# Intermediate Cocomo Problems

Question: *A new project with estimated 400 KLOC embedded system has to be developed. Project manager has a choice of hiring from two pools of developers : with very high application experience and very little experience in the programming language being used or developers of very low application experience but a lot of experience with the programming language. What is the impact of hiring all developers from one or the other pool.*

## Solution(As an embedded model):

EAF :

Very high Application experience: 0.82

Very low programming Language experience: 1.14

EAF = 0.82 \* 1.14 = 0.9348

E (Effort):

E = a(KLOC)^b \* EAF

E = 2.8 (400) ^ 1.20 \* 0.9348

E = 3471 PM

D (Duration) :

D = c \* (E)^d

D = 2.5 \* (3471)^0.32

D = 34 M

P (Person estimation):

P = E/D

P = 3471/34

P = 102 P

Question: *Same case as above*

## Solution(As a Semi Detached model):

EAF :

Very high Application experience: 0.82

Very low programming Language experience: 1.14

EAF = 0.82 \* 1.14 = 0.9348

E(Effort):

E = a(KLOC)^b \* EAF

E = 3.0 (400) ^ 1.12 \* 0.9348

E = 2302.2 PM

D (Duration):

`D = c \* (E)^d

D = 2.5 \* (2302.2)^0.35

D = 37.5 M

P (Person estimation):

P = E/D

P = 2302.2/37.5

P = 61.4 P

Question: *Same case as above*

## Solution(As an Organic model):

EAF :

Very high Application experience: 0.82

Very low programming Language experience: 1.14 => EAF = 0.82 \* 1.14 = 0.9348

E (Effort):

E = a(KLOC)^b \* EAF

E = 3.2 (400) ^ 1.05 \* 0.9348

E = 1614.5 PM

D (Duration) :

D = c \* (E)^d

D = 2.5 \* (1614.5)^0.38

D = 41.4 M

P (Person estimation):

P = E/D

P = 1614.5/41.4

P = 39 P

Question:

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| --- | --- |
| *Project mode* | Embedded |
| *Estimated Size* | 200,000 LOC |
| *Required Software Reliability* | Very High Multiplier = 1.20 |
| *Project Complexity* | High Multiplier = 1.15 |
| *Memory Constraint* | High Multiplier = 1.06 |
| *Analyst Capability* | High Multiplier = 1.86 |
| *Application Experience* | High Multiplier = 1.91 |
| *Software Tools* | Very High Multiplier = 1.83 |

## Solution:

EAF :

EAF = 1.20 \* 1.15 \*1.06 \* 1.86 \* 1.91 = 5.196

E (Effort):

E = a(KLOC)^b \* EAF

E = 2.8 (200) ^ 1.20 \* 5.196

E = 8396

D (Duration) :

D = c \* (E)^d

D = 2.5 \* (8396)^0.32

D = 45 PM

P (Person Estimation):

P = E/D

P = 8396/45

P = 186 P