CANDIDATES' DECLARATION

This is to certify that the work which is being presented in the B.Tech. Project Report entitled **"SCHEDULING OF FLEXIBLE MANUFACTURING SYSTEM USING GENETIC ALGORITHM"**, in partial fulfilment of the requirements for the award of the **Bachelor of Technology in Computer Science & Engineering** and submitted to the **Department of Computer Science & Engineering** of **IMS Engineering College, Ghaziabad, UP** is an authentic record of our own work carried out during a period from July, 2013 to April, 2014 under the supervision of

Mr VIJAI SINGH (Asst. Professor), Computer Science and Engineering Department.

The matter presented in this project report has not been submitted by me for the award of any other degree elsewhere.

NAVNIKAA RAJAN(1014310068)
SRISHTI JAISWAL(1014310104)
TANYA KALSI(1014310111)

CERTIFICATE

This is to certify that the B.Tech. Project Report entitled **"Scheduling of flexible manufacturing system using genetic algorithm"** submitted by Navnikaa Rajan (1014310068), Srishti Jaiswal (1014310104), Tanya Kalsi (1014310111) to the **Department of Computer Science & Engineering** of **IMS Engineering College, Ghaziabad (UP)**, is a bonafide work carried out under my supervision and guidance and is worthy of consideration for the award of the degree of **Bachelor of Technology in Computer Science & Engineering**.

Signature of Supervisor(s)

Date:

Mr.Vijai Singh
Asst.Professor

Signature of HOD

Prof. (Dr.) Pankaj Agarwal

Signature of Director

Prof. (Dr.) S. P. Pandey

ACKNOWLEDGEMENT

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ABSTRACT

A flexible manufacturing system is an integrated, computer-controlled environment allows the system to react on occurrence of changes, whether predicted or unpredicted. Scheduling machines of varying capabilities in such an environment has always been a difficult task. This work reviews the various approaches applied to the scheduling problem in an FMS, the latter half of the project is an attempt to find a possible solution to the scheduling problem . Various genetic algorithm based approaches considering varied objectives and constraints have been studied and analysed to result in a comparative study. For achieving the desired performance in an FMS it is required that a good scheduling system, taking into account the system conditions should generate an optimal schedule at the right time. Genetic algorithm is capable of finding near to optimal solution in a short time although it doesn't guarantee to find an optimal solution. The project also applies genetic algorithm to generate a machine sequence to determine the order in which the various jobs would be assigned to a number of machines. The tool developed takes the input in tabulated form. Many iterations of genetic algorithm are applied in order to get a schedule with the minimum make span. The project also incorporates breakdown in the job shop environment. If a breakdown occurs then the existing schedule is discarded the system is rescheduled. The aim is to generate optimal schedule suitable for a medium sized system, with constant setup and delay times considering that breakdown occurs in the job floor.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES