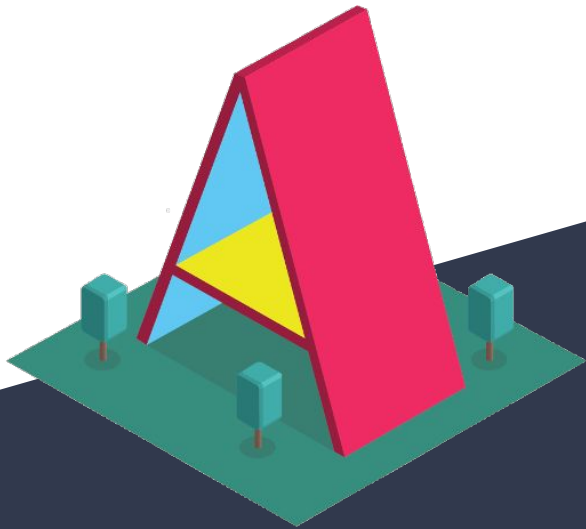
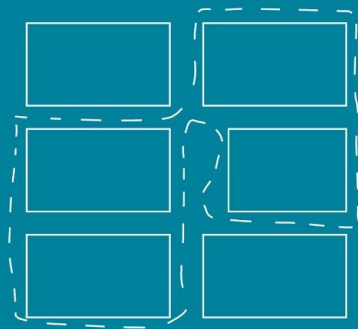


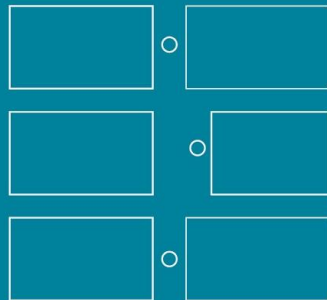
# HTML and WebVR!



