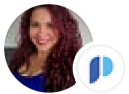
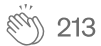


Learning A-Frame: How to do Animations



Alexandra Etienne · [Follow](#)

Published in Prototypy · 5 min read · Apr 12, 2017



213



3



Welcome to this [A-Frame](#) tutorial! We are going to take a look at the different kinds of animations that we can do with this awesome framework, using an [example on codepen.io](#).

Animations are a key part of all great 3d creations out there. They attract our eye and bring our scene to life.



[A-frame animation using anime.js by Kevin Ngo](#)

We can very easily create *animations in A-Frame* placing the `<a-animation>` element inside the object/entity we want to animate. We can then decide which properties we want to animate. With this in mind, we can make our entity move the way we want, modifying attributes like its position, rotation, scale and even the color.

Let's take a look at each one:

Position Animation

```
1 > <script src="https://aframe.io/releases/0.5.0/aframe.min.js"></script>
2 > <a-scene>
3 >   <a-box color="tomato" depth="2" height="2" width="2">
4 >     <a-animation attribute="position"
5 >       dur="3000"
6 >       from="-5 0 0"
7 >       to="5 0 0"
8 >       repeat="indefinite"></a-animation> </a-box>
9 >   <a-sky color="lightyellow"></a-sky>
10 >   <a-camera position='0 0 3' user-height='0'></a-camera>
11 > </a-scene>
```

Position animation

So we have a scene, with a box entity. Attaching the animation as a child of our box, we label the attribute “position” — To learn more about all the attributes that you can use with animations see [here](#). Then we can change variables like:

- **dur** (duration in milliseconds of the animation) in this case 3000 — the higher the value the slower it will move.
- **from** (where the animation starts) in this case a value of -5 in the x axis
- **to** (where the animation ends) in this case 5 in the x axis
- **repeat** (how many times do you want your animation to, well, repeat) in this case its “indefinite”, so it will go on forever.

The rest of the code is just adding a light-yellow sky and adjusting the position of the camera.

Result:



Rotation Animation

```
1 <script src="https://aframe.io/releases/0.5.0/aframe.min.js"></script>
2 <a-scene>
3   <a-box color="tomato" depth="2" height="2" width="2">
4     <a-animation attribute="rotation"
5       dur="3000"
6       to="0 360 0"
7       repeat="indefinite"
8       easing="linear"></a-animation> </a-box>
9   <a-sky color="lightyellow"></a-sky>
10  <a-camera position='0 0 3' user-height='0'></a-camera>
11 </a-scene>
```

Rotation animation

So in this example, same thing, the animation is a child of the box entity. However, the attribute is labeled as “rotation”. The **dur** has the same value and the **repeat** is left as “indefinite”. No need to define a **from** attribute, since we want our box to rotate at 360° in the y axis, we just define the **to** attribute to that value.

We introduce the **easing** attribute, which is basically how you want the object to move/or what pattern do you want your animation to follow (we’ll see more on that later). In this case the easing is “linear”, which makes the animation constant in its movement.

Result:



Color Animation

```
16 <a-animation attribute="material.color" from="blue" to="red" dur="3000"  
    repeat="indefinite">  
17 </a-animation>  
18
```

Changing the color animation

In this step, we are going to combine the two previous animations, and add some lines of code (see screenshot above) to change the color of our entity in sync with the other animations.

So we open another `<a-animation>` and modify its parameters, defining the **attribute** “material.color” and going **from** a blue **to** a red color. The **dur** and **repeat** keep the same values as before.

We will be able to see the transition of the color while our box is moving. So all 3 animations (position, rotation and color) are working together.

Result:



You can take a look at a [video tutorial](#) I made of basic animations on a-frame, explaining this example step by step:

But wait, there's something missing...

Scaling Animation



we are going to make our object pulsate or pump like a heart. This is a little bit more advanced than basic animations but I wanted to share the cool effect with you guys.

```
6 <a-animation attribute="scale"
7   dur="1000"
8   from= "1 1 1"
9   to="2 2 2"
10  direction='alternate-reverse'
11  easing= "ease-in-out-circ"
12  repeat="indefinite"></a-animation>
13
```

So, as shown on the screenshot above, the **attribute** is “scale”, the **dur** is 1000 (so it will move faster than our the box from before). We will start **from** a value of 1 in the x,y,z axis and go **to** a value of 2. The **repeat** attribute is kept as “indefinite”.

Additionally, we are going to change the **easing** to “ease-in-out-circ” — this is one of the many *easing functions* that you can play around with. You can also check out the visualisations of the different curves of easing patterns *here*. The “ease-in-out-circ basically means that the animation will start slow, speed up in the middle, and then slow down at the end in a sort of circular/elliptic way.

We’ve also included the **direction** attribute, that defines which way to animate between the **from** and **to** values. In this case, alternate-reverse means animating “*on odd-numbered cycles, from from to to and on even-numbered cycles, from to to from*” If you want to know more about the different values you can use for the direction attribute please go *here*.

