Implementation of CVRP in a Metropolitan Area with a High Density of Vehicular Fleet

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Abstract. The problem of routing of vehicles (VRP) is the approach from which faces the problem of logistics, management, management and distribution of goods from one point to a destination. When is required to distribute loads to the classic problem, then it is considered the VRP with the capacity extension or (CVRP). The present work focuses on using an instance with the purpose of implementing an improvement to public transportation in the Metropolitan Area of Guadalajara (MAoG). It uses the language for technical calculation called (MATLAB). The algorithm used in this work is described below: a) Start from the depot, b) Examine the outputs that have not been served, outputs may be feasible and infeasiblec) For choose the best feasible outputs, for example having the shortest distance, insert it into the route and position before the last exit on that route, d) If there are more feasible outputs, repeat from point b), but to create a new route and start the flow from the point a), e) If all exits were covered, but finish initiate flow from the point a). The results show that the route can be optimized by distributing and reordering of units so that all points are covered.