





#### What is our GOAL for this MODULE?

The goal of this module is to learn to use physics in A-Frame VR and also learn about the static and dynamic body of the physics system.

## What did we ACHIEVE in the class TODAY?

- We learned how to add physics in A-Frame VR.
- We learned to make bodies static and dynamic.
- We learned to control the physics system bodies in A-Frame VR.

# Which CONCEPTS/CODING BLOCKS did we cover today?

- Used https://cdn.jsdelivr.net/gh/n5ro/aframe physics-system@v4.0.1/dist/aframe-physics-system.min.js library.
- Used addEventListener(), querySelector(elementId), registerComponent().
- Used the setAttribute() method.



#### How did we DO the activities?

1. We learned how to add the physics system library

2. We learned how to make entities as static-body and dynamic-body.

```
//set the static body attribute of physics system
ringEl.setAttribute("static-body", {
   shape: "sphere",
   sphereRadius: 2
});
```

```
//set the static body of the physic system
birdEl.setAttribute("static-body", {
    shape: "sphere",
    sphereRadius: 5
})
```

```
<!-- Plane -->
<a-entity
  id="plane_model"
  gltf-model="#plane"
  position="0 0 15"
  scale="1 1 1"
  rotation="0 90 0"
  plane-rotation-reader
  dynamic-body
>
</a-entity>
```

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3. We learned how to keep the flight from falling because of gravity.

```
<!-- Plane -->
<a-entity
id="plane_model"
gltf-model="#plane"
position="0 0 15"
scale="1 1 1"
rotation="0 90 0"
plane-rotation-reader
dynamic-body="mass: 0"
>
</a-entity>
```

4. We learned how to register a component 'game-play' and add it to the plane entity.



```
<!-- Plane -->
<a-entity

id="plane_model"
gltf-model="#plane"
position="0 0 15"
scale="1 1 1"
rotation="0 90 0"
plane-rotation-reader
dynamic-body="mass: 0"
game-play
>
</a-entity>
```

5. We learned how to detect the collision.

```
isCollided: function(elementId) {
   const element = document.querySelector(elementId);
   element.addEventListener("collide", e => {
      if (elementId.includes("#ring")) {
        console.log(elementId+" collision");
      }
      else if(elementId.includes("#hurdle")){
        console.log(elementId+" collision");
      }
   });
}
```

```
update: function() {
  this.isCollided(this.data.elementId);
},
```

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```
ringEl.setAttribute("game-play", {
   elementId: `#${id}`
});
```

```
birdEl.setAttribute("game-play", {
   elementId: `#${id}`
});
```



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We have successfully learned about collision event-handling in A-Frame.

### What's NEXT?

In the next class, we will learn about JavaScript timing events to show the timer clock in the virtual simulation scene.

#### **EXTEND YOUR KNOWLEDGE:**

You can refer to the below link to explore more about AFrame https://aframe.io/docs/1.1.0/introduction