

SOFTWARE ENGINEERING SECTION: E GROUP 1

EFFORT ESTIMATION AND BUDGETING USING COCOMO MODEL

EFFORT ESTIMATION

Project Name: **Health Care in Home**

Project Type: **Organic**

Effort Factors: **P= 1.05, T= 0.38**

Co efficient= **2.4**

Source Lines of Code: **10000**

$$\begin{aligned}\text{Person Month or PM} &= 2.4 \times \left(\frac{SLOC}{1000}\right)^{1.05} \\ &= 2.4 \times \left(\frac{10000}{1000}\right)^{1.05} \\ &= 26.93\end{aligned}$$

$$\begin{aligned}\text{Development Time or DM} &= 2.50 \times (PM)^T \\ &= 2.50 \times (26.93)^{0.38} \\ &= 8.74 \cong 9 \text{ Months} = 1584 \text{ Working Hours}\end{aligned}$$

$$\begin{aligned}\text{Number of people's Required} &= \frac{PM}{DM} \\ &= \frac{26.93}{8.74} \\ &= 3.08 \cong 4 \text{ People}\end{aligned}$$

BUDGETING

Salaries for Developers:

Time: 9 Months

Per Working Hour 600 Taka

$600 \times 1584 = 950,400$ [Total 1584 Working Hours]

Total Salaries for a Developer is 950,400 Taka

Requirement Analysis:

Time Required = 1 Month (22 Working Days)

Employee Hourly Wage: 400 Taka

Total Expense: $400 \times 176 = 70,400$ [22 *Working Days* = 176 *Hours*]

Total Expense for Requirement Analysis is 70,400 Taka

Transportation Cost = 20,000 Taka (Estimated)

Training Expense = 50,000 Taka (Estimated)

Rent Expense: Per Month 7,000 Taka

For 9 Months the cost is $7000 \times 9 = 54,000$

Total Rent Expense is 54,000 Taka

Miscellaneous: In 9 months, 30,000 Taka

Maintenance (Till 4 months After Delivery):

Per Month 10 Hours of Maintenance

Per Hour Cost = 1200 Taka

Total Maintenance Cost = $1200 \times 40 = 48,000$ Taka

Project Manager Wage: Per Month 20,000 Taka

In 9 Months = $9 \times 20,000 = 1,80,000$ Taka

Total Estimated Expense for the whole project:

$$950,400 + 70,400 + 20,000 + 50,000 + 54,000 + 30,000 + 48,000 + 1,80,000 \\ = 14,02,800 \text{ Taka}$$

Profit:

$$25\% \text{ of Total Estimated Expense: } 14,02,800 \times 25\% = 350,700 \text{ Taka}$$

$$\text{Total Project Budget: } 14,02,800 + 350,700 = \mathbf{17,53,500 \text{ Taka}}$$

BUDGETING SUMMARY

Field of Expense	Amount
Developer Salary	9,50,400/=
Requirement Analysis	70,000/=
Transportation	20,000/=
Training	50,000/=
Rents	54,000/=
Miscellaneous	30,000/=
Maintenance [4 Months]	48,000/=
Project Manager Wage	1,80,000/=
Profit [25%]	305,700/=
Total	17,53,500/=