

Assignment4

```
setwd("~/Documents/GitHub/64018_jmadduku/Assignment4")
```

Transportation Problem:

```
library(lpSolveAPI)
transportation.lp <- read.lp ("transportation.lp")
```

Printing the Transportation Model

```
transportation.lp
```

```
## Model name:
##
## Minimize      XI1    XI2    XI3    XJ1    XJ2    XJ3
## R1            1      1      1      0      0      0  <=  100
## R2            0      0      0      1      1      1  <=  120
## Warehouse1    1      0      0      1      0      0   =   80
## Warehouse2    0      1      0      0      1      0   =   60
## Warehouse3    0      0      1      0      0      1   =   70
## Kind          Std    Std    Std    Std    Std    Std
## Type          Real   Real   Real   Real   Real   Real
## Upper         Inf    Inf    Inf    Inf    Inf    Inf
## Lower         0      0      0      0      0      0
```

```
solve(transportation.lp)
```

```
## [1] 0
```

#To print the optimum solution for Model

```
get.objective(transportation.lp)
```

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

The optimum solution for the model is 132,790 which is the combined cost of both production and shipping.

To print the optimum values from the units produced and shipped from the plant to warehouse.

```
decision_Vars <- get.variables(transportation.lp)
print(paste("optimum values of decision variables are:", as.data.frame(decision_Vars)
))
```

```
## [1] "optimum values of decision variables are: c(0, 60, 40, 80, 0, 30)"
```

To print the optimum values for the constraints which have feasible solution.

```
const <- get.constraints(transportation.lp)
print(paste("The optimum values of the constraints are:", as.data.frame(const)))
```

```
## [1] "The optimum values of the constraints are: c(100, 110, 80, 60, 70)"
```