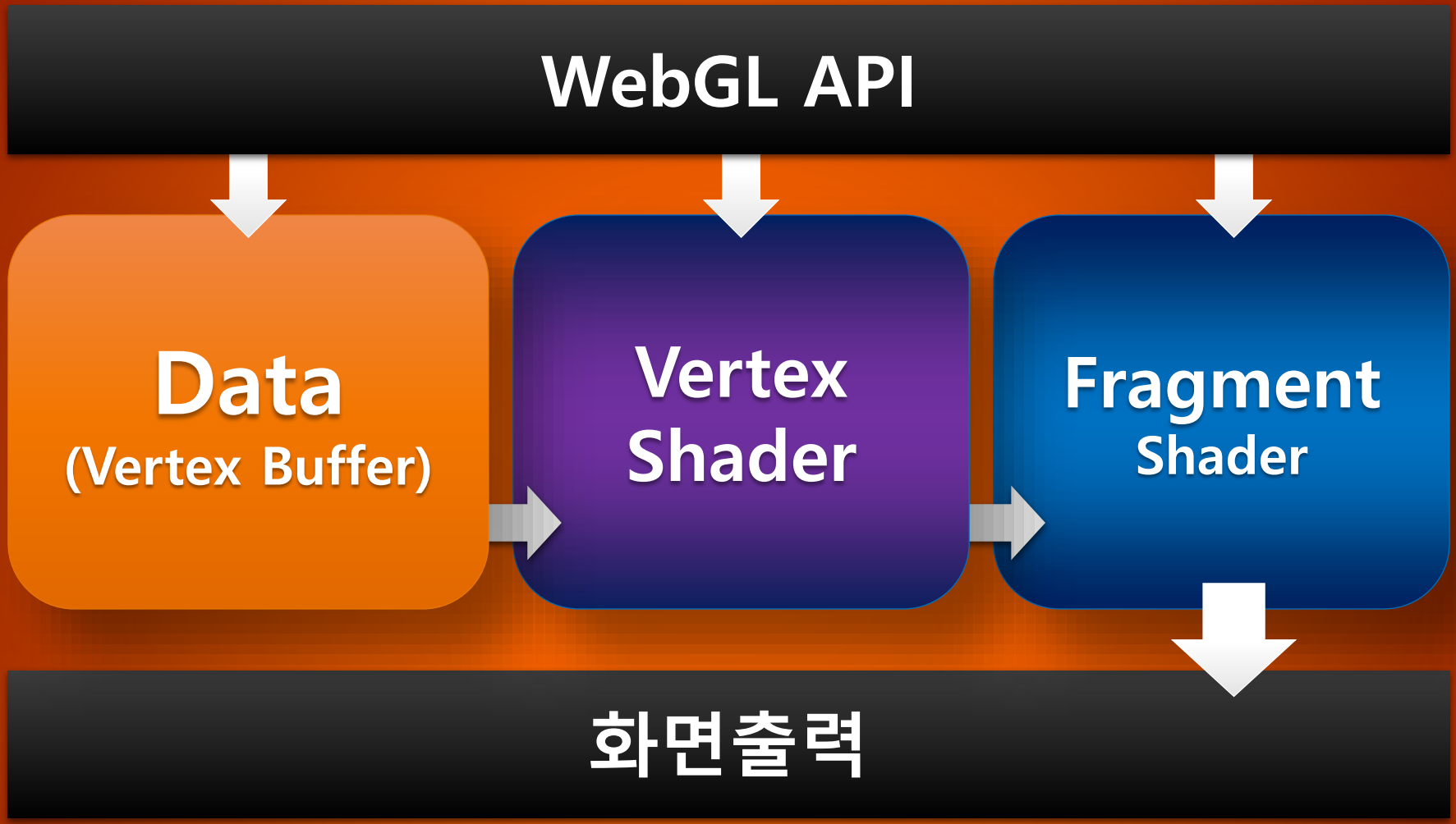
IE11

85.9% + iOS



http://www.koreahtml5.kr/jsp/infoSquare/browserUseStatsKor.jsp?type_code_LIST=USST0002&os_code=all&search_type=D&search_date=201406

