A Hello World optimization program showing some of the possible expressiveness of MBOL:

$$
\begin{aligned}
\underset{H,d}{\text{minimize}} \quad & Hello + World \\
\text{subject to} \quad & H \in \mathbb{Z} \\
& H \geq \frac{o+e}{o} + o \\
& 0.01 * d + H \geq \sum_{i=1}^{5} (\sum_{j=1}^{4} (W + l) * l) \\
& d \geq i + or + 10,\ 1 \leq i \leq 12 \\
& 5 * d + H \geq r \\
& H \geq 5 * \sum_{i=1}^{100} (e + l)
\end{aligned}
$$

A program for computing the maxflow mincut from node s to node t of a graph with edge weights $w_{i,j}$ and nodes V:

$$
\begin{aligned}
\underset{f}{\text{maximize}} \quad & \sum_{j \in V} (f_{s,j}) \\
\text{subject to} \quad & \sum_{j \in V} (f_{i,j}) = \sum_{j \in V} (f_{j,i}),\ i \in V \setminus (\{s\} \cup \{t\}) \\
& f_{i,j} \leq w_{i,j},\ i \in V,\ j \in V \\
& f_{i,s} = 0,\ i \in V \\
& f_{t,i} = 0,\ i \in V
\end{aligned}
$$

A program for computing the number of node-disjoint paths from node s to node t of a graph with edges $e_{i,j}$ and nodes V:

$$
\begin{aligned}
\underset{f}{\text{maximize}} \quad & \sum_{j \in V} (f_{s,j}) \\
\text{subject to} \quad & \sum_{j \in V} (f_{i,j}) = \sum_{j \in V} (f_{j,i}),\ i \in V \setminus (\{s\} \cup \{t\}) \\
& f_{i,j} \leq e_{i,j},\ i \in V,\ j \in V \\
& f_{i,s} = 0,\ i \in V \\
& f_{t,i} = 0,\ i \in V \\
& \sum_{j \in V} (f_{i,j}) \leq 1,\ i \in V \setminus \{s\}
\end{aligned}
$$

A program for computing the chromatic number of a graph with edges $e_{i,j}$

and nodes V:

$$
\begin{aligned}
\underset{x,c}{\text{minimize}} \quad & \sum_{i \in V} (x_i) \\
\text{subject to} \quad & \sum_{i \in V} (c_{i,j}) = 1,\ j \in V \\
& c \in \mathbb{Z} \\
& c_{k,i} + c_{k,j} + e_{i,j} \leq 2,\ i \in V,\ j \in V,\ k \in V \\
& x_i \geq c_{i,j},\ i \in V,\ j \in V
\end{aligned}
$$