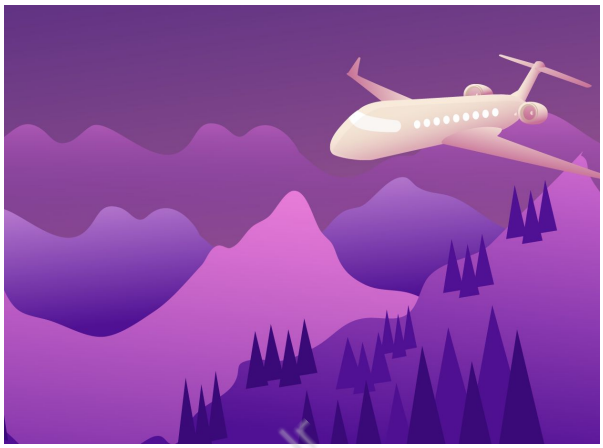
PRO-C154

A-FRAME DYNAMIC ENTITY



What is our GOAL for this MODULE?

The goal of this module is to create entities dynamically in the A-Frame scene when the program is running

What did we ACHIEVE in the class TODAY?

- We learned to create entities dynamically in the A-Frame scene.
- We learned to add basic shapes and models to the scene through components.
- We learned to animate the models added to the scene.
- We learned how to set single and multiple value attributes in the component.

Which CONCEPTS/CODING BLOCKS did we cover today?

- Used AFRAME.registerComponent (name, definition)
- window.addEventListener().
- Used the animation-mixer component in the setAttribute() method.

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How did we DO the activities?

1. We learned how to write our own functions in the component using the AFRAME.registerComponent().

```
// Registering component in Collider.js
AFRAME.registerComponent("flying-birds", {
  init: function () {

  },
  flyingBirds:() => {




  }

});
```

2. We learned how to add the gLTF model of bird through component.

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```
flyingBirds:() => {


  //creating the bird model entity
  var birdEl = document.createElement("a-entity");

  //Setting multiple attributes


  birdEl.setAttribute(
    "gltf-model",
    "./assets/models/flying_bird/scene.gltf"
  );


}
```

3. We learned how to keep the animation active for gLTF models using an animation mixer component

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```
flyingBirds:() => {



  //creating the bird model entity
  var birdEl = document.createElement("a-entity");


  birdEl.setAttribute("scale",{ x: 500,y: 500,z: 500 });

  birdEl.setAttribute(
    "gltf-model",
    "./assets/models/flying_bird/scene.gltf"
  );

  //animated models
  birdEl.setAttribute("animation-mixer",{});



}
```

4. We learned how to append the entity as a child of another entity in A-Frame DOM.

```
birdEl.setAttribute(
  "gltf-model",
  "./assets/models/flying_bird/scene.gltf"
);

//animated models
birdEl.setAttribute("animation-mixer",{});


//append the bird entity as the child of the terrain entity
terrainEl.appendChild(birdEl);
```

5. We learned how to create multiple entities using the for loop.

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```
// Registering component in Collider.js
AFRAME.registerComponent("flying-birds", {
  init: function () {
    for (var i = 1; i <= 20; i++) {
      //id
      var id = `hurdle${i}`;

      //position variables
      var posX = Math.floor(Math.random() * 3000 + -1000);
      var posY = Math.floor(Math.random() * 2 + -1);
      var posZ = Math.floor(Math.random() * 3000 + -1000);

      var position = { x: posX, y: posY, z: posZ };

      //call the function
      this.flyingBirds(id, position);
    }
  },
  flyingBirds: (id, position) => {
    //Get the terrain element
    var terrainEl = document.querySelector("#terrain");

    //creating the bird model entity
    var birdEl = document.createElement("a-entity");

    //Setting multiple attributes
    birdEl.setAttribute("id", id);

    birdEl.setAttribute("position", position);
    birdEl.setAttribute("scale", { x: 500, y: 500, z: 500 });

    birdEl.setAttribute("gltf-model", "./assets/models/flying_bird/scene.gltf");

    //animated models
    birdEl.setAttribute("animation-mixer", {});

    //append the bird entity as the child of the terrain entity
    terrainEl.appendChild(birdEl);
  }
});
```

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We have successfully added multiple entities through components in the scene.

What's NEXT?

In the next class, we will make the plane collide with rings and birds.

EXTEND YOUR KNOWLEDGE:

1. Explore more about A-Frame: https://aframe.io/docs/1.1.0/introduction.

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