Layered Model to Estimate Effort, Performance and Cost of the Software Projects

Volume 63 - Number 13

Year of Publication: 2013

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10.5120/10526-5509

Abstract

This paper presents a layered model which determines the software metrics in the lower layer it consists of three primitive primary software engineering metrics; they are person-months (PM), function-points (FP), and lines of code (LOC). The middle layer consists of the proposed function point which is obtained by grouping the adjustment factors. The proposed method uses fuzzy logic for quantifying the quality of requirements and is added as another adjustment factor, thus a fuzzy based approach for the Enhanced General System Characteristics to Estimate Effort of the Software Projects is obtained in the middle layer. The top layer takes the calculated function point from the proposed method as input, and gives to the static single variable model (Intermediate COCOMO and COCOMO II) for cost estimation whose cost factors are tailored in intermediate COCOMO and both, cost and scale factors are tailored in COCOMO II to suite to the individual development environment, which is very important for the accuracy of the cost estimates. The software performances are measured with their indicators for the software projects. A comparative study for effort, performance measurement and cost estimation of the software project is done between the existing model and the proposed model.
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Index Terms

Computer Science
Software Engineering
Keywords
General System Characteristics (GSC)  Function Point (FP)  Total effort multiplier  Scale Factors
(TEM)

Cost Drivers