Assignment 2

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```
library(lpSolve)
```

#coefficients of the objective function

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

#matrix corresponding to coefficients of constraints by rows # Do not consider the non-negative constraint; it is automatically assumed

```
f.con <- matrix(c(1,1,1,0,0,0,0,0,0,    #Capacity constraints
                  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, #Storage constraints
                  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,    #Sales forecast constraints
                  0,1,0,0,1,0,0,1,0,
                  0,0,1,0,0,1,0,0,1,
                  900,900,900,-750,-750,-750,0,0,0, #Layoff constraints
                  0,0,0,450,450,450,-900,-900,-900,
                  450,450,450,0,0,0,-750,-750,-750), nrow = 12 , byrow= TRUE)
```

#Directional signs

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

#right hand side coefficients

```
f.rhs <- c(750,
           900,
           450,
           13000,
           12000,
           5000,
           900,
           1200,
           750,
           0,
           0,
           0)
```

Final value

```
lp("max", f.obj, f.con, f.dir, f.rhs)
```

```
## Success: the objective function is 696000
```

Variables final values

```
lp("max", f.obj, f.con, f.dir, f.rhs)$solution
```

```
## [1] 516.6667 177.7778   0.0000   0.0000 666.6667 166.6667   0.0000   0.0000
## [9] 416.6667
```