# VR concepts



OPEN WORLD  
WALKTHROUGH



FIXED  
POINT OF VIEW

# How does typical VR work?



3D MODEL  
MODELLING SOFTWARE  
AND  
GAMING ENGINE

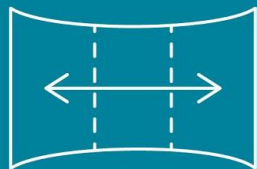


COMPUTER



VIEWER  
OCULUS RIFT  
HTC VIVE

# What is WebVR?



360 PANORAMA IMAGE

PHOTO  
CGI  
GRAPHIC



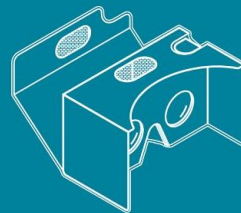
3D ASSETS

CODE  
3D BLOCKS  
CUSTOM



PHONE

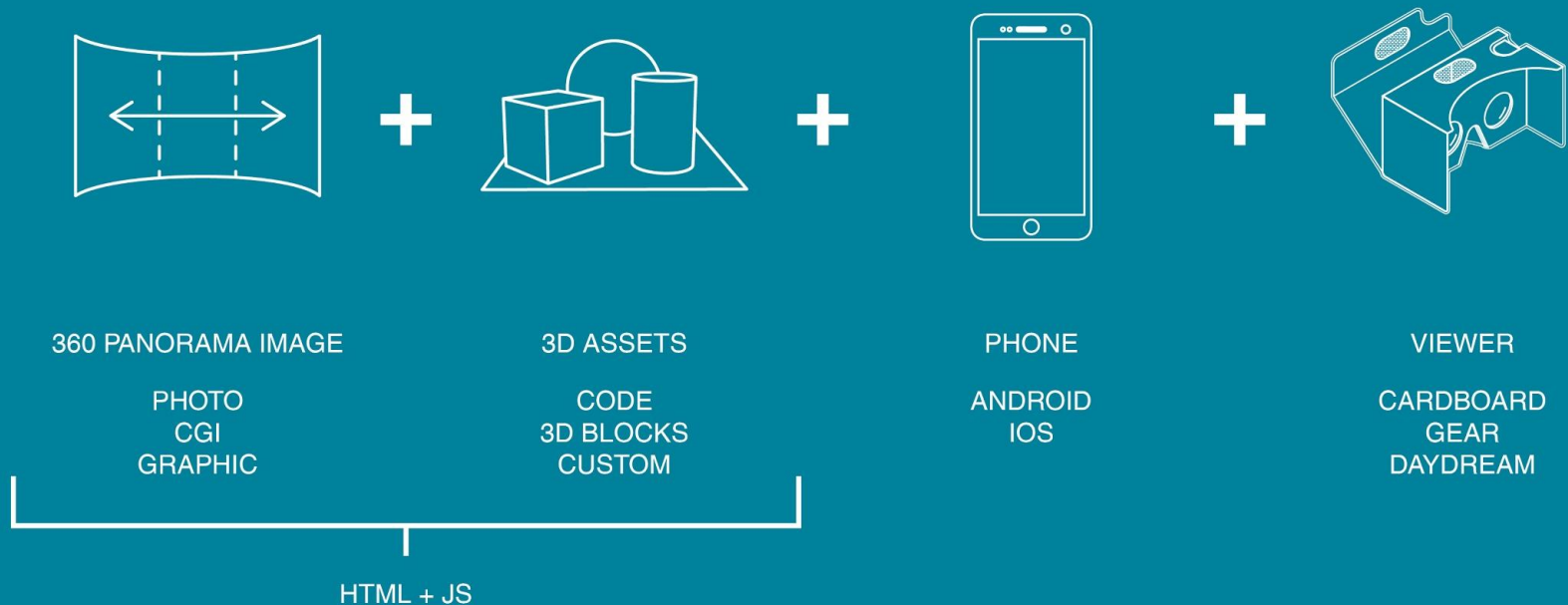
ANDROID  
IOS



VIEWER

CARDBOARD  
GEAR  
DAYDREAM

# What is WebVR?



# What is HTML?

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

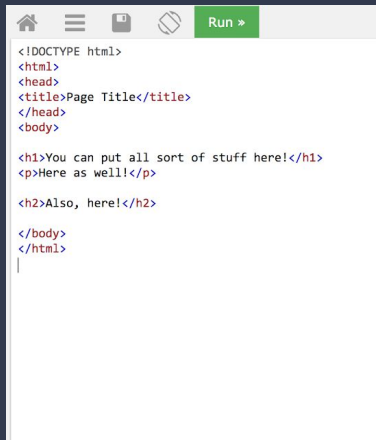
<h1>This is a Heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

HTML is the standard markup language for creating Web pages.

- HTML stands for Hyper Text Markup Language
- HTML describes the structure of Web pages using markup
- HTML elements are the building blocks of HTML pages
- HTML elements are represented by tags
- HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
- Browsers do not display the HTML tags, but use them to render the content of the page

# Where should I put things?

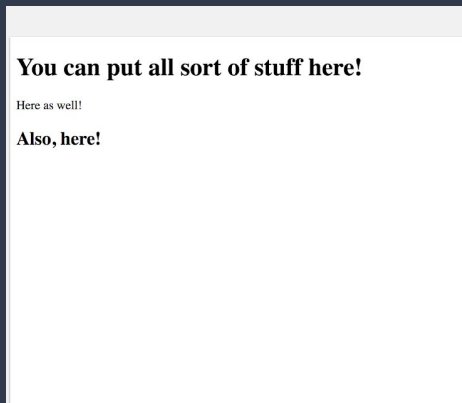
A screenshot of a code editor with a dark theme. The editor has a toolbar at the top with icons for home, menu, save, and a green 'Run' button. The code is written in a light color and includes HTML tags for document type, html, head, title, body, h1, p, and h2. The code is as follows:

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>You can put all sort of stuff here!</h1>
<p>Here as well!</p>

