

A Graph Theoretical Approach for Creating Building Floor Plans

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Abstract. Existing floor planning algorithms are mostly limited to rectangular room geometries. This restriction is a significant reason why they are not used much in design practice. To address this issue, we propose an algorithm (based on graph theoretic tools) that generates rectangular and, if required, orthogonal floor plans while satisfying the given adjacency requirements. If a floor plan does not exist for the given adjacency requirements, we introduce circulations within a floor plan to have a required floor plan.

Keywords 1 adjacency, algorithm, graph theory, rectangular floor plan, orthogonal floor plan.