



# VIRTUAL/AUGMENTED REALITY FOR WEB

Christina Kayastha  
Senior Software Engineer  
Vistaprint, Cimpres  
@christikaes

# HELLO WORLD!

My name is Christina (:

Christina Kayastha  
Senior Software Engineer  
Vistaprint, Boston, MA  
@christikaes

I'm all about:

- Icecream
- Community Events
- Bleeding Edge Technology



1

USER INTERFACE



2

EXPERIENCE DESIGN



3

VIRTUAL/AUGMENTED REALITY



4

BUILD FOR MOBILE



5

MANAGE STATE



6

AUTH & DATABASE





# VIRTUAL/AUGMENTED REALITY FOR WEB

Christina Kayastha  
Senior Software Engineer  
Vistaprint, Cimpres  
@christikaes



VR/AR

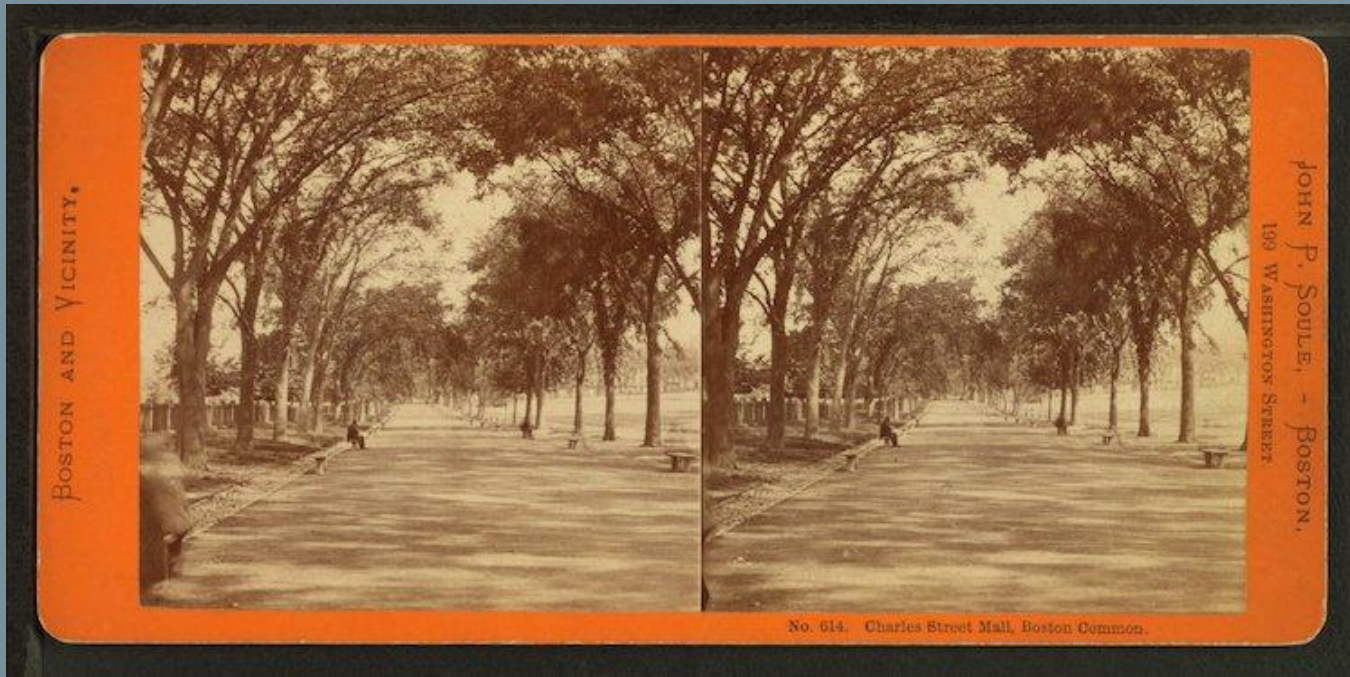
WHAT is it ?

HOW can I use it ?

WHY should I care ?



Why should I care about  
VIRTUAL/AUGMENTED  
REALITY?



When was the Stereoscopic Photo first made?

A) 1920

B) 1940

C) 1960



This device was made in 1950. What was it called?  
A) Sensorama      B) Sensebox      C) Virtual sphere





What was this device called?  
A) Telesphere Mask      B) Vision Box



When was the VPL Data Suit made?