How

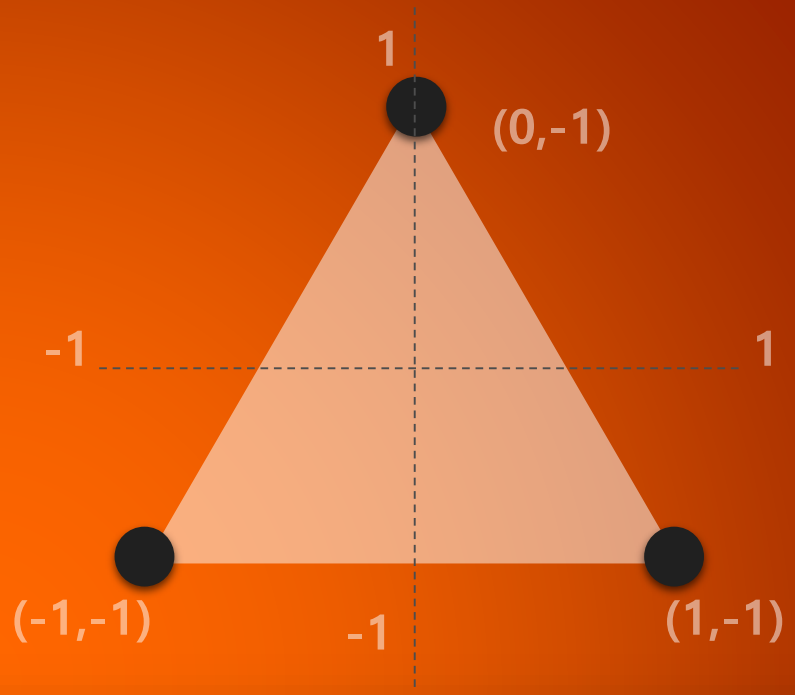

WebGL API
Data
(Vertex Buffer)
Vertex
Shader
Fragment
Shader
화면출력

WebGL 초기화

```
var gl = canvas.getContext("webgl")
```

"webgl", "experimental-webgl",
"webkit-3d", "moz-webgl"

```
var vertices = [
    0.0, 1.0, 0.0, //x,y,z
    1.0, -1.0, 0.0,
   -1.0, -1.0, 0.0
];
```




```
var buffer= gl.createBuffer();
gl.bindBuffer(gl.ARRAY_BUFFER, buffer);
gl.bufferData(gl.ARRAY_BUFFER, new Float32Array(vertices));
```

