API Collection

Audio

Create personalized and realistic spatial audio experiences.

Overview

Creating a compelling audio experience with RealityKit is as simple as playing audio on your existing RealityKit entities. Use RealityKit's default audio settings to create a personalized and realistic experience or utilize advanced customization options to tailor the audio for the needs of your application. Utilizing acoustic ray tracing and a personalized HRTF, RealityKit provides lifelike and high-quality sound.

You can load and configure audio with an `AudioResource` subclass, such as `AudioFileResource`, and adjust the spatial rendering with `SpatialAudioComponent`, `AmbientAudioComponent`, `ChannelAudioComponent`. Control the audio resource playback with `AudioPlaybackController`. For real-time audio playback you can prepare a `Audio.GeneratorRenderHandler` and control playback with `AudioGeneratorController`. You can control the playback levels of multiple resources at once with `AudioMixGroup` and `AudioMixGroupsComponent`.

Topics

Audio source components

{} Creating a Spaceship game

Build an immersive game using RealityKit audio, simulation, and rendering features.

`struct` `SpatialAudioComponent`

A component that configures how sounds emit from an entity into a person's environment.

`struct` `AmbientAudioComponent`

A component that configures the ambient rendering of sounds from an entity.

`struct` `ChannelAudioComponent`

A component that configures channel-based rendering of sounds from an entity.

Playback controllers

`class` `AudioPlaybackController`

A controller that manages an audio playback instance.

`class` `AudioGeneratorController`

A controller that manages the playback of a real-time audio stream.

`struct` `AudioGeneratorConfiguration`

A container for various settings for preparing and playing an AudioGeneratorController.

`enum` `AudioEvents`

Events associated with audio playback.

`struct` `PlayAudioAction`

An action which plays an audio resource on the given target entity.

Audio resources

`class` `AudioFileResource`

An audio resource that you load from a file or from a URL.

`class` `AudioFileGroupResource`

An audio file group.

`class` `AudioBufferResource`

An audio resource that you load from an `AVAudioBuffer`.

`struct` `AudioLibraryComponent`

A container for audio resources that you can look up by user-defined names.

`class` `AudioResource`

A playable audio resource

`struct` `Calibration`

A container for different calibration modes that can be applied for playback.

`struct Normalization`

Normalization adjusts the level of an audio file or buffer to be at a defined target.

Reverb

`struct Reverb`

The reverberation RealityKit applies to spatial audio sources.

`struct Preset`

Reverbs defined by a preset environment.

`struct ReverbComponent`

A component that defines the reverberation of spatial audio sources.

Audio mixing

`struct AudioMixGroup`

A group that manages the playback properties of multiple playing sounds.

`struct AudioMixGroupsComponent`

A component that provides functionality for controlling the playback of audio you assign to mix groups in a scene.

Audio types

`enum Audio`

A namespace for types that are used commonly in audio.

`typealias Decibel`

The unit for measuring intensity of sound on a logarithmic scale.

`enum Directivity`

The radiation pattern of sound emitted from an entity.

`enum DistanceAttenuation`

The different ways that audio intensity diminishes as the distance between the listener and the sound source increases.

See Also

Scene content

{} Hello World

Use windows, volumes, and immersive spaces to teach people about the Earth.

{} Enabling video reflections in an immersive environment

Create a more immersive experience by adding video reflections in a custom environment.

{} Creating a spatial drawing app with RealityKit

Use low-level mesh and texture APIs to achieve fast updates to a person's brush strokes by integrating RealityKit with ARKit and SwiftUI.

{} Generating interactive geometry with RealityKit

Create an interactive mesh with low-level mesh and low-level texture.

{} Combining 2D and 3D views in an immersive app

Use attachments to place 2D content relative to 3D content in your visionOS app.

{} Transforming RealityKit entities using gestures

Build a RealityKit component to support standard visionOS gestures on any entity.

{} Responding to gestures on an entity

Respond to gestures performed on RealityKit entities using input target and collision components.

Models and meshes

Display virtual objects in your scene with mesh-based models.

Materials, textures, and shaders

Apply textures to the surface of your scene's 3D objects to give each object a unique appearance.

Anchors

Lock virtual content to the real world.

Lights and cameras

Control the lighting and point of view for a scene.

- Content synchronization

  Synchronize the contents of entities locally or across the network.

- Videos

  Present videos in your RealityKit experiences.

- Images

  Present images and spatial scenes in your RealityKit experiences.