Software assessment of a project is a key aspect for the prediction of the cost, duration and the expertise required for the project. An efficient optimization algorithm is urgently needed. In this paper, we analyze the genetic algorithm (GA) technique for the development of a software assessment model for the NASA software project dataset. The simulation is performed using MATLAB environment and the results are tested on the basis of measures such as MMRE, MdMRE, MMER, Prediction Accuracy (25%) and the estimation time. The results of the developed Genetic Algorithm (GA) based model was also compared to known models in the literature. The assessment provided by the developed GA model was good compared to other models.

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**Index Terms**

Computer Science

Software Engineering

**Keywords**

COCOMO model  Genetic algorithm  Genetic programming  NASA software