IDO- Question 1

Marcelino Sánchez Rodríguez 191654

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```julia
using JuMP, HiGHS
model = Model(HiGHS.Optimizer)
@variable(model, x[1:15], Bin)
@variable(model, y >= 0)

@objective(model, Min, y)

@constraint(model, 2*sum(x) + y  == 15)


optimization_result = optimize!(model)
```

```
Running HiGHS 1.6.0: Copyright (c) 2023 HiGHS under MIT licence terms
Presolving model
1 rows, 16 cols, 16 nonzeros
0 rows, 1 cols, 0 nonzeros
0 rows, 0 cols, 0 nonzeros
Presolve: Optimal

Solving report
  Status             Optimal
  Primal bound       1
  Dual bound         1
  Gap                0% (tolerance: 0.01%)
  Solution status    feasible
                     1 (objective)
                     0 (bound viol.)
                     0 (int. viol.)
                     0 (row viol.)
```

```
Timing              0.00 (total)
                    0.00 (presolve)
                    0.00 (postsolve)
Nodes               0
LP iterations       0 (total)
                    0 (strong br.)
                    0 (separation)
                    0 (heuristics)
```

    value.(x)

```
15-element Vector{Float64}:
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0
 1.0
 1.0
 1.0
 1.0
 1.0
 1.0
 1.0
```

    value.(y)

```
1.0
```