Abstract

This paper presents the results of an investigation, and optimization of scheduling system in Sohar University (as a case study) using the genetic algorithm (GA). GA techniques are useful for solving real-world scheduling problem such as timetable which is a complex work and usually done manually. This work focuses on scheduling courses timetable to allocate events (time, subject, and lecturer) in an appropriate way by using the available resource and assists to avoid conflicts. The algorithms explored different operator of GA such as crossover, mutation, and selection mechanism that’s applied to set of chromosomes. The testing has been produced using different parameters of population size, crossover, and mutation probability. Two point crossovers implemented to the timetable to obtain the optimal solution using various probabilities of crossover. The result shows the rate of crossover and mutation equal to 100 performed best optimal solutions. This paper recommended to enhance the fitness function and used different selection mechanism to the algorithm.

Index Terms
Computer Science  Artificial Intelligence

Keywords
Timetable problems, Genetic Algorithm (GA), Non-deterministic Polynomial (NP)