BlockOptions package

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Introduction

The BlockOptions package provides a dynamic scoping construct which makes local any changes to the `Options` values associated with one or more symbols. This is useful for temporarily modifying the default option values for a symbol without having these changes affect the rest of the *Mathematica* session. The capability provided here differs from that of the traditional *Mathematica* `Block` construct, which makes local *all* definitions associated with a symbol and hides the global values.
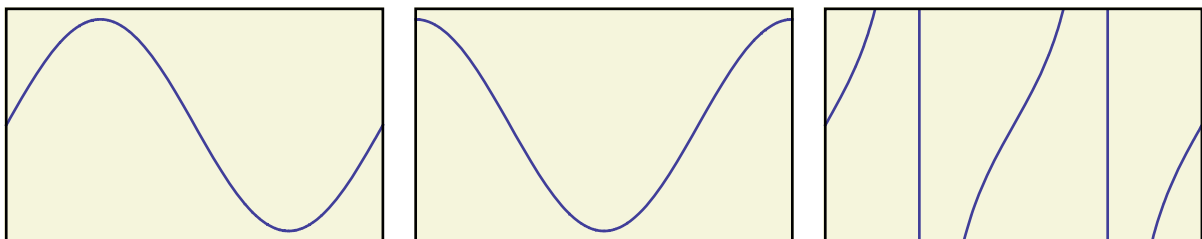
Usage

`BlockOptions[{` *symbol1*, *symbol2*, ... `}`, *body*`]`	Evaluates *body*, making local any changes to the `Options` values for *symbol1*, *symbol2*, ...
`WithOptions[{ {`*symbol1*, `{` *option1* −> *value1*, ... `}}`, `{`*symbol2*, `{` *option1* −> *value1*, ... `}}`, ... `}`, *body*`]`	Evaluates *body*, making local any changes to the `Options` values for *symbol1*, *symbol2*, ..., and calls `SetOptions` to set new default values for the options for those symbols.

Options scoping construct.

As an example, we use `BlockOptions` to make several plots in a desired style without affecting the global defaults for `Plot`.
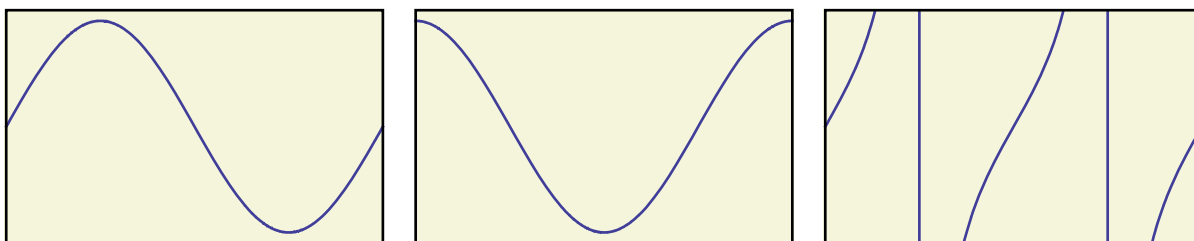
```
PlotList = BlockOptions[
    {Plot},
    SetOptions[Plot,
     Axes → False, Frame → True,
     PlotRange → {{0, 2 * Pi}, {-1.1, 1.1}},
     FrameTicks → None,
     Background → RGBColor[0.96, 0.96, 0.86]
    ];
    {Plot[Sin[x], {x, 0, 2 * Pi}], Plot[Cos[x], {x, 0, 2 * Pi}], Plot[Tan[x], {x, 0, 2 * Pi}]}
    ];
Show[GraphicsRow[PlotList], ImageSize → 450]
```


We now modify this example to demonstrate `WithOptions` to make several plots in a desired style without affecting the global defaults for `Plot`. However, the primary intended purpose of `WithOptions` is for internal use in

larger *Mathematica* packages, where it may be used to temporarily reset the default option values for several functions simultaneously.

```
PlotList = WithOptions[
  {
   {
    Plot, {Axes → False, Frame → True, PlotRange → {{0, 2 * Pi}, {-1.1, 1.1}},
      FrameTicks → None, Background → RGBColor[0.96, 0.96, 0.86]}
   }
  },
  {Plot[Sin[x], {x, 0, 2 * Pi}], Plot[Cos[x], {x, 0, 2 * Pi}], Plot[Tan[x], {x, 0, 2 * Pi}]}
 ];
Show[GraphicsRow[PlotList], ImageSize → 450]
```


Technical notes

`BlockOptions` properly saves and restores the global options values for symbols even if they have the attribute `Protected`.

`BlockOptions` handles aborts generated during evaluation of *body* gracefully. It restores all saved global option values before then propagating the abort and returning the value `$Aborted`.

This package requires *Mathematica* version 6 or above.

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