Create or edit optimization options structure

Syntax

```
options = optimset('param1',value1,'param2',value2,...)
optimset
options = optimset
options = optimset(optimfun)
options = optimset(oldopts,'param1',value1,...)
options = optimset(oldopts,newopts)
```

Description

The function `optimset` creates an `options` structure that you can pass as an input argument to the following four MATLAB® optimization functions:

- `fminbnd`
- `fminsearch`
- `fzero`
- `lsqnonneg`

You can use the `options` structure to change the default parameters for these functions.

> **Note** If you have an Optimization Toolbox™ license, you can also use `optimset` to create an expanded `options` structure containing additional options specifically designed for the functions provided in that toolbox. For more information about these additional options, see the reference page for the enhanced Optimization Toolbox `optimset` function.

`options = optimset('param1',value1,'param2',value2,...)` creates an optimization options structure called `options`, in which the specified parameters (`param`) have specified values. Any unspecified parameters are set to `[]` (parameters with value `[]` indicate to use the default value for that parameter when `options` is passed to the optimization function). It is sufficient to type only enough leading characters to define the parameter name uniquely. Case is ignored for parameter names.

`optimset` with no input or output arguments displays a complete list of parameters with their valid values.

`options = optimset` (with no input arguments) creates an options structure `options` where all fields are set to `[]`.

`options = optimset(optimfun)` creates an options structure `options` with all parameter names and default values relevant to the optimization function `optimfun`.

`options = optimset(oldopts,'param1',value1,...)` creates a copy of `oldopts`, modifying the specified parameters with the specified values.

`options = optimset(oldopts,newopts)` combines an existing options structure `oldopts` with a new options structure `newopts`. Any parameters in `newopts` with nonempty values overwrite the corresponding old parameters in `oldopts`.

Options

The following table lists the available options for the MATLAB optimization functions.

Option	Value	Description	Solvers
`Display`	`'off'|'iter'|{'final'}|'notify'`	Level of display. `'off'` displays no output; `'iter'` displays output at each iteration (not available for `lsqnonneg`); `'final'` displays just the final output; `'notify'` displays output only if the function does not converge.	`fminbnd`, `fminsearch`,`fzero`, `lsqnonneg`
`FunValCheck`	`{'off'}|'on'`	Check whether objective function values are valid. `'on'` displays an error when the objective function returns a value that is	`fminbnd`, `fminsearch`,`fzero`

		`complex` or `NaN`. `'off'` displays no error.	
`MaxFunEvals`	positive integer	Maximum number of function evaluations allowed.	`fminbnd`, `fminsearch`
`MaxIter`	positive integer	Maximum number of iterations allowed.	`fminbnd`, `fminsearch`
`OutputFcn`	function | {[]}	User-defined function that an optimization function calls at each iteration. See Output Functions.	`fminbnd`, `fminsearch`,`fzero`
`PlotFcns`	function | {[]}	User-defined or built-in plot function that an optimization function calls at each iteration. Built-in functions: ▪ `@optimplotx` plots the current point ▪ `@optimplotfval` plots the function value ▪ `@optimplotfunccount` plots the function count (not available for `fzero`) See Plot Functions.	`fminbnd`, `fminsearch`,`fzero`
`TolFun`	positive scalar	Termination tolerance on the function value. See Tolerances and Stopping Criteria.	`fminsearch`
`TolX`	positive scalar	Termination tolerance on *x*, the current point. See Tolerances and Stopping Criteria.	`fminbnd`, `fminsearch`,`fzero`, `lsqnonneg`

Examples

This statement creates an optimization options structure called `options` in which the `Display` parameter is set to `'iter'` and the `TolFun` parameter is set to `1e-8`.

```
options = optimset('Display','iter','TolFun',1e-8)
```

This statement makes a copy of the options structure called `options`, changing the value of the `TolX` parameter and storing new values in `optnew`.

```
optnew = optimset(options,'TolX',1e-4);
```

This statement returns an optimization options structure that contains all the parameter names and default values relevant to the function `fminbnd`.

```
optimset('fminbnd')
```

See Also

`fminbnd` | `fminsearch` | `fzero` | `lsqnonneg` | `optimget` | `optimset`

Introduced before R2006a