CAS 741: Problem Statement
A Library of Simplex Method Solvers

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Table 1: Revision History

Date	Developer(s)	Change
September 14	Hanane Zlitni	First Draft

The simplex method, a linear programming algorithm, is considered one of the most popular algorithms that has significant influence in the fields of science and engineering [add reference —Author].

The algorithm can be used in a variety of fields and its goal is to make the most of the available resources to achieve the optimal solution. For example, the simplex method is used in the sand casting process to optimize the sand casting parameters to produce the best results [add reference —Author]. Moreover, the simplex method is used in chemistry to maximize the yield of a chemical reaction [add reference —Author].

Since the simplex method has various applications in different fields, a system that facilitates solving objective functions using the simplex method for different purposes can be useful. Therefore, I propose the development of a library containing simplex method solvers given the objective function, the objective function goal (maximization or minimization) and the linear constraints that the objective function is subject to. The output would be the optimal solution of the objective function that satisfies the constraints and achieves the specified goal (maximization or minimization).

To use the library, basic knowledge of linear programming is assumed, but no technical background is required. The library will be operable on different platforms, including Mac and Windows.