

Effort Estimation & Budgeting Using COCOMO Model

Effort Estimation

Project Name: Car Service Management System

Project Type: Organic

Co-efficient: 2.4

Effort Factor: P = 1.05, T = 0.38

Source line code: 12000

$$\begin{aligned}\text{Person month (PM)} &= 2.4 * 12^{1.05} \\ &= 32.61\end{aligned}$$

$$\begin{aligned}\text{Development Time (DM)} &= 2.5 * 32.61^{0.38} \\ &= 9.391 \cong 10 \text{ months} = 1760 \text{ working hour}\end{aligned}$$

$$\begin{aligned}\text{Required people, ST} &= \text{PM/DM} \\ &= 32.61/9.391 \\ &= 3.472 \cong 4 \text{ people}\end{aligned}$$

Budgeting

Developer salary for 10 months

Per developer salary: 700 Taka

$$\begin{aligned}\text{Total salary for developer} &= 700 * 1760 \\ &= 12,32,000 \text{ Taka}\end{aligned}$$

Requirement Analysis

Time needed: 1 month (22 working days = 176 working hour)

Developer's hourly wage = 500 Taka

Total expense = $500 * 176$

= 88,000 Taka

Total expense for requirement for analysis is 88,000 Taka.

Transportation Cost Estimation = 20,000 Taka

Training And Hardware Expenses Estimation = 1,00,000 Taka

Rent Expense:

Room per month = 8,000 Taka

For 10 month = $8,000 * 10 = 80,000$ Taka

Utilities:

In 10 months (including miscellaneous) = 40,000 Taka

Maintenance (Till 4 months after delivery)

Per month of 10 hours of maintenance

Expense per hour = 1200

Total estimated time needed for maintenance = 40 hours

Total maintenance cost $1200 * 40 = 48,000$ Taka

Total Estimated Expense for Whole Project:

$(12,32,000 + 88,000 + 20,000 + 1,00,000 + 80,000 + 40,000 + 48,000)$

= 16,08,000 Taka

Profit

30% of total estimated expense $16,08,000 * 30\%$

= 4,82,400 Taka

Total project budget: $16,08,000 + 4,82,400 = 20,90,400$ Taka

Budget Summary

Expenses	Amount
Developer Salary	12,32,000
Requirement Analysis	88,000
Transportation	20,000
Training	1,00,000
Rents	80,000
Utilities	40,000
Maintenance [4 Months]	48,000
Profit [30%]	4,82,400
Total	20,90,400 Taka

