Assignment-2

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2022-09-22

LP Model using R

```
#Installing the lpSolve library
library(lpSolve)
```

```
## Warning: package 'lpSolve' was built under R version 4.1.3
```

```
# Set Objective function
f.obj <- c(420,360,300,
           420,360,300,
           420,360,300)
```

```
#Set the Constraints
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 the direction of the inequalities
f.dir<-c("<=",
         "<=",
         "<=",
         "<=",
         "<=",
         "<=",
         "<=",
         "<=",
         "<=")
```

```
#Set the right hand side coefficients
f.rhs<-c(750,
        900,
        450,
        13000,
        12000,
```

```
        5000,
        900,
        1200,
        750)
```

```
#Find the value of the objective function(Z)
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
```