Data → Vertex Shader → Fragment Shader

Attribute : aVertexPosition -> Vertex Shader

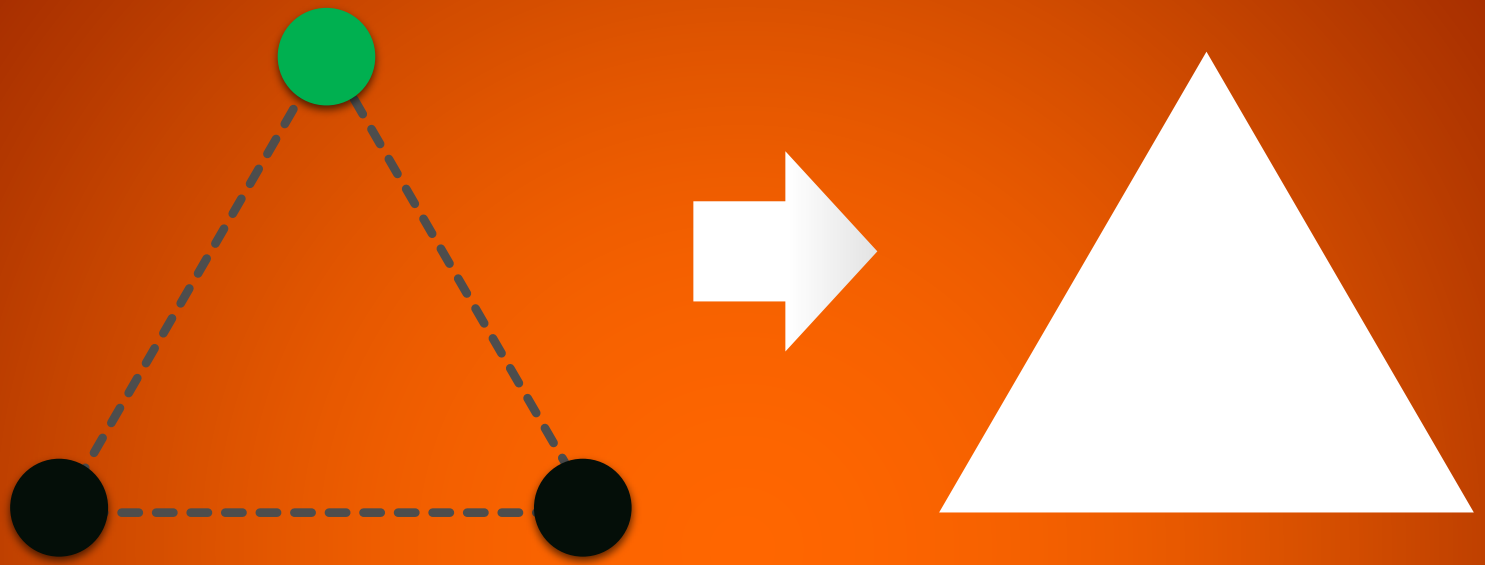
aVertexPosition
(0,1,0)

aVertexPosition
(1,-1,0)

aVertexPosition
(-1,-1,0)

```
attribute vec3 aVertexPosition;
void main(void) {
  gl_Position = vec4(aVertexPosition, 1.0);
}
```

Data → Vertex Shader → Fragment Shader



```
void main(void) {
  gl_FragColor = vec4(1.0, 1.0, 1.0, 1.0);
}
```

Data → Vertex Shader → Fragment Shader

Shader 생성

```
shader = gl.createShader(Type);
gl.shaderSource(shader, Shader Str);
gl.compileShader(shader);
```

gl.VERTEX_SHADER

gl.FRAGMENT_SHADER

```
attribute vec3 aVertexPosition;
void main(void) {
    gl_Position = vec4(aVertexPosition, 1.0);
}
```

추가 자료 - 학습사이트

Beginning WebGL

http://www.beginningwebgl.com

Chapter 1 Examples

Chapter:

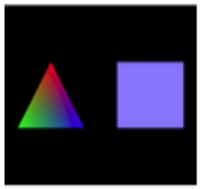
01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | Bonus

Chapter	Demo
01	Colored Triangles
01	2D Movement
01	3D Movement
01	Triangular Prism
01	Triangular Prism with depth test

Learning WebGL

http://learningwebgl.com/blog/?page_id=1217

Lesson 1: A Triangle and a Square gives you an overview of how WebGL works, with enough code to simply draw a static triangle and a square on the screen.



