Protocol

Generable

A type that the model uses when responding to prompts.

iOS 26.0+ | iPadOS 26.0+ | Mac Catalyst 26.0+ | macOS 26.0+ | visionOS 26.0+

```
protocol Generable : ConvertibleFromGeneratedContent, ConvertibleToGenerated
Content
```

Mentioned in

- Categorizing and organizing data with content tags
- Generating Swift data structures with guided generation

Overview

Annotate your Swift structure or enumeration with the `Generable` macro to allow the model to respond to prompts by generating an instance of your type. Use the `Guide` macro to provide natural language descriptions of your properties, and programmatically control the values that the model can generate.

```
@Generable
struct SearchSuggestions {
    @Guide(description: "A list of suggested search terms.", .count(4))
    var searchTerms: [SearchTerm]
    @Generable
    struct SearchTerm {
        // Use a generation identifier for data structures the framework generates.
        var id: GenerationID
        @Guide(description: "A two- or three- word search term, like 'Beautiful suns
```

```
        var searchTerm: String
    }
}
```

For every `Generable` type in a request, the framework converts its type and format information to a JSON schema and provides it to the model. This contributes to the available context window size. If the `LanguageModelSession` exceeds the available context size, it throws `LanguageModelSession.GenerationError.exceededContextWindowSize(_:)`. To reduce the size of your generable type:

- Reduce the complexity of your `Generable` type by evaluating whether properties are necessary to complete the task.
- Give your properties short and clear names.
- Use `Guide(description:)` on properties only when it improves response quality.
- Add a `Guide(description:_:)` with `maximumCount(_:)` to reduce token usage.

If the `Generable` type includes properties with clear names the model may have all it needs to generate your type, eliminating the need of `Guide(description:)`. For more information on managing the context window size, see TN3193: Managing the on-device foundation model's context window.

Topics

Defining a generable type

`macro Generable(description: String?)`

Conforms a type to `Generable` protocol.

Creating a guide

`macro Guide(description: String)`

Allows for influencing the allowed values of properties of a `Generable` type.

`macro Guide(description:_:)`

Allows for influencing the allowed values of properties of a `Generable` type.

`struct GenerationGuide`

Guides that control how values are generated.

Getting the schema

`static var generationSchema: GenerationSchema`

An instance of the generation schema.

Required

`struct GenerationSchema`

A type that describes the properties of an object and any guides on their values.

Generating a unique identifier

`struct GenerationID`

A unique identifier that is stable for the duration of a response, but not across responses.

Converting to partially generated

`func asPartiallyGenerated() -> Self.PartiallyGenerated`

The partially generated type of this struct.

`associatedtype PartiallyGenerated : ConvertibleFromGeneratedContent = Self`

A representation of partially generated content

Required Default implementation provided.

Generate dynamic shemas

`struct DynamicGenerationSchema`

The dynamic counterpart to the generation schema type that you use to construct schemas at runtime.

Relationships

Inherits From

`ConvertibleFromGeneratedContent`
`ConvertibleToGeneratedContent`

`InstructionsRepresentable`
`PromptRepresentable`
`SendableMetatype`

Conforming Types

`GeneratedContent`

See Also

Guided generation

- Generating Swift data structures with guided generation
  Create robust apps by describing output you want programmatically.