

# Assignment:Module 11

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```
library(lpSolveAPI)
Model_AP<-read.lp("C:/Users/sidda/Desktop/KSU_Fall/QMM/Assignemnt module 11/qmm.lp")
Model_AP
```

```
## Model name:
##           x1  x2  x3  x4  x5  x6  x7
## Minimize  775 800 800 800 800 775 750
## Sunday    0   1   1   1   1   1   0 >= 18
## Monday    0   0   1   1   1   1   1 >= 27
## Tuesday   1   0   0   1   1   1   1 >= 22
## Wednesday 1   1   0   0   1   1   1 >= 26
## Thursday  1   1   1   0   0   1   1 >= 25
## Friday    1   1   1   1   0   0   1 >= 21
## Saturday  1   1   1   1   1   0   0 >= 19
## Kind      Std Std Std Std Std Std Std
## Type      Int Int Int Int Int Int Int
## Upper     Inf Inf Inf Inf Inf Inf Inf
## Lower      0   0   0   0   0   0   0
```

```
solve(Model_AP)
```

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

Here 0 indicates that the model exists

```
get.objective(Model_AP)
```

```
## [1] 25675
```

To ensure that there are enough number of workers available on each day with the given wages it costs the company \$25,675.

```
get.variables(Model_AP)
```

```
## [1] 2 4 5 0 8 1 13
```

x1= Employees on Shift 1=2

x2= Employees on Shift 2=4

x3= Employees on Shift 3=5  
x4= Employees on Shift 4=0  
x5= Employees on Shift 5=8  
x6= Employees on Shift 6=1  
x7= Employees on Shift 7=13

Therefore Number of employees working on each day are as follows:

Sunday:  $x2 + x3 + x4 + x5 + x6 = 18$

Monday:  $x3 + x4 + x5 + x6 + x7 = 27$

Tuesday:  $x4 + x5 + x6 + x7 + x1 = 24$

Wednesday:  $x5 + x6 + x7 + x1 + x2 = 28$

Thursday:  $x6 + x7 + x1 + x2 + x3 = 25$

Friday:  $x7 + x1 + x2 + x3 + x4 = 24$

Saturday:  $x1 + x2 + x3 + x4 + x5 = 19$