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Reduction In Precipitation When Cutting Timber, Utilizing The Knapsack Problem*

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Abstract

The study presented focuses on optimizing the wood cutting process in the timber industry, utilizing a modified knapsack algorithm. Traditional wood cutting methods lead to significant material losses due to inefficiencies in the sequence and method of cuts. The study proposes an algorithm based on the knapsack problem, designed to minimize waste by optimizing the order of cuts from a given length of timber. The model was tested and compared with standard industry practices, demonstrating potential for reducing material wastage. This approach not only promises to enhance the economic efficiency of wood usage but also contributes to sustainable development by reducing unnecessary waste. The results indicate a significant improvement in waste reduction, making this solution attractive to the timber industry interested in cost savings and sustainable development.

Keywords: cutting, timber, roof truss, knapsack problem, waste reduction

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