Goal Programming

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Abstract

Simulating Goal Programming on a product store sales problem with 3 types Goal Programming initiation method: Lexicographical, Weighted and Chebyshev using Pyomo for mathematical modelling in Python and GLPK for solving the optimization problem using simplex method

I. Introduction

Ordinary linear program models are not able to solve management cases that require certain goals to reach all objectives optimally at the same time. In the linear program model there is a Slack variable in the constraint function in the form of a delimiter and a surplus in the constraint function in the form of conditions. In solving the case of a linear program the two variables function to accommodate the advantages and disadvantages of the left hand side value of a constraint function so that it equals the value of the right hand side. However, both of these variables are completely uncontrollable in solving the case of linear programs, so the linear program model was developed by A. Charles and W. M. Cooper as a goal programming model. If there are variables in a linear program that have characteristics similar to the Slack and Surplus variables, and are in a constraint equation, then the variable is controlled so that the left segment value of a constraint is equal to the value of the right segment. The goal programming model is able to solve cases of linear programs that have more than one goal to be achieved. The goal or target is a constant value on the right hand side of the constraint function Basically the structure of goal programming and linear programming is the same. The concept of goal programming is to introduce additional auxiliary variables called deviations that act not as variable decision, but only as facilitators to formulate models. This deviation is the difference between the desired target value and the results obtained. The goal programming model is an extension of the linear program model so that all as- sumptions, formation notations, mathematical models, formulation procedures, models and solutions are no different. The difference lies only in

II. Methods

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*A thank you or further information

Table 1: *Example table*

Name		
First name	Last Name	Grade
John	Doe	7.5
Richard	Miles	2

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Text requiring further explanation[1].

III. Results

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$$e = mc^2 \tag{1}$$

[1]Example footnote

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IV. Discussion

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ii. Subsection Two

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References

[Figueredo and Wolf, 2009] Figueredo, A. J. and Wolf, P. S. A. (2009). Assortative pairing and life history strategy - a cross-cultural study. *Human Nature*, 20:317–330.