An investigation towards hostel space allocation problem with stochastic algorithms

ABSTRACT

This research presents the study of stochastic algorithms in one of the limited study in Space Allocation Problem. The domain involves the allocation of students into the available rooms which is known as Hostel Space Allocation Problem. The problem background of this domain which related with hard constraints and soft constraints are discussed and the formal mathematical models of constraints in Universiti Malaysia Sabah Labuan International Campus are presented. The construction of initial solution is handled by Constraint Programming algorithm. Two algorithms mainly Great Deluge with linear and non-linear decay rate and Simulated Annealing with linear reduction are proposed to improve the quality of solution. The experimental results show that Simulated Annealing with linear reduction temperature performs well in this domain.