811129289_4

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Calling library and reaching a linear programming model. Setting the function to minimum

```
library(lpSolveAPI)
lprec<-make.lp(0,8)
lp.control(lprec,sense='min')
```

```
## $anti.degen
## [1] "fixedvars" "stalling"
##
## $basis.crash
## [1] "none"
##
## $bb.depthlimit
## [1] -50
##
## $bb.floorfirst
## [1] "automatic"
##
## $bb.rule
## [1] "pseudononint" "greedy"       "dynamic"      "rcostfixing"
##
## $break.at.first
## [1] FALSE
##
## $break.at.value
## [1] -1e+30
##
## $epsilon
##       epsb       epsd      epsel     epsint epsperturb   epspivot
##      1e-10      1e-09      1e-12      1e-07      1e-05      2e-07
##
## $improve
## [1] "dualfeas" "thetagap"
##
## $infinite
## [1] 1e+30
##
## $maxpivot
## [1] 250
##
## $mip.gap
## absolute relative
```

```
##    1e-11    1e-11
##
## $negrange
## [1] -1e+06
##
## $obj.in.basis
## [1] TRUE
##
## $pivoting
## [1] "devex"    "adaptive"
##
## $presolve
## [1] "none"
##
## $scalelimit
## [1] 5
##
## $scaling
## [1] "geometric"   "equilibrate" "integers"
##
## $sense
## [1] "minimize"
##
## $simplextype
## [1] "dual"   "primal"
##
## $timeout
## [1] 0
##
## $verbose
## [1] "neutral"
```

Formulating Objective Function

```
set.objfn(lprec,c(622,614,630,0,641,645,649,0))
```

Adding constraints for both plants and warehouses

```
add.constraint(lprec,rep(1,4),"=",100,indices =c(1,2,3,4))
add.constraint(lprec,rep(1,4),"=",120,indices =c(5,6,7,8))
add.constraint(lprec,rep(1,2),"=",80,indices =c(1,5))
add.constraint(lprec,rep(1,2),"=",60,indices =c(2,6))
add.constraint(lprec,rep(1,2),"=",70,indices =c(3,7))
add.constraint(lprec,rep(1,2),"=",10,indices=c(4,8))
```

Solving the lp problem

```
solve(lprec)

## [1] 0

get.objective(lprec)
```

```
## [1] 132790
```

```
get.constraints(lprec)
```

```
## [1] 100 120  80  60  70  10
```

```
get.variables(lprec)
```

```
## [1]  0 60 40  0 80  0 30 10
```