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The Conceptual Design Model of an Automated Supermarket

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Abstract : The success of any retail business is predisposed by its swift response and its knack in understanding the constraints and the requirements of customers. In this paper a conceptual design model of an automated customer-friendly supermarket has been proposed. In this model a 10-sided, space benefited, regular polygon shaped gravity shelves have been designed for goods storage and effective customer-specific algorithms have been built-in for quick automatic delivery of the randomly listed goods. The algorithm is developed with two main objectives, viz., delivery time and priority. For meeting these objectives the randomly listed items are reorganized according to the critical-path of the robotic arm specific to the identified shop and its layout and the items are categorized according to the demand, shape, size, similarity and nature of the product for an efficient pick-up, packing and delivery process. We conjectured that the proposed automated supermarket model reduces business operating costs with much customer satisfaction warranting a win-win situation.

Keywords : automated supermarket, electronic shopping, polygon-shaped rack, shortest path algorithm for shopping
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