A Tabu Search Algorithm for Consumer Financial Optimization System

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ABSTRACT

Due to the insatiability of human wants and limited available resources, consumers are often faced with the problem of making the best choice of goods depending on their income. Thus, a high level of decision making is required in such a situation to ensure that despite the available limited resources, every consumer gets a reasonable satisfaction from their purchases.

A Combinatorial Optimization technique is adopted in this work for efficient combination of items or components in order to optimize customers' financial resources (money). A commonly used method for solving Combinatorial Optimization problem is the heuristics search methods which are; Local search, Genetic algorithms, Tabu search, etc. All these methods have been applied to various fields of Combinatorial Optimization Problems.

In this work, a Consumer-financial optimization technique that uses Tabu search algorithm is presented. The design is implemented using C# programming language because of its ability for developing interactive applications. The implementation was tested using customers of different computer Products.

The result shows a system that can guide customers to utilize their financial resources efficiently. The method used makes the combinations of products in which the consumer will have an optimal satisfaction despite his limited financial resources. The principle is such that if a consumer cannot buy all the items he wishes to buy, he should at least be satisfied with the items his limited resources will be able to buy.

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