The Transportation Model

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Lets load required library:

```
library(lpSolve)
```

Set up cost matrix

```
a <- matrix(c(22, 14, 30, 0, 16, 20, 24, 0), nrow = 2, byrow = TRUE) #Shipping Cost per unit
b <- c(600, 625) #Production cost per unit
cost.mat <- a+b #Combining Cost of shipping and production Cost per unit
colnames(cost.mat) <- c("W1","W2", "W3", "DW4" )
rownames(cost.mat) <- c("Plant-A", "Plant-B")
cost.mat
```

```
##          W1  W2  W3 DW4
## Plant-A 622 614 630 600
## Plant-B 641 645 649 625
```

Set up constraint sign and RHS

```
row.signs <- rep("=", 2)
row.rhs <- c(100, 120)
col.signs <- rep("=", 4)
col.rhs <- c(80, 60, 70, 10)

lptrans <- lp.transport(cost.mat, "min", row.signs, row.rhs, col.signs, col.rhs)
```

Printing objective value and solution

```
colnames(lptrans$solution) <- c("W1","W2", "W3", "DW4" )
rownames(lptrans$solution) <- c("Plant-A", "Plant-B")
lptrans$solution
```

```
##         W1 W2 W3 DW4
## Plant-A 30 60  0  10
## Plant-B 50  0 70   0
```

```
lptrans$objval #objective value
```

```
## [1] 138980
```