Vision / NormalizedPoint

Structure

NormalizedPoint

A point in a 2D coordinate system.

iOS 18.0+ | iPadOS 18.0+ | macOS 15.0+ | tvOS 18.0+ | visionOS 2.0+

```
struct NormalizedPoint
```

Topics

Creating a normalized point

`init(x: CGFloat, y: CGFloat)`

Creates a point object with the specified coordinates.

`init(normalizedPoint: CGPoint)`

Creates a point object from the specified Core Graphics point.

`init(imagePoint: CGPoint, in: CGSize)`

Creates a normalized point from a point in an image coordinate space.

`init(imagePoint: CGPoint, in: CGSize, normalizedTo: NormalizedRect)`

Creates a point normalized to a region of interest within an image.

`static var zero: NormalizedPoint`

A point object that represents the origin.

Inspecting a normalized point

`let cgPoint: CGPoint`

The Core Graphics point for this point.

`var x: CGFloat`

The x-coordinate.

`var y: CGFloat`

The y-coordinate.

Converting points

`func toImageCoordinates(from: NormalizedRect, imageSize: CGSize, origin: CoordinateOrigin) -> CGPoint`

Converts a point normalized to a region within an image into full image coordinates.

`func toImageCoordinates(CGSize, origin: CoordinateOrigin) -> CGPoint`

Converts a point in normalized coordinates into image coordinates.

Flipping a normalized point

`func verticallyFlipped() -> NormalizedPoint`

Returns a normalized point with the origin flipped between the top and bottom of the image.

Relationships

Conforms To

```
CustomStringConvertible
Decodable
Encodable
Equatable
Hashable
Sendable
SendableMetatype
```

See Also

Image locations and regions

`struct NormalizedRect`

The location and dimensions of a rectangle.

`typealias NormalizedRegion`

A polygon composed of normalized points.

`struct NormalizedCircle`

The center point and radius of a 2D circle.

`protocol BoundingBoxProviding`

A protocol for objects that have a bounding box.

`protocol BoundingRegionProviding`

A protocol for objects that have a defined boundary in an image.

`protocol QuadrilateralProviding`

A protocol for objects that have a bounding quadrilateral.

`enum CoordinateOrigin`

The origin of a coordinate system relative to an image.