

Linear Program Solver

Erik Rosenstrom

Yi Yao

Xiaofan Wu

We, as a team of three will collaboratively develop a solver for linear programming problems solver implementing the Simplex Method.

The software will do the following:

1. Read in problem definition from a file written in a particular format.
An example file is as follows:

```
3 3
1 2 3 4
-1 2 4 1 5
11 3 4 0 3
2 1 3 2 -2
```

The first number in the first row indicates the number of variables.

The second number in the second row indicates the number of constraints.

The first number in the second row is either 0 or 1. When it is 1, maximize the objective function, otherwise, minimize the objective function.

The following numbers in the second row are coefficients of the variables in the objective function.

The following rows are the constraints.

The last but one numbers can have value 0, 1 or 2. 0 stands for less than or equal to, and 1 stands for equal to, while 2 stands for greater than or equal to.

2. Construct a model using the input data.
3. Solve the model
4. Output result to console or file

Division of work:

I/O	Building up the model	Model Solver	Vector and Matrix Operations
Eric Rosenstrom	Eric Rosenstrom	Yi Yao	Xiaofan Wu