

Shape assignment by genetic algorithm towards designing optimal areas.

ABSTRACT

This paper presents a preliminary study on space allocation focusing on the rectangular shapes to be assigned into an area with an intention to find optimal combination of shapes. The proposed solution is vital for promoting an optimal planting area and eventually finds the optimal number of trees as the ultimate goal. Thus, the evolutionary algorithm by GA technique was performed to find the objective. GAs by implementing some metaheuristic approaches is one of the most common techniques for handling ambiguous and / or vast possible solutions. The shape assignment strategy by the determine shapes coordinate to be assigned into an area was introduced. The aim of this study is to gauge the capability of GA to solve this problem. Therefore some strategies to determine the chromosome representation and genetic operators are essential for less computational time and result quality. Some areas coordinate were used to generate the optimal solutions. The result indicates the GA is able to fulfill both feasible result and acceptable time.

Keyword: Genetic algorithm; Shape assignment; Space allocation; Metaheuristic.