A) 2000

B) 1990

C) 1980





# What is the VR/AR Experience of the FUTURE ?





# ALIBABA OFFERS VR SHOPPING

CNN

5:42 AM GMT

CNN NEWSROOM





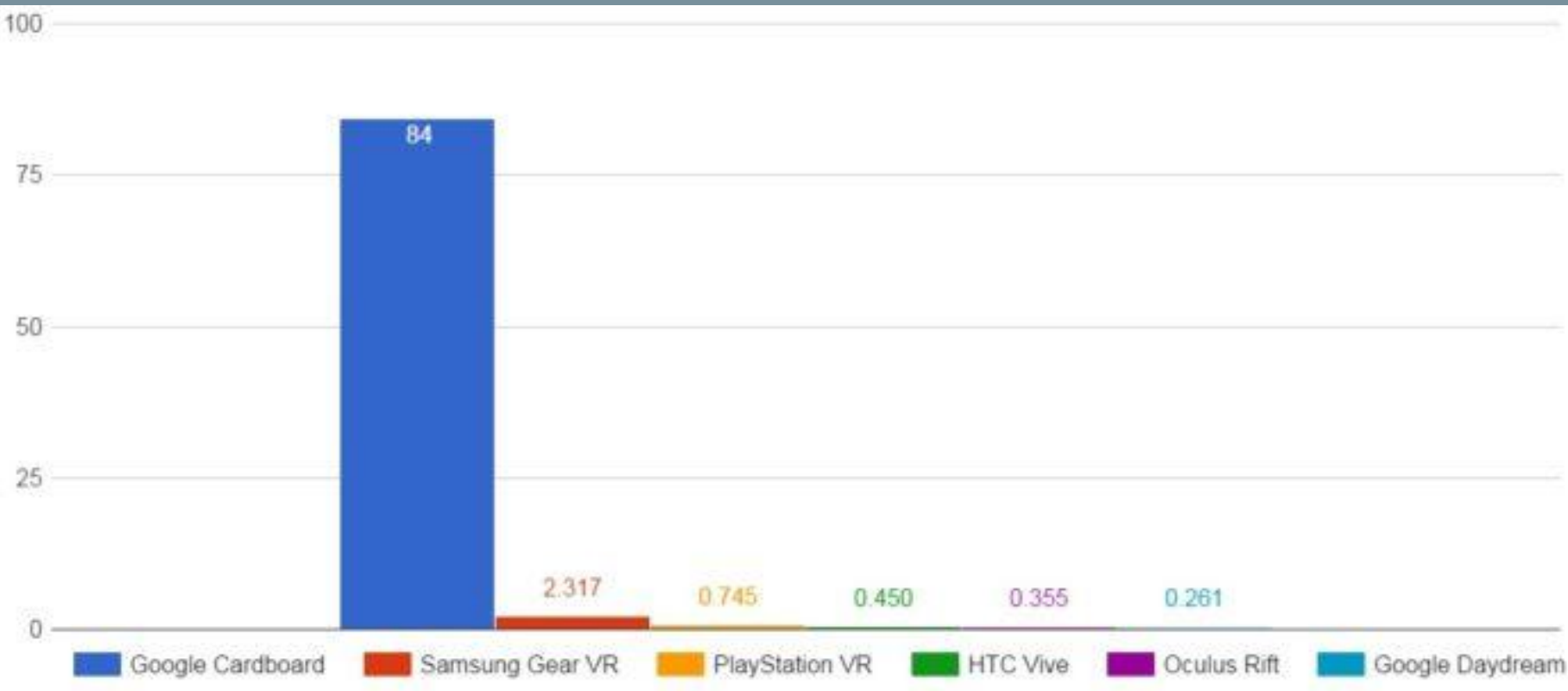






 wayfair®

@christikaes



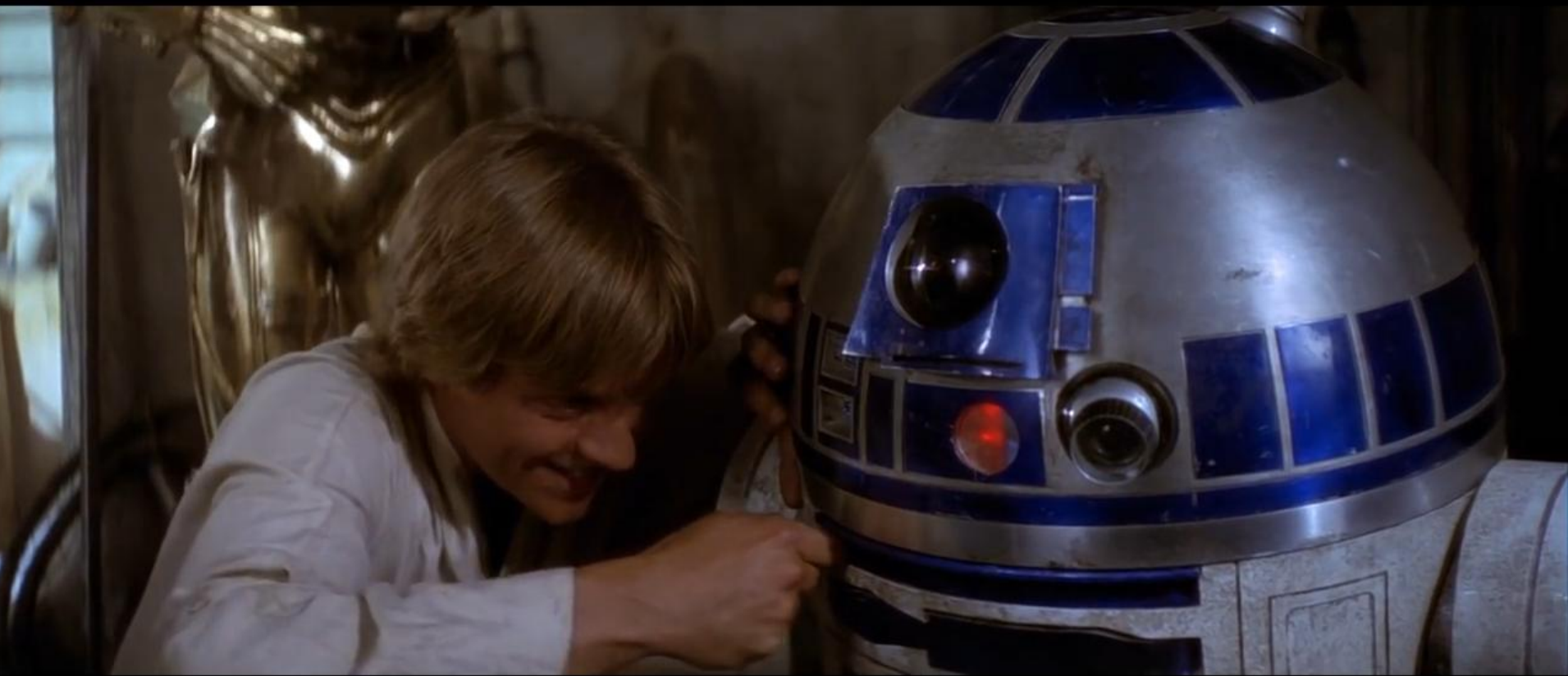


