Abstract

Resource allocation and tasks assignment to software development teams are very crucial and arduous activities that can affect a project's cost and completion time. Solution for such problem is NP-Hard and requires software managers to be supported with efficient tools that can perform such allocation and can resolve the software development project scheduling problem (SDPSP) more efficiently. Ant colony optimization (ACO) is a rapidly evolving meta-heuristic technique based on the real life behavior of ants and can be used to solve NP-Hard (SDPSP) problem.

Different versions of ACO meta-heuristic have already been applied to the software project scheduling problem in the past that took various resources into account. We have applied elitist strategy of ACO (elitist ant system) for solving SDPSP in a parameter-constrained environment taking project's cost and duration into consideration. The objective of the ACO-SDPSP methodology allows software project managers and schedulers to assign most effective set of employees that can contribute in minimizing cost and duration of the software project.
Experimental results show that the proposed ACO-SDPSP methodology is promising in achieving the desired results.

References


Index Terms

Computer Science

Information Sciences

Keywords

PERT: Program Evaluation and Review Technique
CPM: Critical Path Method
RCPSP: Resource Constrained Project Scheduling Problem

EBS: Event Based Scheduler
ACO: Ant Colony Optimization