



Report(2)

Lab 305

Done By: Saeed Basaham
For: Mr.Haitham Hasan
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Ex 1

```
\\ccse-xeon\home\st235063\gamsdir\projdir\Untitled_4.gms
Untitled_4.gms
variables x,y,z,work2;
equations obj, k1,k2,k3 ;
obj.. work2=+(x+3)*(x+3)*(y*y)*(z*z);
k1.. 2*x+y=1=30;
k2.. x+y=20;
k3.. z=4;
model hw2 /all/
solve hw2 using nlp minimizing work2;
display x.l, y.l, work2.l;
```

(1) The Coding Model's Print Screen

0 INFEASIBLE
0 UNBOUNDED
0 ERRORS

GAMS Rev 149 x86/MS Windows 05/02/09 15:2
General Algebraic Modeling System
Execution

| | | |
|------------------|---|-------------|
| 9 VARIABLE x.L | = | -3.000 |
| VARIABLE y.L | = | 23.000 |
| VARIABLE work2.L | = | 2.95856E-22 |

EXECUTION TIME = 0.016 SECONDS 2 Mb WIN226-149 Dec

(2) The Result's Print Screen Using Baron-NLP Solver

0 INFEASIBLE
0 UNBOUNDED
0 ERRORS

GAMS Rev 149 x86/MS Windows 05/02/09 15:4
General Algebraic Modeling System
Execution

| | | |
|------------------|---|--------|
| 9 VARIABLE x.L | = | -3.000 |
| VARIABLE y.L | = | 23.000 |
| VARIABLE work2.L | = | 0.000 |

EXECUTION TIME = 0.047 SECONDS 2 Mb WIN226-149 Dec

(3) The Result's Print Screen Using COINCBC-LP Solver

0 INFEASIBLE
0 UNBOUNDED
0 ERRORS

GAMS Rev 149 x86/MS Windows 05/02/09 15:5
General Algebraic Modeling System
Execution

| | | |
|------------------|---|------------|
| 9 VARIABLE x.L | = | 10.000 |
| VARIABLE y.L | = | 10.000 |
| VARIABLE work2.L | = | 270400.000 |

EXECUTION TIME = 0.032 SECONDS 2 Mb WIN226-149 Dec

(4) The Result's Print Screen Using OQNLP-NLP Solver

EX 2

```
\\ccse-xeon\home\st235063\gamsdir\projdir\Untitled_5.gms
Untitled_4.gms  Untitled_4.lst  Untitled_5.gms  Untitled_5.lst

variables x,y,work3;
equations obj, k1,k2;
obj..work3=e*x*x*(y+1)*(y+1);
k1.. 3*x+5*y=100;
k2.. 2*y=30;

model hw2 /all/
solve hw2 using nlp maximizing work3;
display x.l , y.l , work3.l;
```

(1) The Coding Model's Print Screen

The screenshot shows the GAMS software interface. On the left is a tree view with the following items: Compilation, Equation Listing, Column Listing, Column, Model Statistics, Solution Report, SolEQ, SolVAR, Execution, Display, x, y, and work3. The main window displays the following text:

```
0 INFEASIBLE
0 UNBOUNDED
0 ERRORS
GAMS Rev 149 x86/MS Windows 05/02/09 16:2
General Algebraic Modeling System
Execution
-----
9 VARIABLE x.L = -6.9913E+11
VARIABLE y.L = -2.8189E+11
VARIABLE work3.L = 7.65422E+69
EXECUTION TIME = 0.016 SECONDS 2 Mb WIN226-149 Dec
```

(2) The Result's Print Screen Using Baron-NLP Solver

The screenshot shows the GAMS software interface. On the left is a tree view with the following items: Compilation, Equation Listing, Column Listing, Column, Model Statistics, Solution Report, SolEQ, SolVAR, Execution, Display, x, y, and work3. The main window displays the following text:

```
0 INFEASIBLE
0 UNBOUNDED
0 ERRORS
GAMS Rev 149 x86/MS Windows 05/02/09 16:2
General Algebraic Modeling System
Execution
-----
9 VARIABLE x.L = 0.000
VARIABLE y.L = 0.000
VARIABLE work3.L = 0.000
EXECUTION TIME = 0.031 SECONDS 2 Mb WIN226-149 Dec
```

(3) The Result's Print Screen Using COINCBC-LP Solver

The screenshot shows the GAMS software interface. On the left is a tree view with the following items: Compilation, Equation Listing, Column Listing, Column, Model Statistics, Solution Report, SolEQ, SolVAR, Execution, Display, x, y, and work3. The main window displays the following text:

```
0 INFEASIBLE
0 UNBOUNDED
0 ERRORS
GAMS Rev 149 x86/MS Windows 05/02/09 16:1
General Algebraic Modeling System
Execution
-----
9 VARIABLE x.L = -34991.876
VARIABLE y.L = -285781.706
VARIABLE work3.L = 1.00000E+30
EXECUTION TIME = 0.031 SECONDS 2 Mb WIN226-149 Dec
```

(4) The Result's Print Screen Using OQNLP-NLP Solver

Comment:

Using different solvers, gives different results. and for ex.2 , using The Result's Using COINCBC-LP Solver ,this solver is having high variation , but I think as more data analyzed more accurate and common solutions for all solvers will be appeared.