<h2>Also, here!</h2>

</body>
</html>
|
```



Notice the tags.

The structure of the index file is very important.

Don't worry about what is going on in the header tag (That's where the JavaScript usually goes).

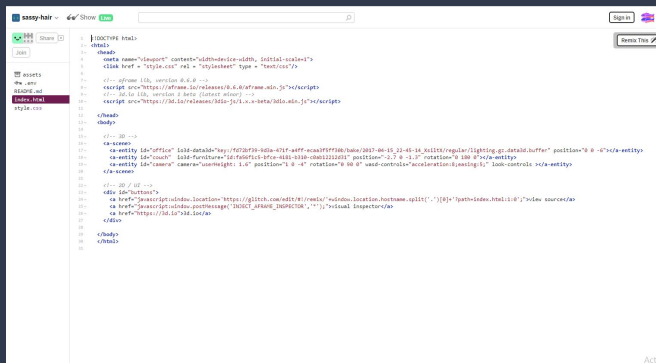
Main area is the body.

`<body>`

All the good stuff goes here. Like a sandwich.

`</body>`

# What is A-Frame?



A-Frame will have it's own “language” (what does that mean?).

A-Frame has their own tags we need to use to create a scene.

<body>

<a-scene>

Remember the sandwich? Notice how it is inside or “nested” between the body tags.

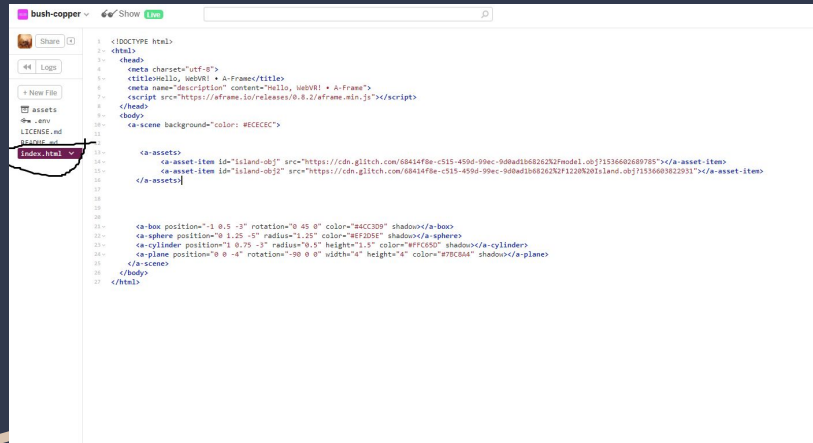
The VR world will go in the a-scene tags. All the 3D stuff basically.

</a-scene>

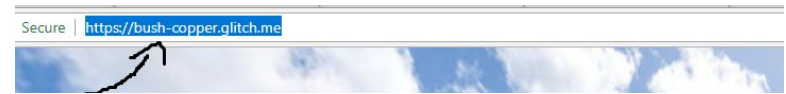
</body>



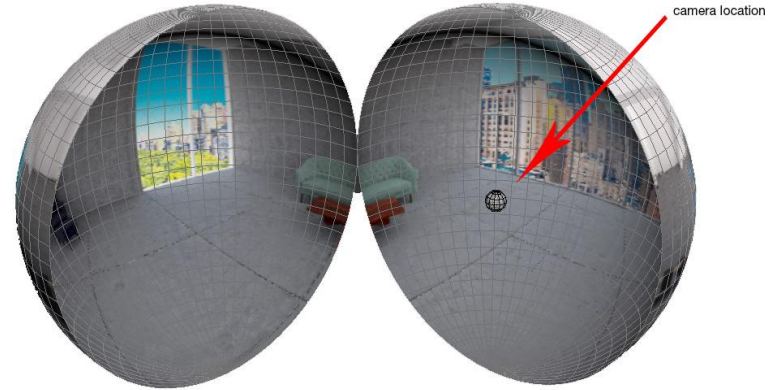
# What you'll be making



You can see what you created from your computer or your phone. You can make an account on glitch.com to use as a server and upload your html to the site to see your webpage!



# What's the set up for WebVR?



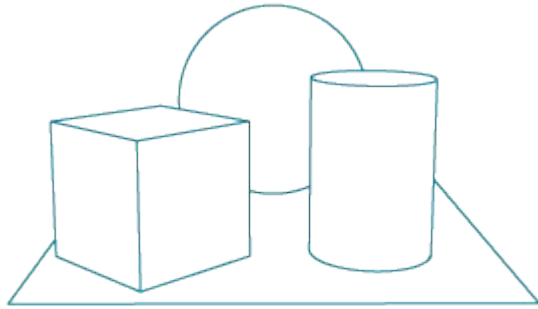
360 equirectangular image mapped on to a sphere  
in the browser

`<a-sky src="...url for file we want to use..." rotation="0 0 0">`

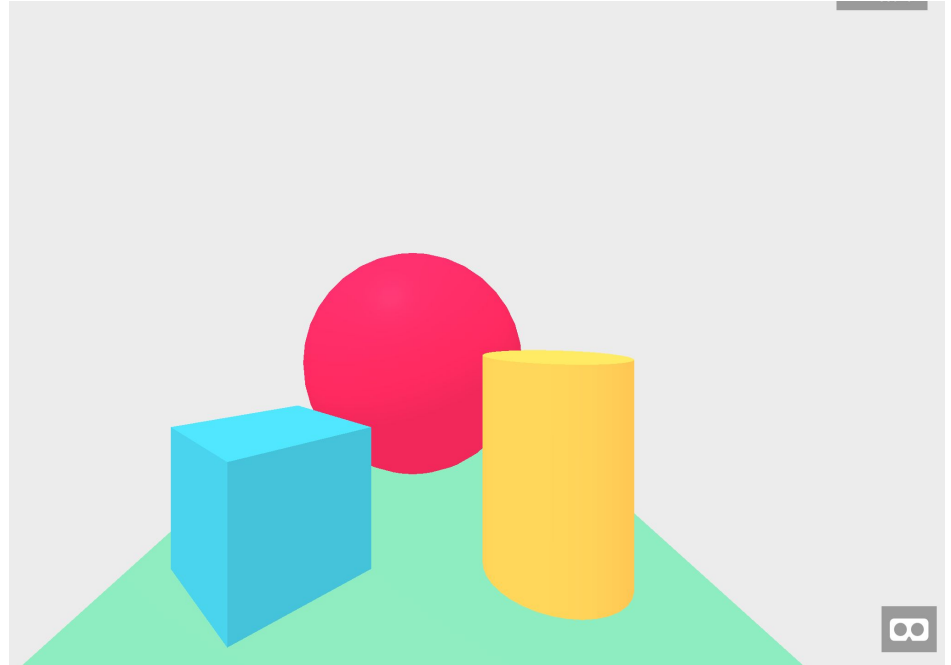
`</a-sky>`

# How do we add entities to the scene?

## Geometric Primitives

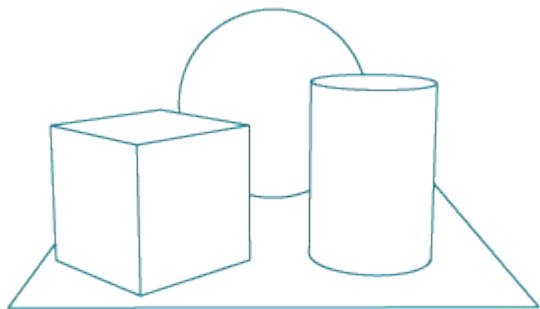


