Everything XR
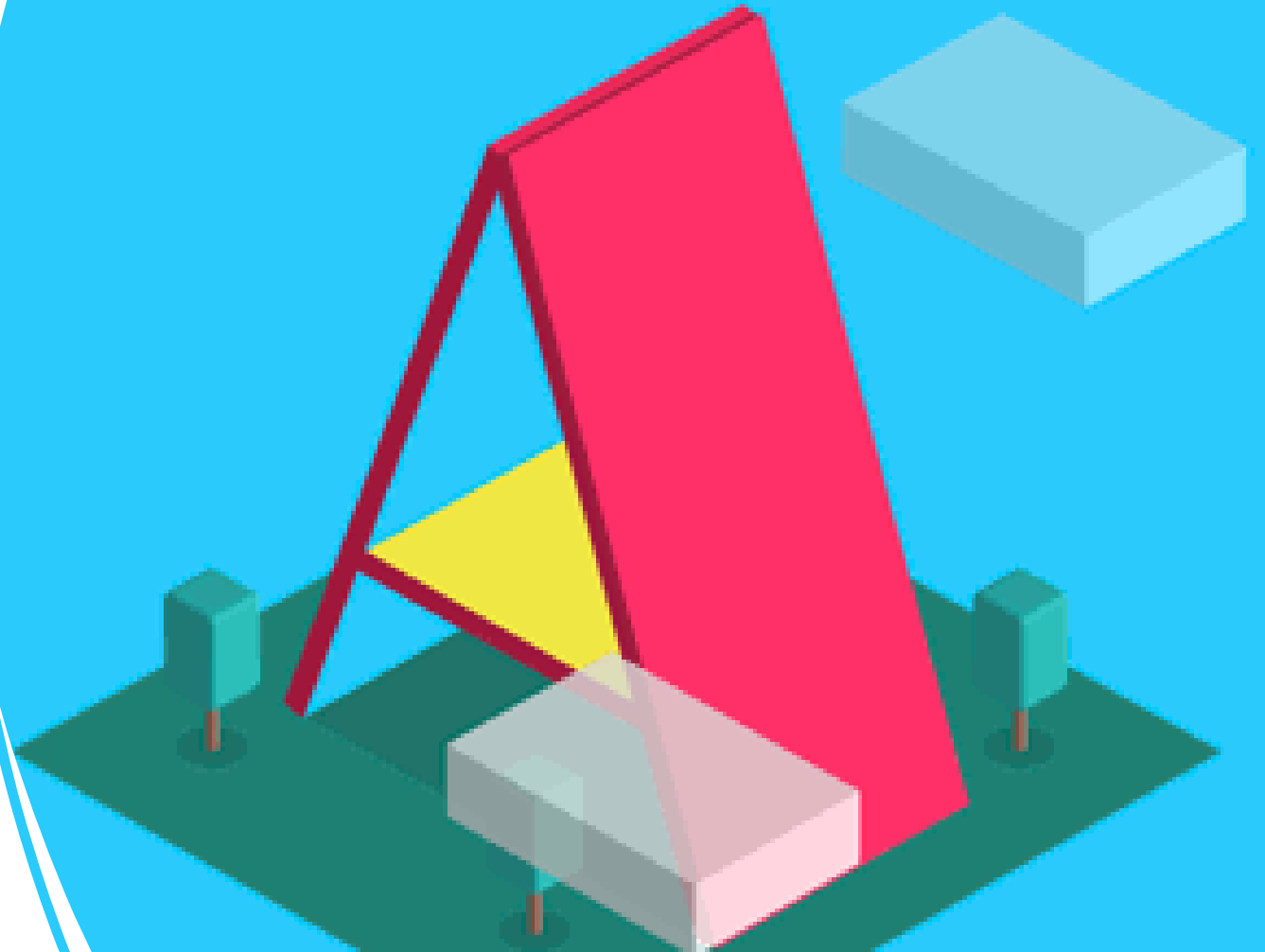
NuXR

Workshop

A-FRAME

- Web framework for building virtual reality (VR) experiences.

- A-Frame is based on top of HTML and WebGL

- Is an independent open source project.