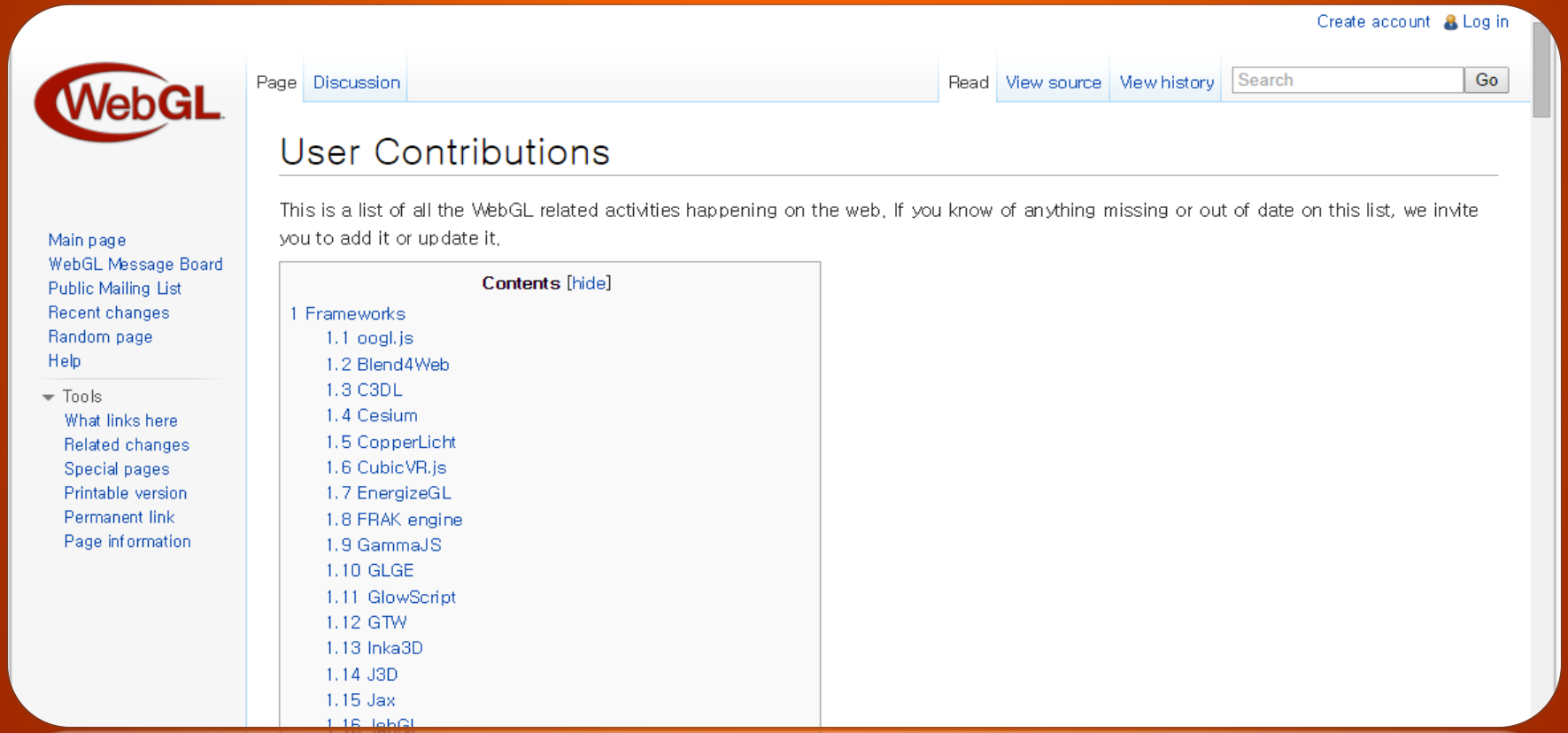
Lesson 2: Adding Colour builds on lesson 1, and adds colour to the triangle and the square.

Lesson 3: A Bit of Movement builds on lesson 2, making the triangle and the square spin around.

