In [1]:
```
import sys, os
import docplex.mp
from docplex.mp.model import Model

path = 'D:\SISTEMAS\SEMESTRE-2020-2\Pesquisa Operacional\Lista1'
os.chdir(path)
```

In [2]:
```
modelo = Model(name='Lista_1_Questao_6')
```

In [3]:
```
X1 = modelo.continuous_var(name='X1')
X2 = modelo.continuous_var(name='X2')
```

In [4]:
```
# Função Objetiva
modelo.minimize(4*X1 + X2)
```

In [5]:
```
# Restrições
modelo.add_constraint(X1 >= 0)
modelo.add_constraint(X2 >= 0)
modelo.add_constraint(3*X1 + X2 <= 3)
modelo.add_constraint(3*X1 + X2 >= 3)
modelo.add_constraint(4*X1 + 3*X2 >= 6)
modelo.add_constraint(X1 + 2*X2 <= 4)
```

Out[5]:
```
docplex.mp.LinearConstraint[](X1+2X2,LE,4)
```

In [6]:
```
modelo.print_information()
```

```
Model: Lista_1_Questao_6
 - number of variables: 2
   - binary=0, integer=0, continuous=2
 - number of constraints: 6
   - linear=6
 - parameters: defaults
 - objective: minimize
 - problem type is: LP
```

In [7]:
```
otimizacao = modelo.solve()
modelo.print_solution()
```

```
objective: 3.400
  X1=0.400
  X2=1.800
```

In [8]:
```
modelo.parameters.lpmethod = 4
modelo.solve(url=None, key=None, log_output=True)
```

```
Version identifier: 20.1.0.0 | 2020-11-11 | 9bedb6d68
CPXPARAM_Read_DataCheck                          1
CPXPARAM_LPMethod                                4
Tried aggregator 1 time.
LP Presolve eliminated 5 rows and 1 columns.
Aggregator did 1 substitutions.
All rows and columns eliminated.
Presolve time = 0.00 sec. (0.00 ticks)
Parallel mode: deterministic, using up to 4 threads for concurrent optimization:
 * Starting dual Simplex on 1 thread...
```

```
 * Starting primal Simplex on 1 thread...

Dual simplex solved model.


Total time on 4 threads = 0.02 sec. (0.01 ticks)
```

Out[8]:
```
docplex.mp.solution.SolveSolution(obj=3.4,values={X1:0.4,X2:1.8})
```

In [9]:
```
%notebook "D:\SISTEMAS\SEMESTRE-2020-2\Pesquisa Operacional\Lista1\Questao_6.ipynb"
```