Abstract

The dynamic space allocation problem (DSAP) presented here is a relatively new problem in the literature. It looks at the optimization of space/resource assignments during the implementation of project activities. More specifically, the DSAP assigns project activities and their required resources to workspaces and idle resources to storage spaces with respect to minimizing the sum of the distances the resources travel. In this paper, construction algorithms and a tabu search heuristic are presented for the DSAP, and a set of test problems taken from the literature is used to test the performances of the heuristics. The results show that the proposed tabu search heuristic clearly out-performs the techniques (i.e., simulated annealing heuristics) presented in the literature with respect to solution quality and computation time.

Keywords: Dynamic Space Allocation Problem; Tabu Search; Clustering Algorithms; Randomized Storage Policy;