NAME

CUTEST_cisgrp − CUTEst tool to evaluate the sparsity pattern of the gradient of a problem function.

SYNOPSIS

CALL CUTEST_cisgrp(status, n, iprob, nnzg, lg, G_var)

For real rather than double precision arguments, instead

CALL CUTEST_cisgrp_s(...)

DESCRIPTION

The CUTEST_cisgrp subroutine evaluates the sparsity pattern of the gradient of either the objective function or a constraint function of the problem decoded from a SIF file by the script *sifdecoder*, in the constrained minimization case. The problem under consideration is to minimize or maximize an objective function $f(x)$ over all $x \in R^n$ subject to general equations$c_i(x) = 0$, $(i \in 1, \ldots, m_E)$, general inequalities $c_i^l \leq c_i(x) \leq c_i^u$, $(i \in m_E + 1, \ldots, m)$, and simple bounds $x^l \leq x \leq x^u$. The objective function is group-partially separable and all constraint functions are partially separable.

ARGUMENTS

The arguments of CUTEST_cisgrp are as follows

status [out] - integer
the outputr status: 0 for a succesful call, 1 for an array allocation/deallocation error, 2 for an array bound error, 3 for an evaluation error,

n [in] - integer
the number of variables for the problem,

iprob [in] - integer
the number of the problem function to be considered. If iprob = 0, the value of the objective function will be evaluated, while if iprob = i > 0, that of the i-th constraint will be evaluated,

nnzg [out] - integer
the number of nonzeros in G_var,

lg [in] - integer
the declared length of G_var,

G_var [out] - integer
an array whose i-th component is the unique index of a variable within the sparsity pattern of the gradient.

AUTHORS

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SEE ALSO

CUTEst: a Constrained and Unconstrained Testing Environment with safe threads,
N.I.M. Gould, D. Orban and Ph.L. Toint,
Computational Optimization and Applications **60**:3, pp.545-557, 2014.

CUTEr (and SifDec): A Constrained and Unconstrained Testing Environment, revisited,
N.I.M. Gould, D. Orban and Ph.L. Toint,
ACM TOMS, **29**:4, pp.373-394, 2003.

CUTE: Constrained and Unconstrained Testing Environment,
I. Bongartz, A.R. Conn, N.I.M. Gould and Ph.L. Toint,
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sifdecoder(1), cutest_cigr(3), cutest_cisgr(3)