

Some Practical Problems Related With Bus Transport System By Optimization Methods

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In the paper, a school bus routing problem, its mathematical models and solution methods are investigated. The aim of the study is to search for school bus routing problem and its solution method and to apply them for a sample case study. The case study concerns the routing and scheduling of school buses in an exemplary, well-recognized school located in one of Patna. The problem is to find a series of school bus routes that ensure the service is provided equitably to all eligible students. Because of the NP-hardness of the school bus routing problem, it is solved using some heuristic optimization method using real data from the considered exemplary school. The aim is to increase bus utilization and to reduce transportation times for students, while maintaining on-time delivery of students to the school. Although the problem under consideration is one of the earliest logistics problems solved using methods of operations research, remains valid and is the subject of research, as evidenced by numerous contemporary publications, presenting new methods for the formal specification and solution of the problem.