

Assignment 2

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```
library(lpSolve)
```

```
#Here we use the Objective function to maximize
```

```
f.obj <- c(420,360,300,  
          420,360,300,  
          420,360,300)
```

```
#Constraints are defined here
```

```
f.con <- matrix(c(1,1,1,0,0,0,0,0,0,  
                 0,0,0,1,1,1,0,0,0,  
                 0,0,0,0,0,0,1,1,1,  
                 20,15,12,0,0,0,0,0,0,  
                 0,0,0,20,15,12,0,0,0,  
                 0,0,0,0,0,0,20,15,12,  
                 1,0,0,1,0,0,1,0,0,  
                 0,1,0,0,1,0,0,1,0,  
                 0,0,1,0,0,1,0,0,1), nrow = 9, byrow = TRUE)
```

```
#Set direction of the inequalities(as no.of rows = 9, we have set nine inequalities)
```

```
f.dir <- c("<=",  
          "<=",  
          "<=",  
          "<=",  
          "<=",  
          "<=",  
          "<=",  
          "<=",  
          "<=")
```

```
#Set the right hand side coefficients
```

```
#A. All the three plants have the excess capacity to produce 750,900 and 450 units per day
```

```
#B. All the three plants have 13000,12000 and 5000 square feet
```

```
#C. Sales forecast indicate that 900, 1200 and 750 unites would be sold per day by all the three plants
```

```
f.rhs<-c(750,  
        900,  
        450,  
        13000,  
        12000,  
        5000,  
        900,
```

```
1200,  
750)
```

```
#Find the value of the objective function  
lp("max",f.obj,f.con,f.dir,f.rhs)
```

```
## Success: the objective function is 708000
```

```
#Values of the variables  
lp("max",f.obj,f.con,f.dir,f.rhs)$solution
```

```
## [1] 350.0000 400.0000 0.0000 0.0000 400.0000 500.0000 0.0000 133.3333  
## [9] 250.0000
```

```
““
```