As Web Engineers, we  
can reach the majority of  
VR/AR consumers who  
are adopting low-end  
mobile devices



What is  
WEB VR/AR  
anyway?









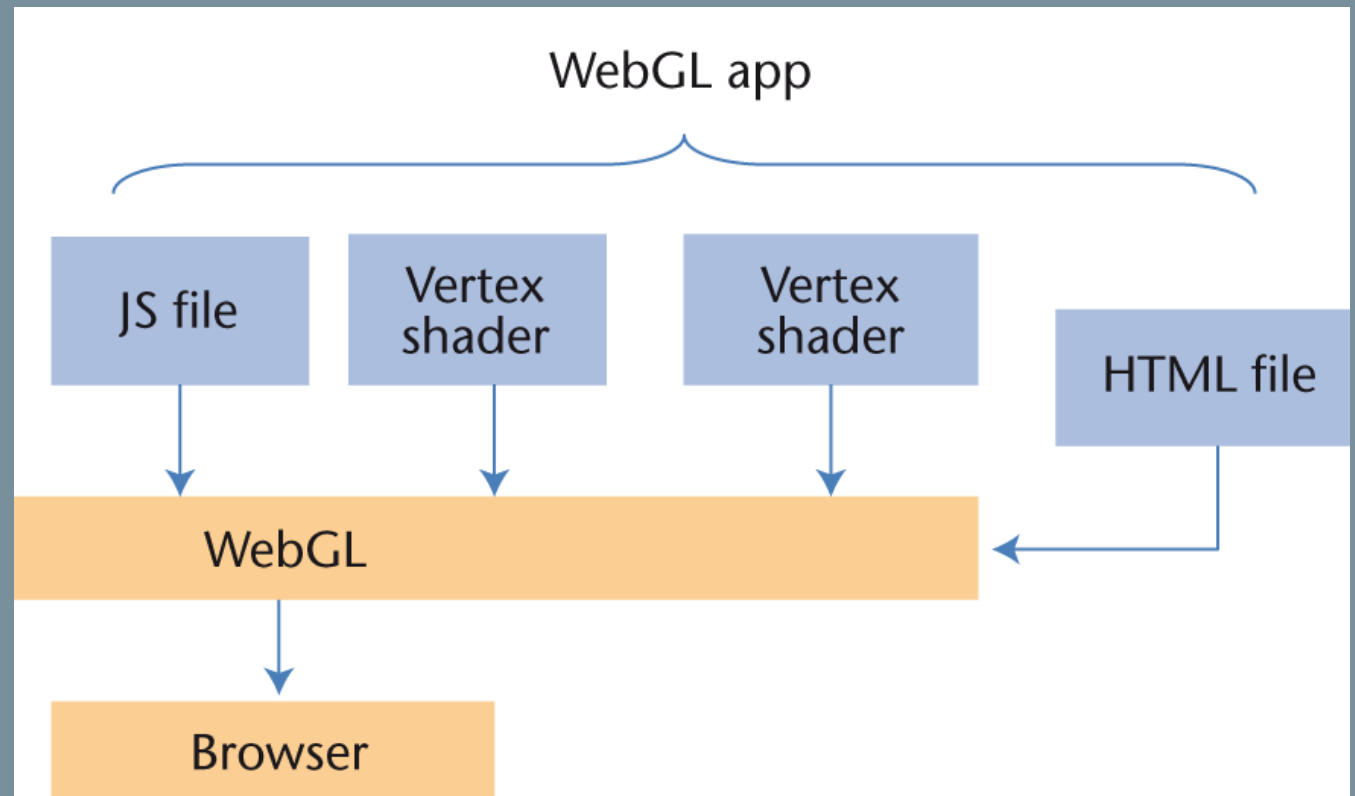
Web VR/AR brings the  
power of VR/AR to the  
browser!





