

Application of Hamiltonian Graphs

* Ujwala Deshmukh

Abstract

Graph Theory is one of the branches of the mathematics where the researchers are attracted due to modelling of daily life situation in graphs and using the graphical technique to find solution to complex situation. One of the situations is sequencing jobs on different machines in a factory.

In a factory n numbers of jobs have to be processed on one machine. After each job, the machine must be adjusted to fit the requirements of the next job. The time of adaptation from one job to other job is t, where 't' takes different values for different jobs. Now the problem is to find a sequencing of the jobs that minimizes the total machine adjustment time.

This problem clearly related to the travelling salesmen problem and no efficient method for the solution is known. In this paper, attempt is made to find a solution by representing the problem in directed graph and find directed Hamiltonian path which yields the sequence that minimizes total machine adjustment time.

* Department of Mathematics, Mithibai College, Mumbai Ujwala_deshmukh @rediffmail.com