```
<a-box> </a-box>  
<a-sphere> </a-sphere>  
<a-cylinder> </a-cylinder>  
<a-plane> </a-plane>
```



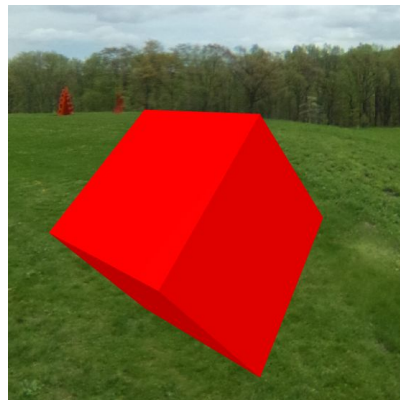
# How do we modify the entities in the scene?

Geometric Primitives



Components

position  
rotation  
scale  
color



`<a-box> </a-box>`  
`<a-sphere> </a-sphere>`  
`<a-cylinder> </a-cylinder>`  
`<a-plane> </a-plane>`

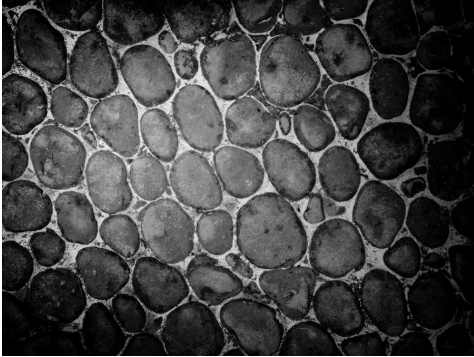


`<a-box rotation="0 45 45" scale="2 2 2" position="0 0 -5"`  
`color="red"> </a-box>`

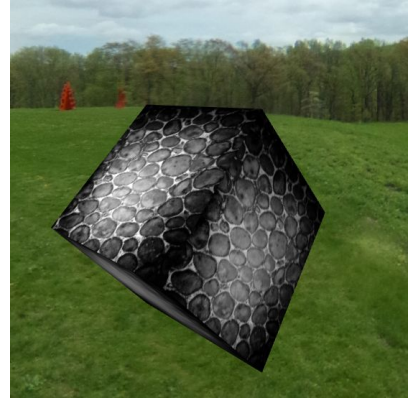
# What else can we do with the entities?

Texture

Components



src



