QMM_11

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```
#loading libraries
library(lpSolveAPI)
```

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

```
#loading the dataset
ipmodel = read.lp("C:/Users/desineni/Downloads/AP.lp")
ipmodel
```

```
## 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(ipmodel)
```

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

```
#the value obtained "0" shows that he model exists
```

```
get.objective(ipmodel)
```

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

```
### therefore the total wages while ensuring that there are sufficient number of workers available
### each day is 25675$
```

```
get.variables(ipmodel)
```

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

x1 = Employees on shit 1 = 2

x2 = Employees on shit 2 = 4

x3 = Employees on shit 3 = 5

x4 = Employees on shit 4 = 0

x5 = Employees on shit 5 = 8

x6 = Employees on shit 6 = 1

x7 = Employees on shit 7 = 13

the number of workers available each day are

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 = 26
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