Abstract

The traditional assembly line balancing problem considers the manufacturing process of a product where production is specified in terms of a sequence of tasks that need to be assigned to workstations. Each task takes a known number of time units to complete. Also, precedence constraints exist among tasks: each task can be assigned to a station only after all its predecessors have been assigned to stations. The assembly line balancing problem arises and has to be solved when an assembly line has to be configured or redesigned. It consists of distributing the total work load for manufacturing any unit of the product to be assembled among the workstations along the line.

In this paper Rank positional weight method for Type I of the Simple Assembly Line Balancing Problem (SALBP) and multi product assembly line balancing problem (MALBP) for the hybrid system are described. Type I of SALBP (SALBP-1) and MALBP consist of assigning tasks to work stations such that the number of stations is minimized for a given production rate and cycle time. In this paper, the problem is motivated by a vehicle-sequencing problem at a North India Automobile truck assembly plant. The programmed is coded in C# (C sharp). In this problem, precedence constraints between the tasks have to be considered.
Expert System based on RPW Technique to Evaluating Multi Product Assembly Line Balancing Solution

References

Science., v 7, n 1 (1960), pp 21-42.

Index Terms

Computer Science
Operations Research

Keywords
Assembly line balancing  RPW Heuristic Method  Expert System