Thanks to this we get that heart-pumping effect.

Result:



As you can see the object I'm animating here is Earth, which I created by just adding a texture image to a sphere, and the space behind is simple a skybox. It is very simple to do, check out the links ;) You can make your own Earth with just a few lines of code and animate it anyway you want!

Thanks for reading guys. I hope you find this post useful. I suggest you get crazy trying out animations on a-frame!

Don't hesitate to contact me anytime @AndraConnect



Join our weekly newsletter

Get the best handpicked design news and tools. See [past issues here](#).

Email

katamansokirk@gmail.com

Sign up



I agree to leave medium.com and submit this information, which will be collected and used according to [Upscribe's privacy policy](#).

Web Development

Animation

Design

A Frame

Tutorial



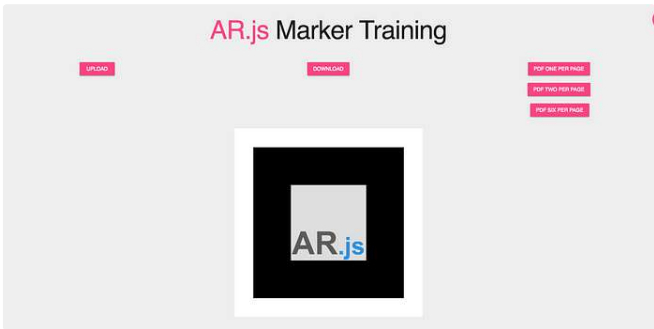
Written by Alexandra Etienne

2.1K Followers · Writer for Prototypr

AR/VR evangelist, digital marketing pro & woman in tech! Salsa dancer, horror film lover and fan of super mario.

Follow

More from Alexandra Etienne and Prototypr



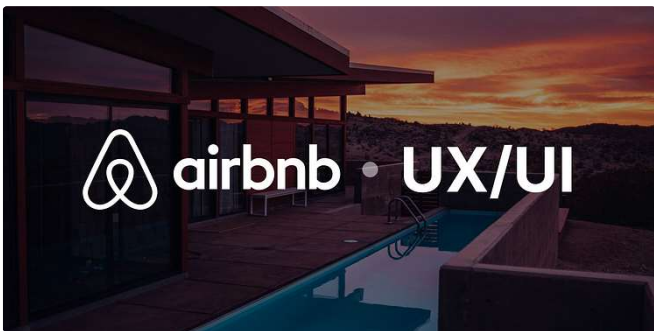
Alexandra Etienne in ARjs

How To Create your Own Marker ?

3 easy steps to create a marker in 5min

2 min read · Jun 7, 2017

905 32



Punit Chawla in Prototypr



Punit Chawla in Prototypr

UX/UI Design Trends Going Into 2024

Every year, we have a line up of new design trends that not only look good, but also stick...

10 min read · Dec 13, 2023

9.6K 89



Alexandra Etienne in ARjs

How Airbnb Became a Leader in UX Design

From a small bed & breakfast to a leader in UX/UI design, this billion dollar startup is a...

8 min read · Feb 14, 2024

 1.1K  6



Augmented Reality in 10 Lines of HTML

AR.js with a-frame magic

3 min read · Apr 3, 2017

 4.1K  66



See all from Alexandra Etienne

See all from Prototypr

Recommended from Medium



 Desi Decode

Augmented Reality Unveiled: Shaping the Future of Virtual...

Augmented Reality Unveiled: Shaping the Future of Virtual Worlds

5 min read · Jan 17, 2024



50



 Ameer Omidvar in Bootcamp

Apple's all new design language

I've been in love with design since i was a kid. It was just my thing. To make things work...

4 min read · Feb 14, 2024



910



11



Lists



General Coding Knowledge

20 stories · 940 saves



Tech & Tools

16 stories · 156 saves




Coding & Development

11 stories · 458 saves



Stories to Help You Grow as a Software Developer

19 stories · 845 saves

 Built an App in 6 Hours that Makes \$1,500/Mo

 Artturi Jalli

I Built an App in 6 Hours that Makes \$1,500/Mo

Copy my strategy!





Punit Chawla  in Prototypr

UX/UI Design Trends Going Into 2024

Every year, we have a line up of new design trends that not only look good, but also stick...

10 min read · Dec 13, 2023



9.6K



89



· 3 min read · Jan 23, 2024



10.7K



138



Migrating from WebGL to WebGPU



MY.GAMES in MY.GAMES

Migrating from WebGL to WebGPU

Moving to the upcoming WebGPU means more than just switching graphics APIs. It's...

12 min read · Jan 16, 2024



213



1



These Words Make it Obvious That Your Text is Written By AI



James Presbitero Jr. in Practice in Public

These Words Make it Obvious That Your Text is Written By AI

These 7 words are painfully obvious. They make me cringe. They will make your reader...

5 min read · Dec 31, 2023



40K



1055



See more recommendations