Cost estimation

and maintenance

For the Cost estimation of our Project we are going to use COCOMO Basic Model. COCOMO is one the most widely used software estimation models in the world. The Constructive Cost Model (COCOMO) is a procedural software cost estimation model. COCOMO is used to estimate size, effort and duration based on the cost of the software.

COCOMO predicts the effort and schedule for a software product development based on inputs relating to the size of the software and a number of cost drivers that affect productivity. COCOMO has three different models that reflect the complexities:

* **Basic Model:** this model would be applied early in a project development. It will provide a rough estimate early on that should be refined later on with one of the other models.
* **Intermediate Model:** this model would be used after you have more detailed requirements for a project.
* **Detailed Model**: when design of the project is complete you can apply this model to further refine your estimate.

Within each of these models there are also three different modes. The mode you choose will depend on your work environment, and the size and constraints of the project itself.

Within these models we are going to COCOMO basic model for our cost estimation process. The mode of work will be **organic** i.e. relatively small software teams developing software in a highly familiar, in-house environment.

**Basic Model:** The basic COCOMO model estimates the software development effort using only Lines Of Code (LOC). Various equations in this model are:

**Effort Applied (E) = ab(KLOC)bb [man-months]**

**Development Time (D) = cb(Effort Applied)db [months]**

**People required (P) = Effort Applied / Development Time [count]**

Where, KLOC is the estimated number of delivered lines (expressed in thousands) of code for project. The coefficients ab, bb, cb and db are given in the following table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Software Projects** | **ab** | **bb** | **cb** | **db** |
| **Organic** | 2.40 | 1.05 | 2.50 | 0.38 |
| **Semi**  **detached** | 3.00 | 1.12 | 2.50 | 0.35 |
| **Embedded** | 3.60 | 1.20 | 2.50 | 0.32 |

**Cost Estimation of our Project:**

For our Project KLOC i.e. total line of code is about **4300 lines** .

**1.**

KLOC=4300

Effort Applied (E) = ab(4300)bb

=2.40X(4300)1.05

**Effort Applied (E) =** **15680.23 PM**

**2.**

Development Time (D) = cb(15680.23)db

=2.50X(15680.23)0.38

**Development Time (D)=98.2 M**

**3.**

People required (P) = Effort Applied / Development Time

=15680.23/98.2

**People required (P) =159.67**