Software Engineering Lab#10 Assignment

1. Using COCOMO estimation method, you have estimated the cost of the project to be 'P' person months. How will you use this information to estimate the duration and average team size for the project?

Answer: As our team is small and consists of some programming experienced members, so this will be an organic model.

c = 2.5 and d = 0.38

Effort = P

Duration time = $c * (Effort)^d = c*P^d = 2.5 \times (P)^{0.38}$ Months

Average team size = Effort/Duration time

$= P/c*P^d = 1/c*P^{d-1} = P^{0.62}/2.5$

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2. List the step by step procedure of using the above information to develop the schedule for the project. What are the other constraints that you will have to take into account while coming up with the schedule for the project?

Ans. So according to these pieces of information, we have gotten the required duration for completing our Project.

So in our project schedule, there are five major phases in which we have to divide this time which we have calculated using the COCOMO model, these major phases are:

1. Requirement gathering
2. Design phase
3. Coding & unit testing
4. Testing
5. Deployment

So for designing the project schedule, we have to distribute given time among these five phases so that we can complete our project within time.

Given time for our project which we have calculated is: 3 months

According to estimated efforts and keeping in mind the time constraints, we have prepared the following schedule for the completion of each phase within a time period.

PHASE	**DESCRIPTION OF WORK**	**TIME PERIOD FOR COMPLETION**
Requirement Gathering and Analysis	We would gather the necessary requirements for our Project and prepared a document for the same.	16 September- 25 September
Design Phase	We would try to complete the design of the software system including all the required features of the project	28 September- 12 October
Coding and unit testing	We would implement the features of the application (tasks) divided into modules and test those modules separately.	13 October - 28 October
Testing	In this phase, we would combine all modules and do the integrated testing of the whole system software.	29 October - 9 November

Deployment	In this phase, we would deploy our applications for the users to interact with our application.	10 November - 13 November

Apart from time & cost, there are some other important factors which we should account through before coming up with an effective project schedule, and these factors are:

1. Scope

   Scope defines in same manner of product deliverables.

2. Quality: Work should be done with quality assurance. Quality works in the same mode as the other constraints. For example, if a project is running late or over budget, the project manager may still be able to deliver the expected items – but they might not be tested as thoroughly (ie, we do not assure that the characteristics are present and working properly – very common!), or some characteristics of that item may be reduced or eliminated. This is how quality operates as a constraint. Some models of the triple constraint triangle use quality instead of scope as the 3rd leg of the triangle. In many classic situations, when time or cost was strained, it was quality – usually through less testing or verification, but sometimes through dropped characteristics – that was compromised.

3. Benefits:

   Benefits represent the value the project is expected to deliver to the organization.

4. Risks

   Everyone recognizes the Risk on a project needs to be addressed and managed. We can see that in any project there may be a level of risk that we are simply not willing to live with, or “tolerate.” That is our risk tolerance. Its simplest and most common expression is in examining the probability of significant risks

occurring, their potential impact on the project if they do occur, and our degree of willingness to live with those potential consequences. Risk refers to "opportunities" as well as "threats," and can be applied in a similar manner.

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References :

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