

For Intermediate cooco model

Mode	a_i	b_i	c_i	d_i
Organic	3.2	1.05	2.5	0.38
Semi Detached	3.0	1.12	2.5	0.38
Embedded	2.8	1.20	2.5	0.32

cocomo : Detailed Development Model

* It calculates the effect Cost Drivers on each phase of SDLC
 * It uses phase sensitive effort multipliers for each cost driver to determine the amount of effort required to complete each phase of SDLC.

* It establishes module subsystem ~~the~~ Hierarchy

The rating of cost driver is done at the least only where cost driver is most susceptible to variable.

* Adjustment factor (A)

$$A = 0.4 (DD) + 0.3 C + 0.3 I$$

DD is Design Documentation

C is Code

I Integration Testing / Testing

* Size ~~Equation~~ Equivalent

$$\frac{(S \times A)}{100}$$

<u>Mode and Code Size</u>	<u>Plan & Req</u>	<u>System Design</u>	<u>Detail Design</u>	<u>Code Test</u>	<u>Integration Test</u>
Life Cycle	Phase	Value	μp		
Organic Small $S \approx 2$	0.06	0.16	0.26	0.42	0.16
Organic Medium $S \approx 32$	0.06	0.16	0.24	0.38	0.14
Semidet Medium $S \approx 32$	0.7	0.17	0.25	0.33	0.25
Semidet Large $S \approx 128$	0.7	0.17	0.24	0.31	0.22
Embed large $S \approx 128$	0.08	0.18	0.25	0.36	0.31
Embed XL $S \approx 320$	0.08	0.18	0.24	0.24	0.24

Life Cycle Phase value of τ_p					
Organic Small $S \approx 2$	.16	.19	.24	.39	.18
Organic medium $S \approx 32$	.12	.19	.21	.34	.26
S. Det Med $S \approx 32$	.20	.26	.21	.27	.26
S Det Large $S \approx 128$	.22	.27	.19	.25	.29
Emb Large $S \approx 128$	.36	.36	.18	.18	.28
Emb XL $S \approx 320$	.40	.38	.16	.16	.30

$$Effort = \mu_p E$$

$$Development Time = \tau_p D$$

(Detailed COCOMO MODEL)

Question

Consider the project with following main component (1) Screen Edit (2) CLT (3) file I/p and o/p (4) cursor movt (5) Screen Movement. The size of these are estimated to be 4K, 2K, 1K, 3K LOC. Using cocomo Determine

I Overall Cost & Schedule estimate (assume value for cost drivers with atleast 3 being different from 1.0)

II Cost & schedule estimates for different phases.

$$I \quad Effort = 9_i \cdot (KLOC)^{b_i} \times EAF$$

\downarrow \downarrow
 3.2 1.05

S/w Reliability: High
 Lang Experience: Low
 Product Complexity: High
 Analyst Capability: High

$$EAF = 1.15 \times 1.15 \times 0.86 \times 1.07$$

$$= 1.216$$

$$Effort = 3.2 \times (12)^{1.05} \times 1.216$$

$$= 52.9 PM$$

Development Time

$$C_i (E)^{d_i}$$

$$2.5 (52.9)^{0.38}$$

$$= 11.29 \text{ months}$$

$$\text{II} \quad \text{Effort} = M_p \times E$$

Development Time - $T_p D$

Effort

Plan & Requirement	$\approx 0.06 \times 52.9$	} person months
Design	$\approx 0.16 \times 52.9$	
Detail Design	$\approx 0.26 \times 52.9$	
Code & Test	$\approx 0.42 \times 52.9$	
Integration & Test	$\approx 0.16 \times 52.9$	

Development Time

Plan & Request	$\approx 0.10 \times 11.29$	} Months
Design	$\approx 0.19 \times 11.29$	
Detail Design	$\approx 0.24 \times 11.29$	
Code & Test	$\approx 0.39 \times 11.29$	
Integration & Test	$\approx 0.16 \times 11.29$	