

## Appendix C: Screenshots from COTester

### Example of an NLP problem formulated with GUI

MINLP Problem Creation - C:\Documents and Settings\Yidong\My Documents\My DATA\CAPE-OPEN\From Michel\Tester\CO...

	X1	X2	X3	Y1	Y2	Y3	Log(X2+1)	Log(X1-X2+)	Constant	Type
OF	0	0	-7	5	6	7	18.0	19.2	10	Min

  

	X1	X2	X3	Y1	Y2	Y3	Log(X2+1)	Log(X1-X2+)	LB	UB
C1	0	0	-8	0	0	0	0.8	0.96	-Inf	0
C2	0	0	-1	0	0	-2	1	1.2	-Inf	2
C3	-1	1	0	0	0	0	0	0	-Inf	0
C4	0	1	0	1	-2	0	0	0	-Inf	0
C5	1	-1	0	0	-2	0	0	0	-Inf	0
C6	0	0	0	1	1	0	0	0	-Inf	1

  

	X1	X2	X3	Y1	Y2	Y3
Integer	False	False	False	False	False	False
LowerBound	2	0	-Inf	0.1	0.2	0.3
UpperBound	4	2	3	1.1	1.2	1.3

Load Save Launch Clear

## Screenshots from COTester for the NLP

**MINLP Solver Tester**

Registration: CAPE-OPEN MIILP Tester

Basic:

- GCOIpopWrapper\_v6.CapeMINLPSolverManager.
- GCOIpopWrapper\_NET.CapeMINLPSolverManag.
- GCOWrapper.CapeMINLPSolverManager.1
- GCOIpopWrapper.CapeMINLPSolverManager.1

Integration:

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Reports:

MINLP Solver ProgID: GCOIpopWrapper\_NET.CapeMINL

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**MINLP Solver Tester**

Registration: MIILP Solver

Basic:

	Is supported ?
IUnknown	YES
IDispatch	YES
ICapeIdentification	YES
ICapeMINLPSolverManager	YES
ICapeNumericSolver	YES

Integration:  All needed interfaces are implemented

Reports:

MINLP Solver ProgID: GCOIpopWrapper\_NET.CapeMINL

**MINLP Solver Tester**

Registration: MIILP Solver

Basic:

	Is supported ?
IUnknown	YES
IDispatch	YES
ICapeIdentification	YES
ICapeMINLPSolverManager	YES
ICapeNumericSolver	YES

Integration:  All needed interfaces are implemented

Reports:

MINLP Solver ProgID: GCOIpopWrapper\_NET.CapeMINL

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**MINLP Solver Tester**

Registration: Solver Side **Problem Side**

Basic:

	Is called ?
CreateMINLPSystem	Yes
Solve	Yes

Reports:

MINLP Solver ProgID: GCOIpopWrapper\_NET.CapeMINL

**MINLP Solver Tester**

Solver Side **Problem Side**

	Counted calls
GetMINLPSize	2
GetMINLPStructure	2
GetMINLPVariableNames	0
GetMINLPVariableTypes	2
GetMINLPVariableBounds	2
GetMINLPVariableValues	1
SetMINLPVariableValues	81
GetMINLPVariableBoolean	0
GetMINLPVariableIntegerA	0
GetMINLPVariableDoubleA	0
GetMINLPVariableStringAtt	0

Launch TEST

MINLP Solver ProgID `GCOIpopWrapper_NET.CapeMINL`

**MINLP Solver Tester**

Solver Side **Problem Side**

	Counted calls
GetMINLPNonlinearObjecti	16
GetMINLPObjectiveFunctio	17
GetMINLPObjectiveFunctio	0
GetMINLPObjectiveFunctio	0
GetMINLPObjectiveFunctio	0
GetMINLPObjectiveFunctio	0
SetMINLPLagrangeMultipli	16
GetMINLPLagrangeMultipli	0
SetMINLPHessianValues	16
GetMINLPHessianStructure	1
GetMINLPHessianValues	16

Launch TEST

MINLP Solver ProgID `GCOIpopWrapper_NET.CapeMINL`