NAME

UGRDH – CUTEr tool to evaluate the gradient and Hessian matrix.

SYNOPSIS

CALL UGRDH(N, X, G, LH1, H)

DESCRIPTION

The UGRDH subroutine evaluates the gradient and Hessian matrix of the objective function of the problem decoded into OUTSDIF.d at the point X in the case where the only possible constraints are bound constraints. This Hessian matrix is stored as a dense matrix.

ARGUMENTS

The arguments of UGRDH are as follows

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

X [in] - real/double precision
an array which gives the current estimate of the solution of the problem,

G [out] - real/double precision
an array which gives the value of the gradient of the objective function evaluated at X,

LH1 [in] - integer
the actual declared size of the leading dimension of H (with LH1 no smaller than N),

H [out] - real/double precision
a two-dimensional array which gives the value of the Hessian matrix of the objective function evaluated at X.

NOTE

Calling this routine is more efficient than separate calls to UGR and UDH.

AUTHORS

I. Bongartz, A.R. Conn, N.I.M. Gould, D. Orban and Ph.L. Toint

SEE ALSO

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, TOMS, **21**:1, pp.123-160, 1995.

cgrdh(3M).