How can I get started  
with **WEB VR/AR** ?

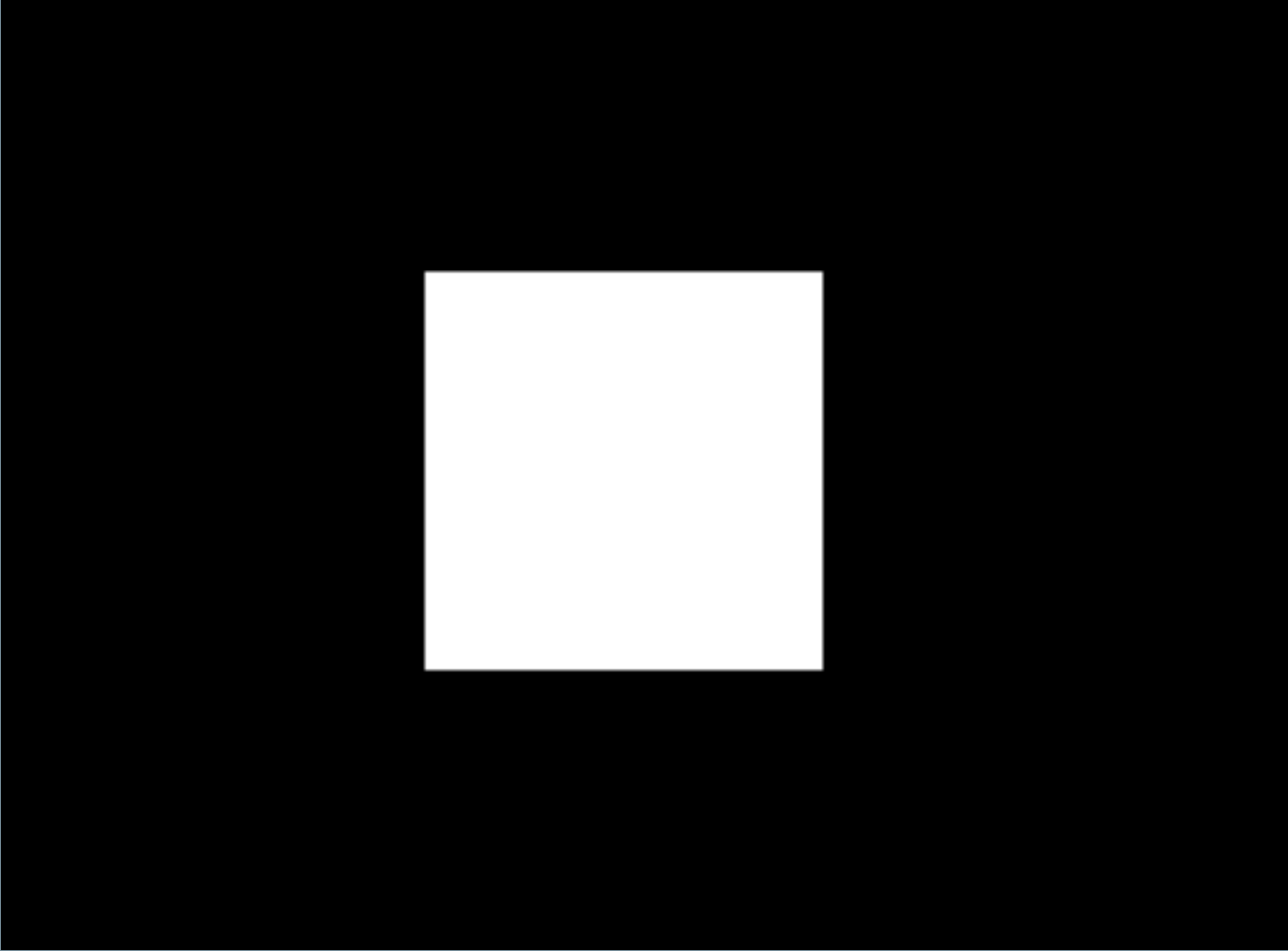
# WEB GL



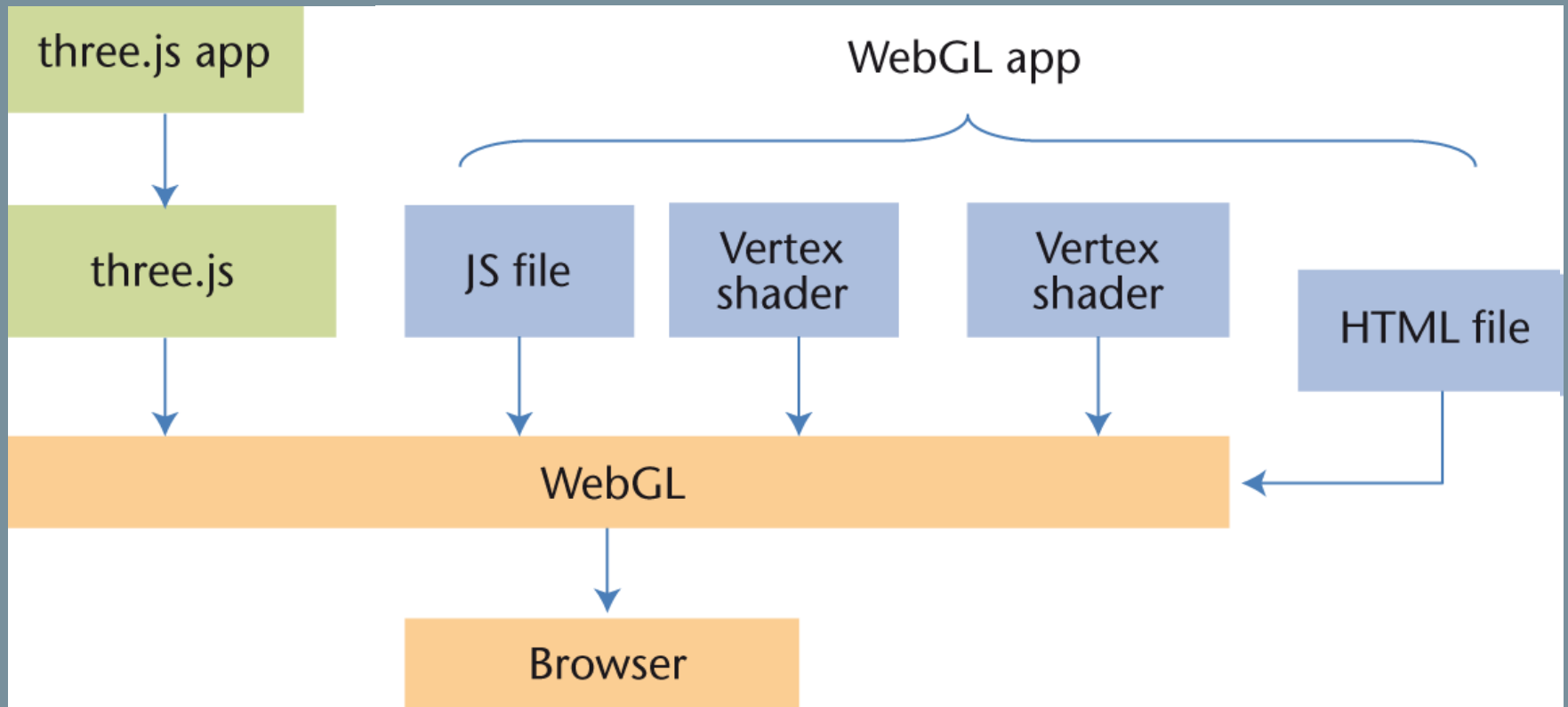
```

1 | function drawScene(gl, programInfo, buffers) {
7 |     // Clear the canvas before we start drawing on it.
8 |
9 |     // Our field of view is 45 degrees, with a width/height
10 |    // ratio that matches the display size of the canvas