추가 자료 – Framework List

Khronos

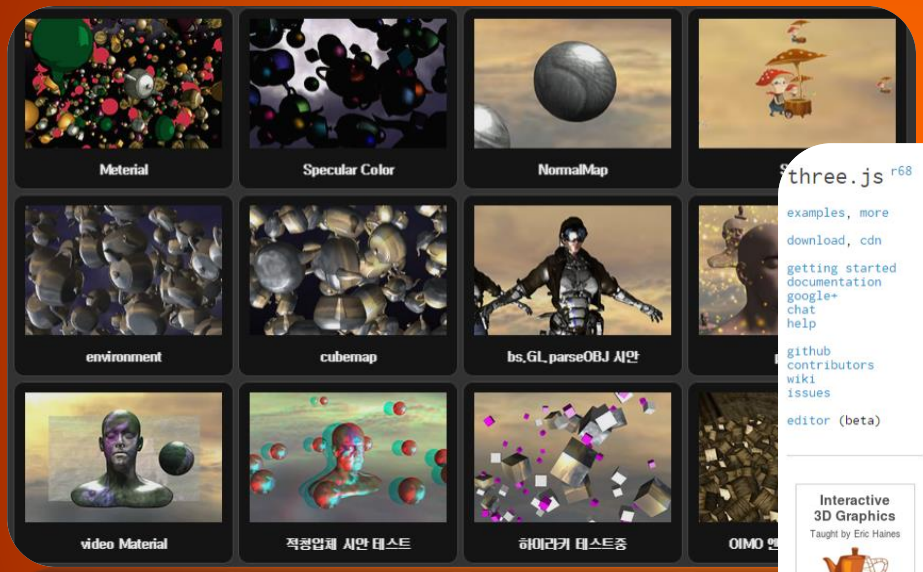
http://www.khronos.org/webgl/wiki/User_Contributions



