

Analysis and Design Considerations of a Web-Based Decision Support System for the Multiple Capacitated Facility Location Problem

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Abstract

The Multiple Capacitated Facility Location Problem (MCFLP) is a particular type of the facility location problem, which is well-known operations research problem with practical application in different fields. This paper explores the design issues faced during the development of a web-based Decision Support System (DSS) for the MCFLP. Designing these types of DSS requires analyzing two main dimensions: the technical dimension and the dimension dealing with the application in a specific field. These considerations motivate the choice of an object-oriented methodology for software development. We use the Unified Modelling Language (UML) to design the DSS as UML is the de-facto standard for object-oriented modeling. Finally, implementation issues are discussed and evaluated.

KEYWORDS

Decision Support Systems, Capacitated Facility Location Problem, Location Allocation Problem, Software Design, Unified Modelling Language.