



Plants Watering Schedule Algorithm Using the Edge Coloring Graph Technique

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Abstract:

Scheduling problem can be solved with graph methods. It is required an effective and efficient way to solve this problem in order to obtain optimum results subject to the given constraints. This study aims to solve the problem of plants watering schedule in a garden with different watering frequency, by several cars with the different access ability. The problem that occurs is how to complete the watering schedule such that no idle sprinklers car until all plants are watered subject to the given constraints. This problem is solved by using the edge graph coloring technique. This technique can produce optimal number of colors as the option of watering schedule. The coloring result becomes the basis of the division of time on the watering schedule to avoid collisions on every itinerary. The smallest number of colors at each plant is chosen such that all the numbers result becomes the set of watering timetable. The algorithms tested randomly by giving data sets. This algorithm was designed in a common formula to be used both for the case scheduling watering plants with different frequencies and the different capacity of sprinklers cars.

Keywords: Algorithms; Edge Graph Coloring; Scheduling; Watering