

QMM-Assignment-6

Karthikeyan ramesh

2022-11-20

```
library(lpSolve)
library(lpSolveAPI)
y <- read.lp("ass10.lp")
y
```

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		

Solving the problem to get objective function.

```
solve(y)
```

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

```
get.objective(y)
```

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

#Our Objective function is: 25675. #Let's examine the factors to determine what this means..

```
get.variables(y)
```

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

What it illustrates is:

#X1 = shift 1 with Sunday and Monday off = 2 #X2 = shift 2 with Monday and Tuesday off = 4 #X3 = shift 3 with Tuesday and Wednesday off = 5 #X4 = shift 4 with Wednesday and Thursday off = 0 #X5 = shift 5 with Thursday and Friday off = 8 #X6 = shift 6 with Friday and Saturday off = 1 #X7 = shift 7 with Saturday and Sunday off = 13

Our goal-oriented purpose = $2 \times 775 + 4 \times 800 + 5 \times 800 + 8 \times 800 + 1 \times 775 + 13 \times 750 = 25675$.

The bare least that we can afford to pay for salary is 25675.