- Originally conceived within Mozilla and now maintained by the co-creators of A-Frame within Supermedium.

Why A-FRAME ?

- VR Made Simple
- Declarative HTML
- Entity-Component Architecture
- Cross-Platform VR
- Performance
- Visual Inspector
- Components
- Proven and Scalable

WebXR

- WebXR is a JavaScript API for creating immersive 3D, virtual reality (and augmented reality) experiences in your browser.

- A-Frame uses the WebXR API to gain access to VR headset sensor data (position, orientation) to transform the camera and to render content directly to VR headsets.
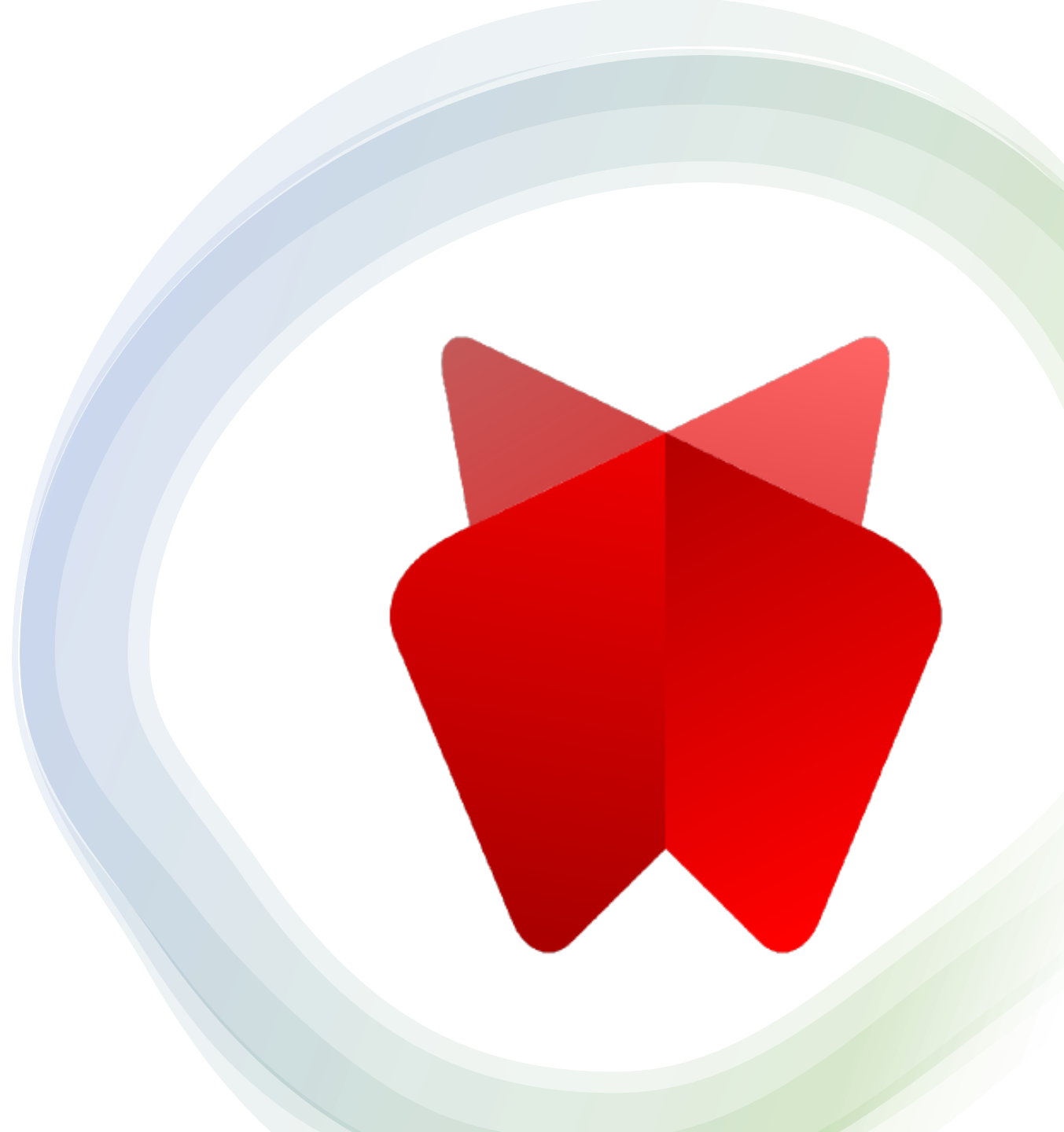
What Browsers Support A-FRAME?