```
<a-box rotation="0 45 45" scale="2 2 2" position="0 0 -5"  
src="https://i.imgur.com/mYmmbrp.jpg"  
> </a-box>
```

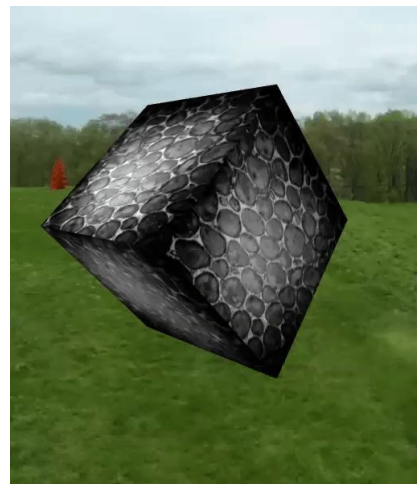
# Let's animate!

## Animation

```
<a-animation>  
...what we want to animate...  
</a-animation>
```

## Components

position  
amount  
direction  
duration  
repeat



```
<a-box rotation="0 45 45" scale="2 2 2" position="0 0 -5"  
src="https://i.imgur.com/mYmmbrp.jpg">  
  <a-animation attribute="position" to="0 1.0 -5" direction="alternate" dur="2000"  
    repeat="indefinite"></a-animation>  
</a-box>
```

# Interaction! (ok, ... this one's going to a bit more complex....)

Pieces we need

<a-camera>

<a-cursor>

</a-cursor>

</a-camera>

Components

position  
amount  
direction  
duration  
repeat



# Interaction! (ok, ... this one's going to a bit more complex....)

Pieces we need

```
<a-camera>
```

```
  <a-cursor>
```

```
  </a-cursor>
```

```
</a-camera>
```

More pieces....

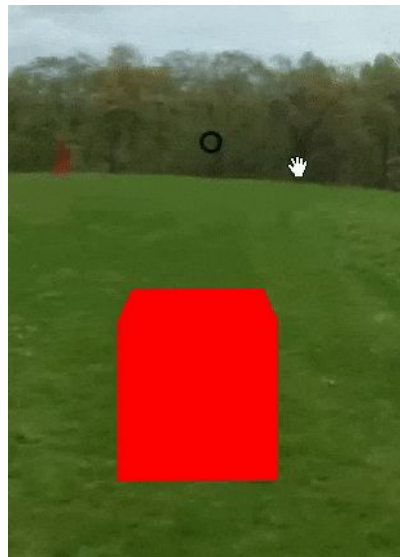
```
<a-box></a-box>
```

+

some additional js  
added in the head of the  
html

+

what's going to happen



```
<script
```

```
src="https://unpkg.com/aframe-event-set-component@3.0.3/dist/aframe-event-set-component.min.js"></script>
```