Structure

ModelComponent

A component that contains a mesh and materials for the visual appearance of an entity.

iOS 13.0+ | iPadOS 13.0+ | Mac Catalyst 13.0+ | macOS 10.15+ | tvOS 26.0+ | visionOS

```
struct ModelComponent
```

Mentioned in

Creating a plane with low-level mesh

Overview

This component is a foundational component for all visual content in RealityKit. Use `ModelComponent` to render 3D models by attaching it to any `Entity` in your RealityKit scene.

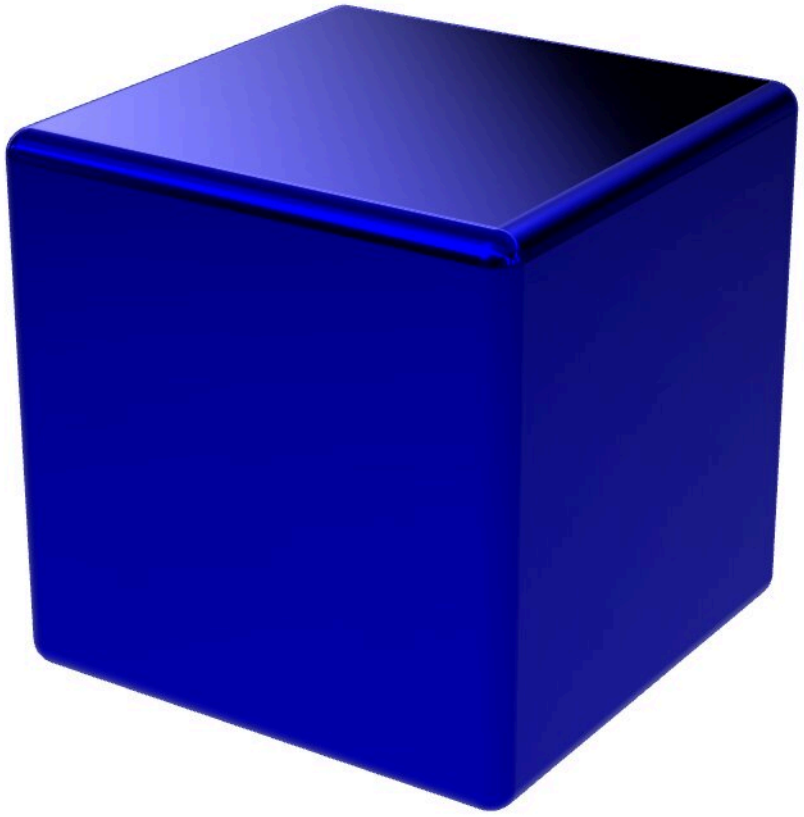
To create a `ModelComponent`, you need a mesh and the number of materials that mesh expects, which is typically one.

For example, here's how to create a simple blue, metallic box using `generateBox(size:cornerRadius:)`, and `SimpleMaterial`:

```
let mesh = MeshResource.generateBox(size: 1, cornerRadius: 0.05)
let material = SimpleMaterial(color: .blue, isMetallic: true)

let modelComponent = ModelComponent(mesh: mesh, materials: [material])

let entity = Entity()
entity.components.set(modelComponent)
```



Make different primitive shapes, like spheres with `generateSphere(radius:)`, or cylinders with `generateCylinder(height:radius:)`, or create custom shapes with `MeshDescriptor`. For more information about materials, see Applying realistic material and lighting effects to entities

Tip

To load a USDZ or reality file to your app, use an entity initializer such as `init(named:in:)` or `init(contentsOf:withName:)`.

Use other components like `CollisionComponent`, `PhysicsBodyComponent`, `PhysicsMotionComponent`, and `InputTargetComponent` to make entities interactive and dynamic.

Topics

Creating a model component

`init(mesh: MeshResource, materials: [any Material])`

Creates a model component from a mesh and a collection of materials.

Configuring a mesh

`var mesh: MeshResource`

The mesh that defines the model's shape.

Configuring the materials

`var materials: [any Material]`

The materials that define the model's visual appearance.

Modifying the bounding box for rendering

`var boundsMargin: Float`

A margin applied to an entity's bounding box that determines object visibility.

Relationships

Conforms To

`Component`, `Copyable`

See Also

Model display

`class` `MeshResource`

A high-level representation of a collection of vertices and edges that define a shape.

`class` `ModelEntity`

A representation of a physical object that RealityKit renders and optionally simulates.