VARIANT CONSTRAINT OF TIME MINIMIZATION ASSIGNMENT PROBLEM WITH DIFFERENT OBJECTIVESA LEXI SEARCH APPROACH

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Abstract

There are n jobs to be carried out and m ($\ll n$) machines only are available, out of the n jobs k jobs are necessary to be done on the available machines. Each job has to be done only on one of the machines (i.e. one can not start processing a job on one machine and halfway shift it to another machine). Also, each machine is required to process not less than m_i^l (at least) and not more than m_i^u (at most) jobs; thus, it is permissible that some jobs may have to go unprocessed i.e $\sum_{i=1}^{m} m_i^u \leq n$. With this idea the problem of TMAP was developed with different objectives: The first one is to minimize the total time required for processing the jobs on these machines, second one is to minimize difference between machine times, required for processing the jobs on these machines.

Here, It should be noted that if $\sum_{i=1}^{m} m_i^u < n$, some of the jobs will necessarily be left unprocessed.

Key Words : Combinatorial optimization, Time minimizing assignment problem, Generalized assignment Problem, Lexi-search method.