

Homework 4

CP: solution algorithms



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Consider **your own** constrained NLP problem (that you have solved using GAMS) and:

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- **Step 1 (2 points out of 10)**: Solve it using a **penalty** algorithm implemented in Octave (or the like). Describe in detail your implementation.
- **Step 2 (4 points out of 10)**: Solve it using a **multiplier** algorithm implemented in Octave (or the like). Describe in detail your implementation.
- **Step 3 (2 points out of 10)**: Greatly **scale** or **de-scale** your own problem and repeat 1-2 above (or the like).

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- **Step 4 (2 points out of 10):** Carefully draw conclusion from 1-3 and carefully document them.

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Make sure that your problem is **complex enough**:

- **At least 3** optimization variables.
- **At least 1** “ \leq ” constraint (not a bound).
- **At least 1** “ \geq ” constraint (not a bound).
- **At least 1** “ $=$ ” constraint.

