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Function

vDSP_biquad_CreateSetup

Builds a data structure that contains precalculated data for use by a single-precision cascaded biquadratic filter function.

iOS 6.0+ | iPadOS 6.0+ | Mac Catalyst 13.1+ | macOS 10.9+ | tvOS | visionOS 1.0+ | watchOS 2.0+

```
extern vDSP_biquad_Setup vDSP_biquad_CreateSetup(const double * __Coefficients, vDSP_Length __M);
```

Parameters

`__Coefficients`

The input array that contains the double-precision filter coefficients. The number of elements in the coefficients array must be five times the number of sections in the biquad filter.

`__M`

The number of sections in the biquad filter.

Return Value

A pointer to an allocated and initialized biquadratic filter object.

Discussion

This function constructs and returns a biquadratic filter object from the coefficients that you specify.

You define the `__Coefficients` array as a series of sections with each containing a set of five coefficients. Specify the order of the coefficients as three feedforward coefficients followed by two

feedback coefficients.

The following code shows an example of creating a biquad setup object that contains two sections:

```
let section0 = (b0: 0.984764420,  
                b1: -1.969528840,  
                b2: 0.984764420,  
                a1: -1.969331359,  
                a2: 0.969726321)  
  
let section1 = (b0: 0.984764420,  
                b1: -1.969528840,  
                b2: 0.984764420,  
                a1: -1.955243388,  
                a2: 0.969726321)  
  
let sectionCount = vDSP_Length(2)  
  
let setup = vDSP_biquad_CreateSetup([  
    section0.b0, section0.b1, section0.b2, section0.a1, section0.a2,  
    section1.b0, section1.b1, section1.b2, section1.a1, section1.a2  
],  
                                     sectionCount)
```

This function allocates memory for its own use. You must call the [vDSP_biquad_DestroySetup](#) function to free the allocated memory.

See Also

Creating a single-channel biquadratic filter setup

`typedef vDSP_biquad_Setup`

A data structure that contains precalculated data for use by the single-precision cascaded biquadratic IIR filter function.

`vDSP_biquad_CreateSetupD`

Builds a data structure that contains precalculated data for use by a double-precision cascaded biquadratic filter function.

`typedef vDSP_biquad_SetupD`

A data structure that contains precalculated data for use by the double-precision cascaded biquadratic IIR filter function.