- Safari for iOS
- Firefox for iOS
- Chrome for Android
- Samsung Internet
- UC Browser

Which VR Headsets Does A-Frame Support?

- HTC Vive
- Oculus Rift
- Oculus Quest
- Oculus Go
- Google Daydream
- Samsung GearVR
- Vive Focus

What are we making ?

FPS Zombie slayer game for mobile.

What do we need ?

- Laptop/Tablet
- Mobile device
- Glitch account

Basic Template

- **HTML BASIC TEMPLATE**

- **CDN**

```
<script src="https://aframe.io/releases/1.4.0/aframe.min.js"></script>
```

- **Initialize the scene**

```
<a-scene>
</a-scene>
```

Primitive Elements

- `<a-box position="-1 0.5 -3" rotation="0 45 0" color="#4CC3D9"></a-box>`

- `<a-sky radius="10" color="#F00"></a-sky>`

Changing Properties

- `<a-box position="-1 0.5 -3" rotation="0 45 0" color="#4CC3D9"></a-box>`

- `<a-sky radius="10" color="#F00"></a-sky>`

Visual Inspector

**Windows :
<ctrl> + <alt>
+ i**

**MAC : <ctrl>
+ <option> + i**

Components

- Components of A-Frame's entity-component framework are JavaScript modules that can be mixed, matched, and composed onto entities to build appearance, behavior, and functionality.

- Components are configurable, reusable, and shareable.

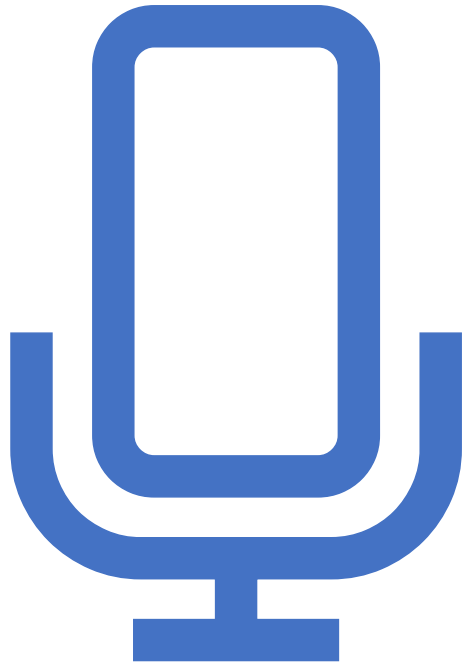- Most code in an A-Frame application should live within components.

Interactions

- 2D Browser Events
- Gaze Events
- Controller

(click, mouseenter, mouseleave, touchstart, touchend)

Sound

The sound component is positional.

```
<a-sound src="src: url(click.mp3)"
autoplay="true" position="0 2 5"></a-sound>
```

Asset Management System

- Preload and Cache assets for better performance.

```
<!-- Asset management system. -->
  <a-assets>
    <a-asset-item id="horse-obj" src="horse.obj"></a-asset-item>
    <a-asset-item id="horse-mtl" src="horse.mtl"></a-asset-item>
  </a-assets>
```

Stats

Embedded

```
a-scene {
  height: 300px;
  width: 600px;
}

<body>
  <div id="myEmbeddedScene">

    <a-scene embedded>
      <!-- ... -->
    </a-scene>

</div>
```

https://aframe.io/docs/1.4.0/components/embedded.html

Showcase

- https://github.com/bryik/aframe-ball-throw
- https://accessmars.withgoogle.com
- https://d1vlj71acq3rf7.cloudfront.net/index.html

Thanks !

Join the NuXR Discord group -
https://discord.gg/7EZUkese