11 |    // and we only want to see objects between 0.1 units
12 |
13 |    // Now move the drawing position a bit to where we want to
14 |
15 |    // Tell WebGL how to pull out the positions from the position
16 |
17 |    // Tell WebGL to use our program when drawing
18 |
19 |    // Set the shader uniforms
20 |
21 |    gl.drawArrays(gl.TRIANGLE_STRIP, offset, vertexCount);
22 |
23 |    programInfo.uniformLocations.projectionMatrix,
24 |    false,
25 |    projectionMatrix);
26 |
27 |    gl.uniformMatrix4fv(
28 |        programInfo.uniformLocations.modelViewMatrix,
29 |        false,
30 |        modelViewMatrix);
31 |
32 |    normalize,
33 |    stride,
34 |    offset);
35 |
36 |    gl.enableVertexAttribArray(
37 |        programInfo.attribLocations.vertexPosition);
38 |
39 | }

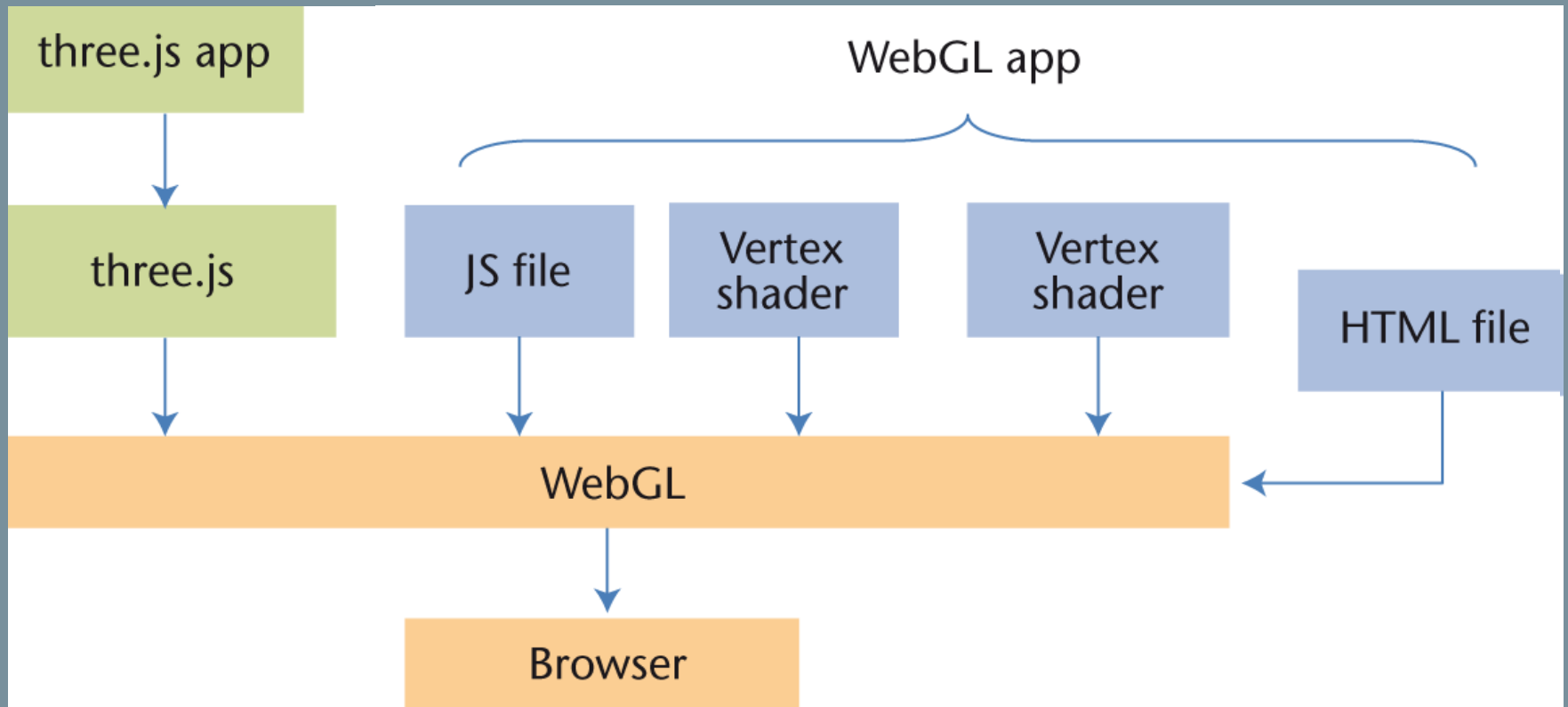
```