추가 자료 – Framework List

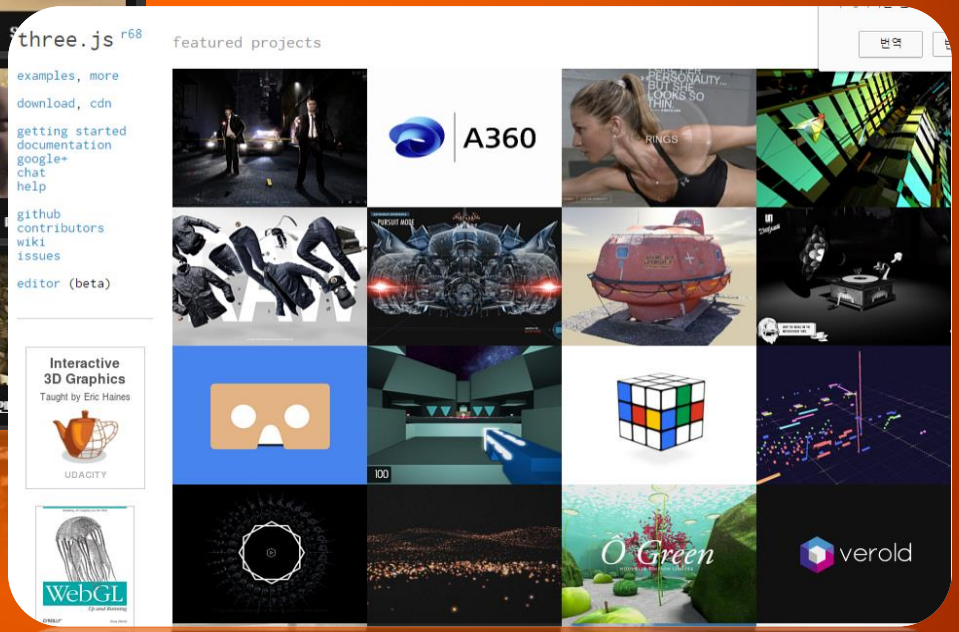
bsWebGL

http://projectbs.github.io/bsWebGL/



ThreeJS

http://threejs.org/



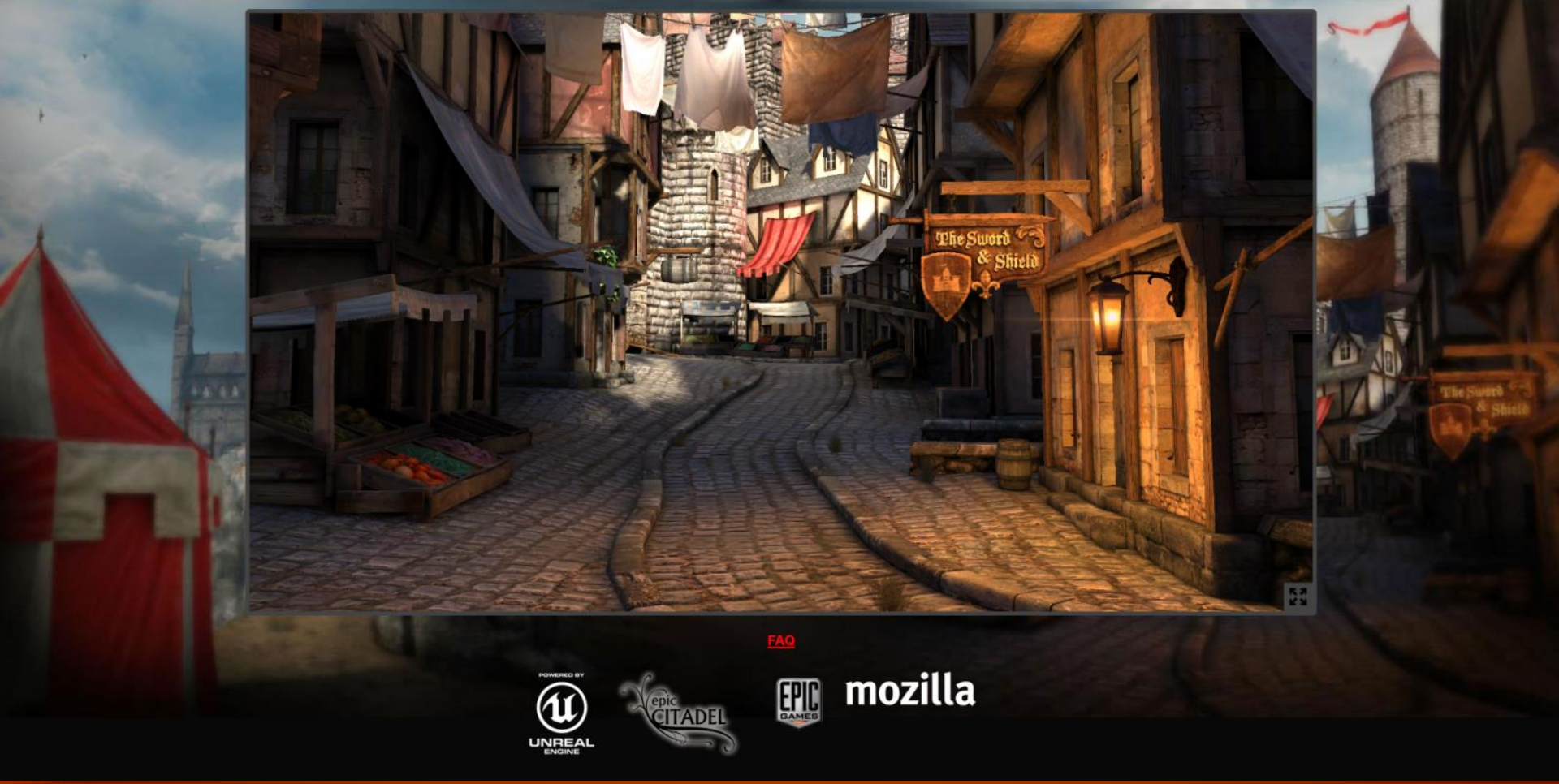
unity

Fl

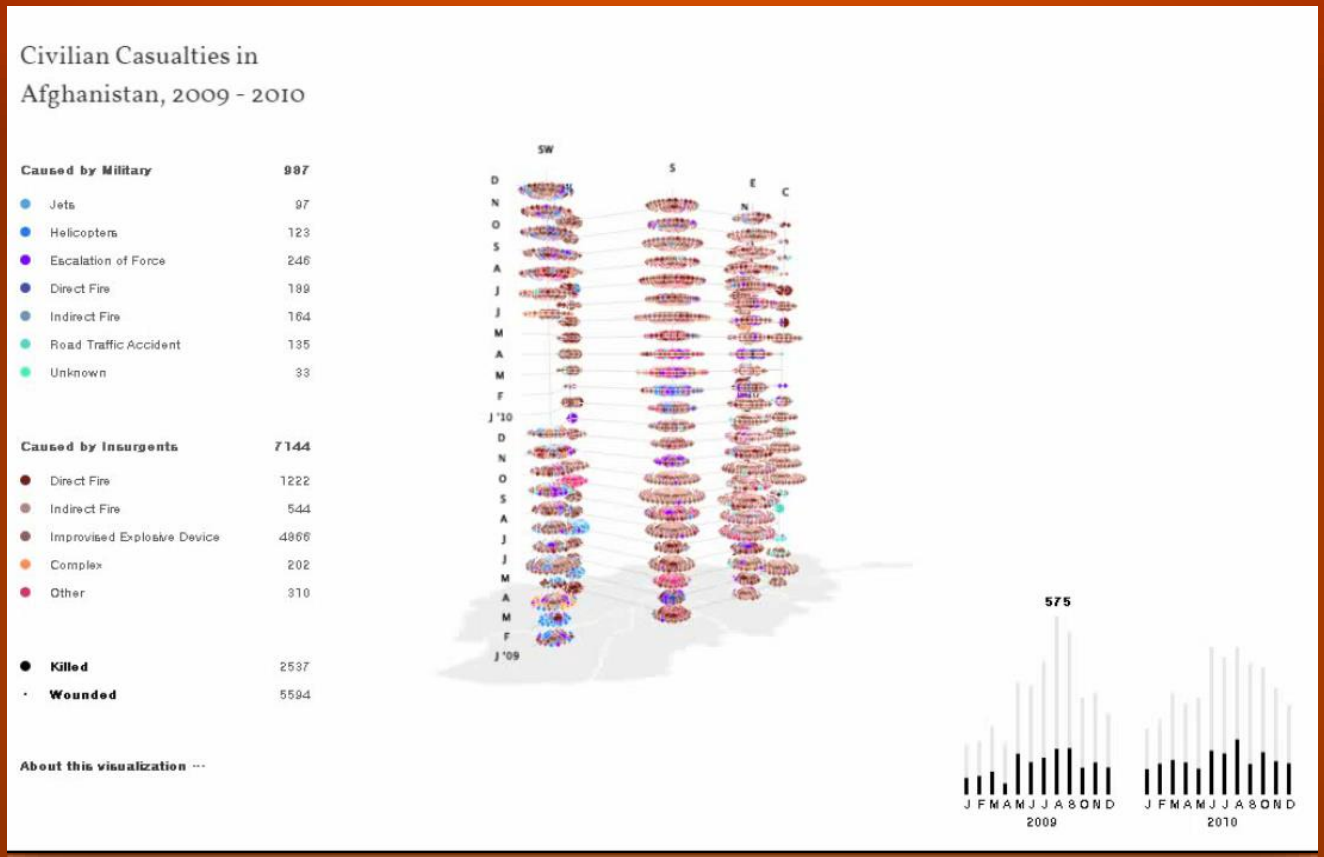
BsWebGL
PROJECTBS

DPM_living_11_diningtable
Autodesk 3ds Max
Autodesk 3ds Max 2008

Where


The Sword & Shield
FAQ
POWERED BY
UNREAL ENGINE
epic CITADEL
EPIC GAMES
mozilla

Game


Civilian Casualties in
Afghanistan, 2009 - 2010
Caused by Military 987
Jets 97
Helicopters 123
Escalation of Force 246
Direct Fire 189
Indirect Fire 164
Road Traffic Accident 135
Unknown 33
Caused by Insurgents 7144
Direct Fire 1222
Indirect Fire 544
Improvised Explosive Device 4866
Complex 202
Other 310
Killed 2537
Wounded 5594
About this visualization ···
SW
S
E
C
575
J F M A M J J A S O N D
2009
J F M A M J J A S O N D
2010

BIG DATA 시각화

UI Interface

Q&A

THANK YOU