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TAE 2

Software Engineering And Project Management

Cocomo Model

What is COCOMO Model?

The COCOMO estimates the cost for software product development in terms of effort (resources required to complete the project work) and schedule (time required to complete the project work) based on the size of the software product. It was developed by software engineer Barry Boehm in 1981. It estimates the required number of Man-Months (MM) for the full development of software products. According to COCOMO, there are three modes of software development projects that depend on complexity. Such as:

1. Organic Project	2. Semidetached Project	3. Embedded Project
It belongs to small & simple software projects which are handled by a small team with good domain knowledge and few rigid requirements.	It is an intermediate (in terms of size and complexity) project, where the team has mixed experience (both experience & inexperienced resources) to deals with rigid/nonrigid requirements.	This project has a high level of complexity with a large team size by considering all sets of parameters (software, hardware and operational).

Types of COCOMO Model

Depending upon the complexity of the project the COCOMO has three types.

1. The Basic COCOMO

It is the one type of static model to estimates software development effort quickly and roughly. It mainly deals with the number of lines of code and the level of estimation accuracy is less as we don't consider the all parameters belongs to the project. The estimated effort and scheduled time for the project are given by the relation:

Effort (E) = $a*(KLOC)^b$ MM

Scheduled Time (D) = $c*(E)^d$ Months(M)

Where,
E = Total effort required for the project in Man-Months (MM).
D = Total time required for project development in Months (M).
KLOC = the size of the code for the project in Kilo lines of code.
a, b, c, d = The constant parameters for a software project.
EAF = It is an Effort Adjustment Factor

2. The Intermediate COCOMO

The intermediate model estimates software development effort in terms of the size of the program and other related cost drivers parameters of the project. The estimated effort and scheduled time are given by the relationship:

Effort (E) = $a*(KLOC)^b*EAF$ MM

Scheduled Time (D) = $c*(E)^d$ Months(M)

3. The Complete/Detailed COCOMO

It is the advanced model that estimates the software development effort like Intermediate COCOMO in each stage of the software development life cycle process.

Advantages	Disadvantages
• Easy to estimate the total cost of the project. • Easy to implement with various factors. • Provide ideas about historical projects.	• It ignores requirements, customer skills, and hardware issues. • It limits the accuracy of the software costs. • It mostly depends on time factors.

Conclusion

we discuss the project estimation model COCOMO, which describes the effort and development time of the software project. It describes the different projects with an estimate of the effort and scheduled time by considering multiple factors.

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