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Building Coluna.jl, a Branch-and-cut-and-price framework in Julia

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Coluna.jl is a branch-and-cut-and-price framework written in Julia. Together with BlockDecomposition, this package allows you to seamlessly run a branch-and-cut-and-price algorithm from your JuMP model. The platform provides default implementation of advanced features such as non-robust cuts, stabilization techniques that you can easily customize to develop your own next-stage state-of-the-art algorithms. This project is actively supported and continuously enhanced by the contributions of the best researchers in the field. Building such a platform is a real challenge that raises a great amount of engineering problems and questions. Today, we are reaching an important milestone in the development of Coluna thanks to an architecture of the package that is quite modular and allows us to easily try new algorithmic strategies. This is the perfect opportunity to share our experience in building a Julia optimization package.

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