Software Project Management - Lab 3

Hospital Management System

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Task 1 - Calculating Overall Project Effort using COCOMO

Assuming KLOC = 100, we have the following values:
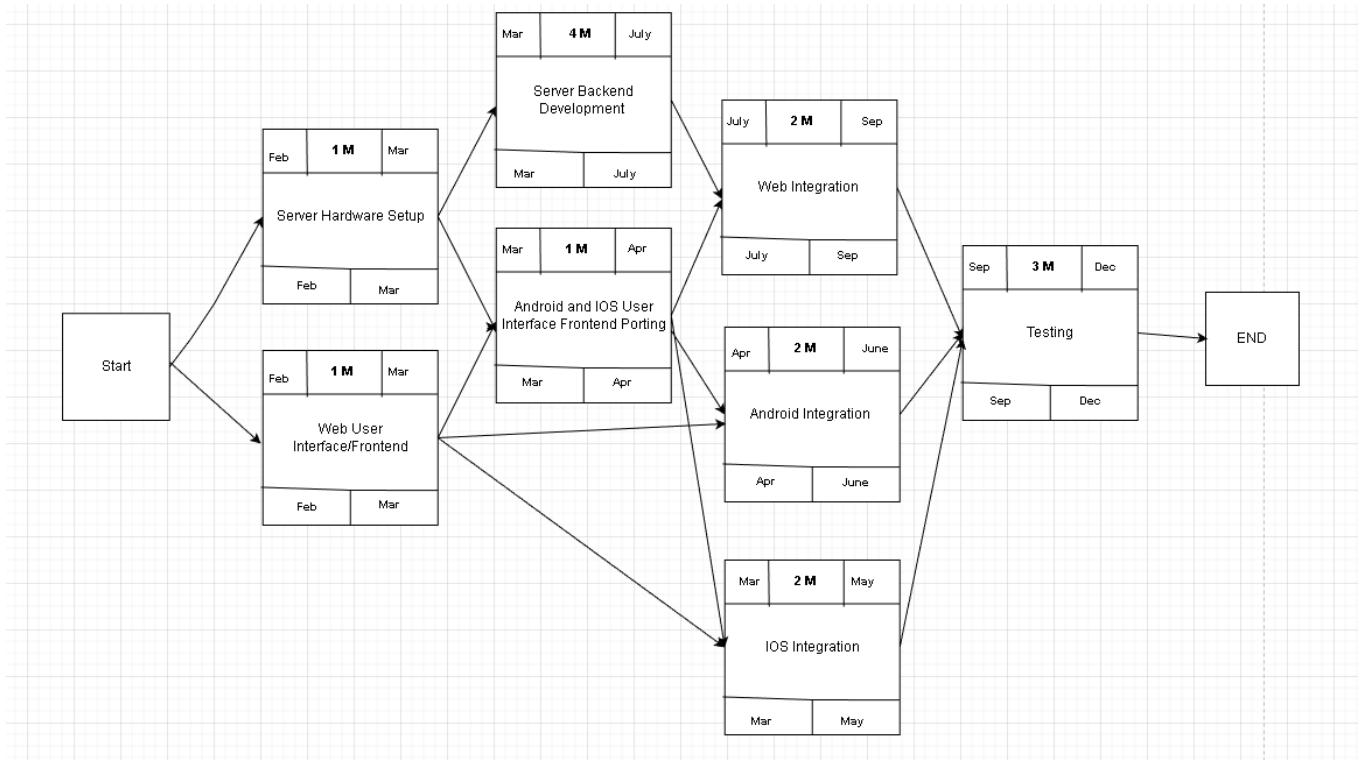
Table 1: Calculating Effort in COCOMO

COCOMO Category	a1	a2	KLOC	Effort (PM)
Organic	*2.4*	*1.05*	*100*	*302.142*
Semi-detached	*3*	*1.12*	*100*	*521.34*
Embedded	*3.6*	*1.2*	*100*	*904.279*

Table 2: Calculating Duration in COCOMO

COCOMO Category	b1	b2	Effort	Duration (months)
Organic	*2.5*	*0.38*	*302.142*	*21.8988*
Semi-detached	*2.5*	*0.35*	*521.34*	*22.3322*
Embedded	*2.5*	*0.32*	*904.279*	*22.0779*

Considering the simplicity of our project's objective and the prevalence of similar implementations in the realm of software development, we have opted to employ the organic COCOMO approach. Additionally, we have noted the existence of multiple libraries that cater to the functionalities specified in the project's requirements, making the task at hand less arduous compared to projects with greater complexity and uncommon specifications. That being said, our project **effort** is approximately 302.14 person-months, and its **duration** is 21.9 months.

Task 2 - Activity Diagram

Task 3 - Project Risks and Countermeasures

Risk	Countermeasures
Budget risk: the cost of the software/app might exceed the budget expected	- Monitor the development process and associated costs closely - Adhere to the original vision for the app - Document and estimate expenses accurately
Information leak risk: the leak of personal information that might be sensitive to the user.	- Implement measures to restrict access to sensitive user information - Employ an antivirus software to protect user data from potential viruses - Establish a verification process to access sensitive information
Overuse risk: many users might use the app which would create a problem to the server and can possibly cause time conflicts while booking appointments	- Ensure reliable application development by engaging experienced developers to prevent server overload - Send users confirmation emails to minimize appointment conflicts - Ensure booking information is updated frequently to display available times
Unclarity risk: team members might not understand the functionality of the application and lack the tools/knowledge in order to complete the project	- Provide detailed project explanations and visual aids to aid team understanding - Provide necessary tools and technologies to facilitate development - Provide necessary information to improve coding skills and other essential skills
Stakeholders risk: stakeholders might not be satisfied with the functionality of the project.	- Collaborate with stakeholders to determine their requirements and expectations - Establish effective communication channels to facilitate stakeholder engagement - Avoid including features or functions that are not requested by stakeholders.