# WEB GL



# Three JS



```

// Set the scene size.
const WIDTH = 400;
const HEIGHT

// Set some c
const VIEW_AM
const ASPECT
const NEAR =
const FAR = 1

// Get the DO
const contain
document.

// Create a W
// and a scen
const rendere
const camera
new THREE
VIEW_
ASPEC
NEAR,
FAR
);

const scene =

// Add the co
scene.add(can

// Start the
renderer.setS

// Attach the renderer-supplied
// DOM element.
container.appendChild(renderer.domElement);

// Set up the sphere vars
const
const
const

// create the sphere's material
const

new // create a point light
const p
new T

// set
pointLi
pointLi
pointLi

// add
scene.a

// Move the S
// can see it.
sphere.position.z = -300;

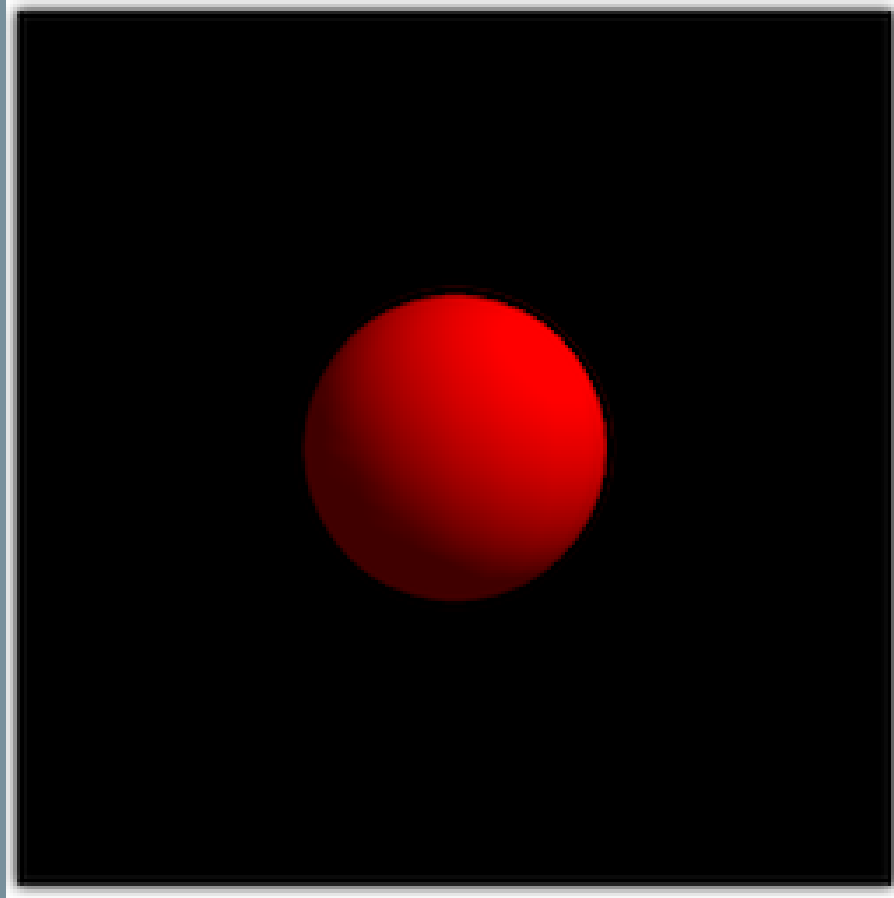
// Finally, add the sphere
scene.add(sphere);

function update () {
  // Draw!
  renderer.render(scene, camera);

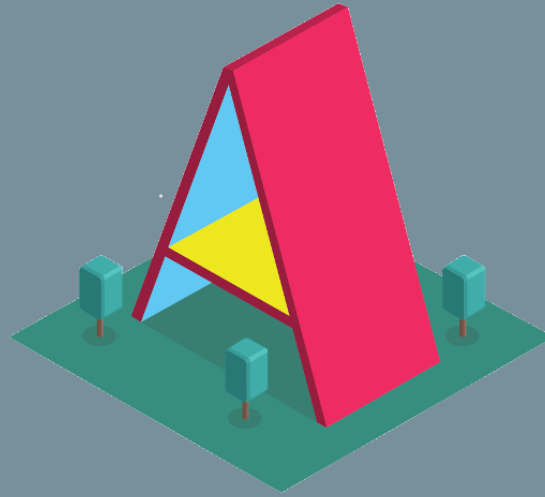
  // Schedule the next frame.
  requestAnimationFrame(update);
}

// Schedule the first frame.
requestAnimationFrame(update);

