

3D TEXT AND TIMING EVENTS



What is our GOAL for this MODULE?

The goal of this module is to learn to use text in A-Frame and also to learn about JavaScript timing events to show the timer clock in the virtual simulation scene.

What did we ACHIEVE in the class TODAY?

- We learned to use 3D text in A-Frame.
- We learned to use Javascript timing events.

Which CONCEPTS/CODING BLOCKS did we cover today?

- Used A-Frame text component.
- Used `addEventListener()`, `querySelector(elementId)`, `registerComponent()`.
- Used the `setAttribute()`, `setInterval(function, millisecond)` methods.

How did we DO the activities?

1. We learned how to add the text for the number of targets and score as a child entity of the header entity

```
<!-- Target Status -->
<a-entity position="-18 19.3 0">
  <a-entity
    position="-0.6 0.13 0"
    text="font: aileronsemibold; width: 12; color: black; value: TRAGETS\nREMAINING"
  ></a-entity>
  <a-entity
    id="targets"
    position="-8 0.3 0"
    text="font: exo2bold; align: center; width: 30; color: black; value: 20"
  ></a-entity>
</a-entity>
```

```
<!-- Score -->
<a-entity position="30.5 21.5 0">
  <a-entity
    position=""
    text="font: exo2bold; align: center; width: 40; color: black; value: SCORE"
  ></a-entity>
  <a-entity
    id="score"
    position="0 -2 0"
    text="font: exo2bold; align: center; width: 40; color: black; value: 0"
  ></a-entity>
</a-entity>
</a-entity>
```

2. We learned how to write two user-defined functions "updateTargets" and "updateScore".

```
updateTargets: function () {
  const element = document.querySelector("#targets");
  var count=element.getAttribute("text").value
  let currentTargets = parseInt(count);
  currentTargets -= 1;
  element.setAttribute("text", {
    value: currentTargets,
  });
},
```

```
updateScore: function () {
  const element = document.querySelector("#score");
  var count=element.getAttribute("text").value
  let currentScore = parseInt(count);
  currentScore += 50;
  element.setAttribute("text", {
    value: currentScore,
  });
},
```

3. We learned how to make the rings invisible by setting the visible attribute to false and called the functions in "isCollided" function.

```
isCollided: function (elemntId) {
  const element = document.querySelector(elemntId);
  element.addEventListener("collide", (e) => {
    if (elemntId.includes("#ring")) {
      element.setAttribute("visible", false);
      this.updateScore();
      this.updateTargets();
    }
  });
},
```

4. We learned how to write the 'gameOver' function and gameOver text

```
<!--Game Over-->
<a-entity
  id="game_over_text"
  position="0 7.5 0"
  text="font: exo2bold; align: center; width: 100; color: white;value: Game Over!!!"
  visible="false"
></a-entity>
```

```
gameOver: function () {  
  var planeEl = document.querySelector("#plane_model");  
  var element = document.querySelector("#game_over_text");  
  element.setAttribute("visible", true);  
  planeEl.setAttribute("dynamic-body", {  
    mass: 1  
  });  
},
```

5. We learned when to call the 'gameOver' function.

```
isCollided: function (elemntId) {  
  var element = document.querySelector(elemntId);  
  element.addEventListener("collide", (e) => {  
    if (elemntId.includes("#ring")) {  
      element.setAttribute("visible", false);  
      this.updateScore();  
      this.updateTargets();  
    }  
    else {  
      this.gameOver();  
    }  
  });  
},
```

```
setInterval(()=> {  
  if (duration >=0) {  
    minutes = parseInt(duration / 60);  
    seconds = parseInt(duration % 60);  
  
    if (minutes < 10) {  
      minutes = "0" + minutes;  
    }  
    if (seconds < 10) {  
      seconds = "0" + seconds;  
    }  
  
    timerEl.setAttribute("text", {  
      value: minutes + ":" + seconds,  
    });  
  
    duration -= 1;  
  }  
  else {  
    this.gameOver();  
  }  
,1000)
```



We have successfully learned to use text in A-Frame and also learned about JavaScript timing events to show the timer clock in the virtual simulation scene.

What's NEXT?

In the next class, we will be learning how to create a virtual tour using entities.

EXTEND YOUR KNOWLEDGE:

You can refer to the below link to explore more about AFrame

<https://aframe.io/docs/1.1.0/introduction>