BASIC EVENTS (OBJECT ANIMATION) ON A-FRAME

INTRODUCTION

- Practical exercise for the interaction with basic objects in A-Frame:
  - Position
  - Scale

STEPS

1. Copy and paste the basic A-Frame code (https://aframe.io/docs/1.6.0/introduction/) on Glitch (https://glitch.com/)

2. For the correct working of the events, it is necessary to paste this codeline on the project: **<a-entity cursor="rayOrigin:mouse"></a-entity>**

   (With this we are telling the project that we are going to use the mouse).

EXERCISE 1. BLUE BOX MOVEMENT

- Within the codeline of the blue box: <a-box position="-1 0.5 -3" rotation="0 45 0" color="#4CC3D9"></a-box> we will add the atribute **animation** with different values:

<a-box position="-1 0.5 -3" rotation="0 45 0" color="#4CC3D9"
animation="property: position;
to: -2 0.5 -4; dur: 1000; loop: true; dir: alternate;">
</a-box>

- This codeline tells us that the box will move from position (-1 0.5 -3) to (-2 0.5 -4), with a duration of 1000, in a loop, and it will move in both directions.

EXERCISE 1. BLUE BOX MOVEMENT: ANIMATION – PROPERTY

- As we want to change the position of the box, the first value we have to add is **property: position**

  (If we wanted to change the scale, we would have to write property: scale)

```
<a-box position="-1 0.5 -3" rotation="0 45 0" color=”#4CC3D9"
        animation="property: position;
         to: -2 0.5 -4; dur: 1000; loop: true; dir: alternate;">
</a-box>
```

EXERCISE 1. BLUE BOX MOVEMENT: ANIMATION – FROM TO

- As we want to change te position, we have to set an initial position (position atribute) and write the ”to” value to set the final position.

```
<a-box position="-1 0.5 -3" rotation="0 45 0" color=”#4CC3D9"
        animation="property: position;
         to: -2 0.5 -4; dur: 1000; loop: true; dir: alternate;">
</a-box>
```

EXERCISE 1. BLUE BOX MOVEMENT: ANIMATION – DUR

- ”dur” value tells us the duration of the movement. The time to reach the final position.
- If we want the movement faster, the number should be lower.

```
<a-box position="-1 0.5 -3" rotation="0 45 0" color=”#4CC3D9"
        animation="property: position;
         to: -2 0.5 -4; dur: 1000; loop: true; dir: alternate;">
</a-box>
```

EXERCISE 1. BLUE BOX MOVEMENT: ANIMATION – LOOP

- If we write “loop: true;” the box will move all the time. However, if we don´t write this value, the box will move once.

```
<a-box position="-1 0.5 -3" rotation="0 45 0" color=”#4CC3D9"
        animation="property: position;
         to: -2 0.5 -4; dur: 1000; loop: true; dir: alternate;">
</a-box>
```

EXERCISE 1. BLUE BOX MOVEMENT: ANIMATION – DIR

- Finally, if we want a back-and-forth movement, we have to write “dir:alternate”

```
<a-box position="-1 0.5 -3" rotation="0 45 0" color=”#4CC3D9"
        animation="property: position;
         to: -2 0.5 -4; dur: 1000; loop: true; dir: alternate;">
 </a-box>
```

EXERCISE 1. BLUE BOX MOVEMENT: VALUES

- The values of this attribute are separated by semicolons.
- Inside the same quotation marks.

```
<a-box position="-1 0.5 -3" rotation="0 45 0" color=”#4CC3D9"
        animation="property: position;
            to: -2 0.5 -4; dur: 1000; loop: true; dir: alternate;">
</a-box>
```

- In this example, the box will move automatically at the begining of the scene.

EXERCISE 2.1. CLICK ANIMATION – SPHERE POSITION

- If we want the animation to appear when clicking, we have to add in the "animation" atribute the value "startEvents: click"
- The position of the sphere will change when you click on it.
- In the codeline of the sphere, we will add the animation atribute and the following values:

```
<a-sphere position="0 1.25 -5" radius="1.25" color="#EF2D5E"
    animation="startEvents:click; property: position; to: 0 2.25 -5"
></a-sphere>
```

EXERCISE 2.2. CLICK ANIMATION – SPHERE SCALE

- If we want the animation to appear when clicking, we have to add in the "animation" atribute the value "startEvents: click"
- In this case, if you click on the sphere, its scale will change:
- For that, it is necessary to write in the "property" value: **scale**

```
<a-sphere position="0 1.25 -5" radius="1.25" color="#EF2D5E"
    animation="startEvents:click; property: scale; to: 2 2 2"
></a-sphere>
```

EXERCISE 2.3. CLICK ANIMATION – SPHERE SCALE FROM TO

- In this case, if we want the sphere in the initial position, we have to add ”from” and “to” values:

```
<a-sphere position="0 1.25 -5" radius="1.25" color="#EF2D5E"
  animation="startEvents:click; property: scale; from: 2 2 2; to: 1 1 1"
></a-sphere>
```

EXERCISE 2.3. CLICK ANIMATION – SPHERE SCALE DUR

- If we want to change the duration of the animation, we can change the value of the "dur" value:

```
<a-sphere position="0 1.25 -5" radius="1.25" color="#EF2D5E"
    animation="startEvents:click; property: scale; from: 2 2 2; to: 1 1 1;
dur: 2000;"
    ></a-sphere>
```

EXERCISE 2.3. CLICK ANIMATION – SPHERE SCALE LOOP AND DIR

- We can add the values that we used in the first excersise:

```
<a-sphere position="0 1.25 -5" radius="1.25" color="#EF2D5E"
    animation="startEvents:click; property: scale; from: 2 2 2; to: 1 1 1;
dur: 1000; loop: true; dir: alternate"
    ></a-sphere>
```

EXERCISE 3. MOUSEOVER ANIMATION – CYLINDER SCALE

- If we want the animation to appear when moving the mouse over the object, we have to add the atribute “animation__enter” and the following values:

```
<a-cylinder position="1 0.75 -3" radius="0.5" height="1.5" color="#FFC65D”
animation__enter=“startEvents:mouseenter; property:scale; to: 2 2 2;”></a-cylinder>
```

- This means that when we move the mouse over the object, its scale will increase twice.

EXERCISE 3. MOUSEOVER ANIMATION – CYLINDER SCALE

- If we want the initial position when the mouse is not on the object, we have to add the "**animation__leave**" atribute with the following values:

```
<a-cylinder position="1 0.75 -3" radius="0.5" height="1.5" color="#FFC65D"
animation__enter="startEvents:mouseenter; property:scale; to: 2 2 2;"
animation__leave="startEvents:mouseleave; property:scale; to: 1 1 1;"
> </a-cylinder>
```

RESULTADO FINAL

- https://glitch.com/edit/#!/eventos-aframe-ejemplo2?path=index.html%3A18%3A71