```

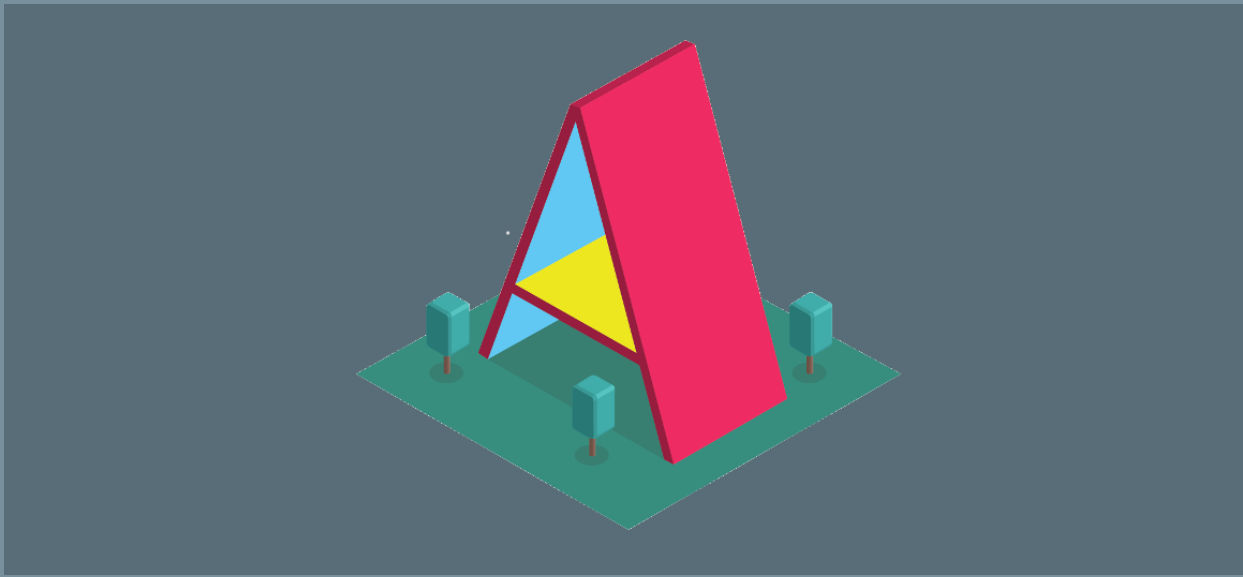


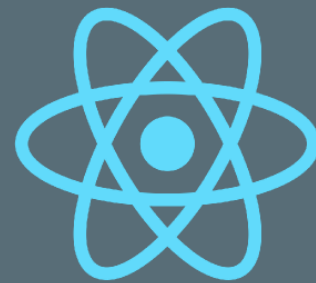
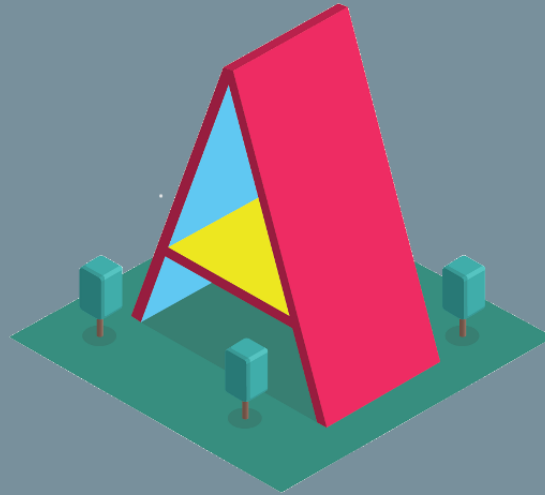




ReactVR



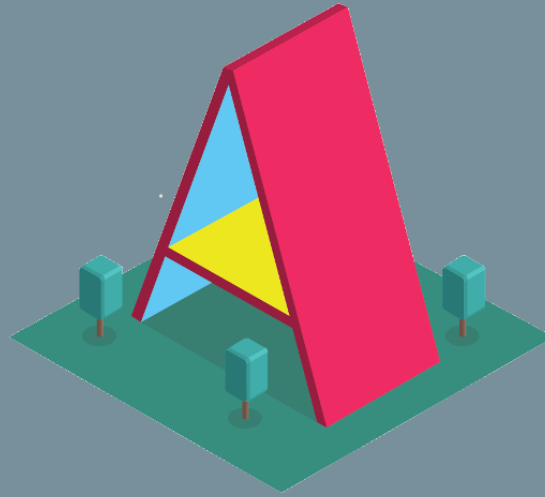




ReactVR



unity





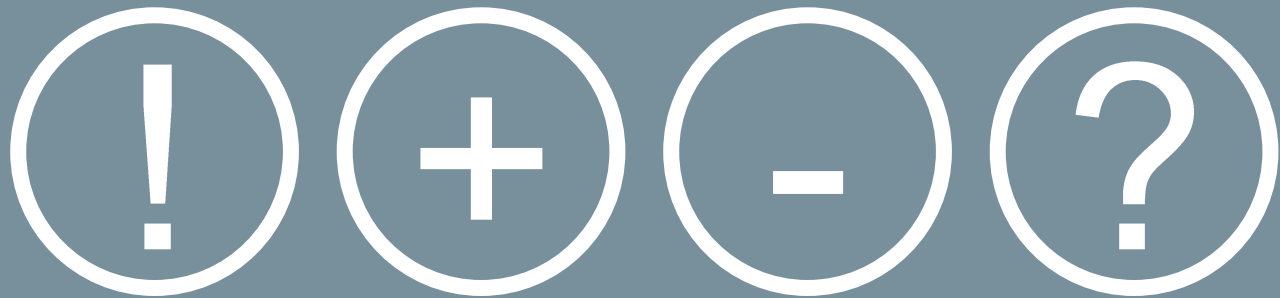
VR/AR

WHAT is it ?

HOW can I use it ?

WHY should I care ?

# THANK YOU!





# VIRTUAL/AUGMENTED REALITY FOR WEB

Christina Kayastha  
Senior Software Engineer  
Vistaprint, Cimpres  
@christikaes