Exercise: Projected gradient descent for ℓ_1 regularized least squares

Consider the BPDN problem $\operatorname{argmin}_{\boldsymbol{\theta}} \mathrm{RSS}(\boldsymbol{\theta}) + \lambda ||\boldsymbol{\theta}||_1$. By using the split variable trick introducted (i.e., by defining $\boldsymbol{\theta} = \boldsymbol{\theta}_+ - \boldsymbol{\theta}_-$), rewrite this as a quadratic program with a simple bound constraint. Then sketch how to use projected gradient descent to solve this problem.