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CAPTURAS EN R DEL PROCEDIMIENTO DE PONER LOS DATOS DEL PROBLEMA

```
> library(lpSolveAPI)
> modelo <- make.lp(0, 5)
> modelo
Model name:
            C1    C2    C3    C4    C5
Minimize     0     0     0     0     0
Kind       Std   Std   Std   Std   Std
Type      Real  Real  Real  Real  Real
Upper      Inf   Inf   Inf   Inf   Inf
Lower        0     0     0     0     0
```

```
> set.objfn(modelo, c(634,560,570,704,812))
> modelo
Model name:
            C1    C2    C3    C4    C5
Minimize   634   560   570   704   812
Kind       Std   Std   Std   Std   Std
Type      Real  Real  Real  Real  Real
Upper      Inf   Inf   Inf   Inf   Inf
Lower        0     0     0     0     0
```

```
> add.constraint(modelo, c(1,0,0,0,0),">=",36)
> add.constraint(modelo, c(0,1,1,0,0),">=",45)
> add.constraint(modelo, c(0,0,0,1,1),">=",10)
> modelo
Model name:
            C1    C2    C3    C4    C5
Minimize   634   560   570   704   812
R1           1     0     0     0     0  >=  36
R2           0     1     1     0     0  >=  45
R3           0     0     0     1     1  >=  10
Kind       Std   Std   Std   Std   Std
Type      Real  Real  Real  Real  Real
Upper      Inf   Inf   Inf   Inf   Inf
Lower        0     0     0     0     0
> add.constraint(modelo, c(10,8,0,8,0),"<=",480)
> add.constraint(modelo, c(0,0,6,0,10),"<=",480)
> add.constraint(modelo, c(6,10,0,16,3),"<=",480)
> add.constraint(modelo, c(3,0,9,0,8),"<=",480)
> modelo
```

```
> add.constraint(modelo, c(10,8,0,8,0),"<=",480)
> add.constraint(modelo, c(0,0,6,0,10),"<=",480)
> add.constraint(modelo, c(6,10,0,16,3),"<=",480)
> add.constraint(modelo, c(3,0,9,0,8),"<=",480)
> modelo
Model name:
            C1    C2    C3    C4    C5
Minimize   634   560   570   704   812
R1           1     0     0     0     0  >=   36
R2           0     1     1     0     0  >=   45
R3           0     0     0     1     1  >=   10
R4          10     8     0     8     0  <=  480
R5           0     0     6     0    10  <=  480
R6           6    10     0    16     3  <=  480
R7           3     0     9     0     8  <=  480
Kind       Std   Std   Std   Std   Std
Type      Real  Real  Real  Real  Real
Upper      Inf   Inf   Inf   Inf   Inf
Lower        0     0     0     0     0
```

```
> solve(modelo)
[1] 0
> get.objective(modelo)
[1] 55464
> get.variables(modelo)
[1] 36  5 40 10  0
> get.constraints(modelo)
[1]  36  45  10 480 240 426 468
> get.dual.solution(modelo)
 [1]   1.00 646.50 570.00 714.00  -1.25   0.00   0.00   0.00   0.00   0.00
[11]   0.00   0.00  98.00
```

```
> get.sensitivity.rhs(modelo)
$duals
 [1] 646.50 570.00 714.00  -1.25   0.00   0.00   0.00   0.00   0.00   0.00
[11]   0.00  98.00

$dualsfrom
 [1]  2.769231e+01  5.000000e+00  0.000000e+00  4.693333e+02 -1.000000e+30
 [6] -1.000000e+30 -1.000000e+30 -1.000000e+30 -1.000000e+30 -1.000000e+30
[11] -1.000000e+30 -5.000000e+00

$dualstill
 [1] 3.684211e+01 4.633333e+01 1.133333e+01 5.232000e+02 1.000000e+30
 [6] 1.000000e+30 1.000000e+30 1.000000e+30 1.000000e+30 1.000000e+30
[11] 1.000000e+30 1.000000e+01
```

```
> set.type(modelo,1,"integer")
> set.type(modelo,2,"integer")
> set.type(modelo,3,"integer")
> set.type(modelo,4,"integer")
> set.type(modelo,5,"integer")
> modelo
Model name:
            C1   C2   C3   C4   C5
Minimize   634  560  570  704  812
R1           1    0    0    0    0  >=   36
R2           0    1    1    0    0  >=   45
R3           0    0    0    1    1  >=   10
R4          10    8    0    8    0  <=  480
R5           0    0    6    0   10  <=  480
R6           6   10    0   16    3  <=  480
R7           3    0    9    0    8  <=  480
Kind       Std  Std  Std  Std  Std
Type       Int  Int  Int  Int  Int
Upper      Inf  Inf  Inf  Inf  Inf
Lower        0    0    0    0    0
```

```
> colNames<-c("A","B1","B2","C1","C2")
> rowNames<-c("DEMA","DEMB","DEMC","CAPM1","CAPM2","CAPM3","CAPM4")
> dimnames(modelo)<-list(rowNames,colNames)
> MODELO
Error: objeto 'MODELO' no encontrado
> modelo
Model name:
            A   B1   B2   C1   C2
Minimize  634  560  570  704  812
DEMA        1    0    0    0    0  >=   36
DEMB        0    1    1    0    0  >=   45
DEMC        0    0    0    1    1  >=   10
CAPM1      10    8    0    8    0  <=  480
CAPM2       0    0    6    0   10  <=  480
CAPM3       6   10    0   16    3  <=  480
CAPM4       3    0    9    0    8  <=  480
Kind      Std  Std  Std  Std  Std
Type      Int  Int  Int  Int  Int
Upper     Inf  Inf  Inf  Inf  Inf
Lower       0    0    0    0    0
>  write.lp(modelo,'modelo.mps',type="mps")
> getwd()
[1] "/home/alumno.upv.es/dbacbac"
```

INFORME DE LINGO

Objective value: 55464

Variable	Value	Reduced Cost
A	36	0
B1	5	0
B2	40	0
C1	10	0
C2	0	98

Row	Slack or Surplus	Dual Price
OBJ	55464.00	-1.0
DEMA	0	-646.5
DEMB	0	-570
DEMC	0	-714
CAPM1	0	1.25
CAPM2	240	0
CAPM3	54	0
CAPM4	12	0

Objective Coefficient Ranges

Variable	Current Coefficient	Allowable Increase	Allowable Decrease
A	634.0000	INFINITY	646.5
B1	560.0000	-	-
B2	570.0000	-	-
C1	704.0000	98	714
C2	812.0000	INFINITY	98

Righthand Side Ranges

Row	Current RHS	Allowable Increase	Allowable Decrease
DEMA	36.00000	0.84	8.307
DEMB	45.00000	-	-
DEMC	10.00000	1.33	10
CAPM1	480.0000	-	-
CAPM2	480.0000	INFINITY	240
CAPM3	480.0000	-	-
CAPM4	480.0000	INFINITY	12