

EXPFUN

Mk function: @(x)hessf(x)

x0 = [-1.20 ; 1.00]

.. #	0: R=	NaN	f(x)=	2.2868	x(1)=	-1.2	x(2)=	1	step=	NaN	crate=	NaN	gradf =	2.1668
NF #	1: R=	0.15251	f(x)=	1.5787	x(1)=	1.5331	x(2)=	0	step=	1	crate=	NaN	gradf =	0.91096
Nr #	2: R=	0.08508	f(x)=	1.2404	x(1)=	-1.1437	x(2)=	0	step=	0.5	crate=	NaN	gradf =	0.81564
Nr #	3: R=	0.16736	f(x)=	0.69594	x(1)=	0.074717	x(2)=	0	step=	0.5	crate=	0.45517	gradf =	0.074579
NF #	4: R=	0.49722	f(x)=	0.69315	x(1)=	-0.00027839	x(2)=	0	step=	1	crate=	0.061554	gradf =	0.00027839
NF #	5: R=	0.5	f(x)=	0.69315	x(1)=	1.4384e-11	x(2)=	0	step=	1	crate=	0.0037121	gradf =	1.4384e-11

Mk function: @(x)hessf(x)

Hessian approximation at last iterate (rank = 2, condition = 2, eigenvalues = (1, 2)):

1	0
0	2

Hessian (exact) at last iterate (rank = 2, condition = 2, eigenvalues = (1, 2)):

1	0
0	2

x0 = [-1.20 ; 1.00]
x = [0.00000000 ; 0.00000000]
f(x) = 0.69314718
#it = 5 #f = 18 #gradf = 6 #hessf = 5

Mk function: @(x)diag(diag(hessf(x)))

x0 = [-1.20 ; 1.00]

.. #	0: R=	NaN	f(x)=	2.2868	x(1)=	-1.2	x(2)=	1	step=	NaN	crate=	NaN	gradf =	2.1668
NF #	1: R=	0.15251	f(x)=	1.5787	x(1)=	1.5331	x(2)=	0	step=	1	crate=	NaN	gradf =	0.91096
Nr #	2: R=	0.08508	f(x)=	1.2404	x(1)=	-1.1437	x(2)=	0	step=	0.5	crate=	NaN	gradf =	0.81564
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Mk function: @(x)diag(diag(hessf(x)))

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Hessian (exact) at last iterate (rank = 2, condition = 2, eigenvalues = (1, 2)):

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x0 = [-1.20 ; 1.00]
x = [0.00000000 ; 0.00000000]
f(x) = 0.69314718
#it = 5 #f = 18 #gradf = 6 #hessf = 5

Mk function: @(x)hessf(x0)

x0 = [-1.20 ; 1.00]

.. #	0: R=	NaN	f(x)=	2.2868	x(1)=	-1.2	x(2)=	1	step=	NaN	crate=	NaN	gradf =	2.1668
NF #	1: R=	0.15251	f(x)=	1.5787	x(1)=	1.5331	x(2)=	0	step=	1	crate=	NaN	gradf =	0.91096
NF #	2: R=	0.15251	f(x)=	1.5066	x(1)=	-1.4534	x(2)=	0	step=	1	crate=	NaN	gradf =	0.89637
Nr #	3: R=	0.15251	f(x)=	0.69327	x(1)=	0.015931	x(2)=	0	step=	0.5	crate=	0.49199	gradf =	0.015929
Nr #	4: R=	0.15251	f(x)=	0.6932	x(1)=	-0.010181	x(2)=	0	step=	0.5	crate=	0.017771	gradf =	0.010181
Nr #	5: R=	0.15251	f(x)=	0.69317	x(1)=	0.0065076	x(2)=	0	step=	0.5	crate=	0.63913	gradf =	0.0065075
Nr #	6: R=	0.15251	f(x)=	0.69316	x(1)=	-0.0041597	x(2)=	0	step=	0.5	crate=	0.63919	gradf =	0.0041597
Nr #	7: R=	0.15251	f(x)=	0.69315	x(1)=	0.002659	x(2)=	0	step=	0.5	crate=	0.63922	gradf =	0.002659
Nr #	8: R=	0.15251	f(x)=	0.69315	x(1)=	-0.0016997	x(2)=	0	step=	0.5	crate=	0.63923	gradf =	0.0016997
Nr #	9: R=	0.15251	f(x)=	0.69315	x(1)=	0.0010865	x(2)=	0	step=	0.5	crate=	0.63923	gradf =	0.0010865
Nr #	10: R=	0.15251	f(x)=	0.69315	x(1)=	-0.00069455	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	0.00069455
Nr #	11: R=	0.15251	f(x)=	0.69315	x(1)=	0.00044398	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	0.00044398
Nr #	12: R=	0.15251	f(x)=	0.69315	x(1)=	-0.00028381	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	0.00028381
Nr #	13: R=	0.15251	f(x)=	0.69315	x(1)=	0.00018142	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	0.00018142
Nr #	14: R=	0.15251	f(x)=	0.69315	x(1)=	-0.00011597	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	0.00011597
Nr #	15: R=	0.15251	f(x)=	0.69315	x(1)=	7.4133e-05	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	7.4133e-05
Nr #	16: R=	0.15251	f(x)=	0.69315	x(1)=	-4.7389e-05	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	4.7389e-05
Nr #	17: R=	0.15251	f(x)=	0.69315	x(1)=	3.0293e-05	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	3.0293e-05
Nr #	18: R=	0.15251	f(x)=	0.69315	x(1)=	-1.9364e-05	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	1.9364e-05
Nr #	19: R=	0.15251	f(x)=	0.69315	x(1)=	1.2378e-05	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	1.2378e-05
Nr #	20: R=	0.15251	f(x)=	0.69315	x(1)=	-7.9126e-06	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	7.9126e-06
Nr #	21: R=	0.15251	f(x)=	0.69315	x(1)=	5.058e-06	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	5.058e-06
Nr #	22: R=	0.15251	f(x)=	0.69315	x(1)=	-3.2333e-06	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	3.2333e-06
Nr #	23: R=	0.15251	f(x)=	0.69315	x(1)=	2.0668e-06	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	2.0668e-06
Nr #	24: R=	0.15251	f(x)=	0.69315	x(1)=	-1.3212e-06	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	1.3212e-06
Nr #	25: R=	0.15251	f(x)=	0.69315	x(1)=	8.4456e-07	x(2)=	0	step=	0.5	crate=	0.63924	gradf =	8.4456e-07

Mk function: @(x)hessf(x0)

Hessian approximation at last iterate (rank = 2, condition = 6.556947e+00, eigenvalues = (0.30502, 2)):

0.305019996207409	0
0	2

Hessian (exact) at last iterate (rank = 2, condition = 2.000000e+00, eigenvalues = (1, 2)):

0.999999999999287	0
0	2

x0 = [-1.20 ; 1.00]
x = [0.00000004 ; 0.00000000]
f(x) = 0.69314718
#it = 25 #f = 99 #gradf = 26 #hessf = 25