Cocomo II

Question 1: *A project with all Nominal Cost Drivers and Scale Drivers would have an EAF of 1.00 and exponent, E, of 1.0997. Assuming that the project is projected to consist of 8,000 source lines of code, estimate how much Person-Months of effort is required to complete it.*

# Solution:

The equation for effort in cocomo II is ,

Effort = 2.94 \* (1.0) \* = 28.9 Person-Months

Question 2: *If your project is rated Very High for Complexity (effort multiplier of 1.34), and Low for Language & Tools Experience (effort multiplier of 1.09), and all of the other cost drivers are rated to be Nominal (effort multiplier of 1.00) and SLOC is 8,000. find the effort.*

# Solution:

EAF is product of 1.34 and 1.09 = 1.46

Effort = 2.94 \* (1.46) \* = 42.25 Person-Months

Question 3: *Find the duration.*

# Solution:

Duration = 3.97 \*

Duration = 3.97 \* = 13.05 Months

*Staff Estimation:* Effort/Duration

Staffing = 42.25 / 13.05

Staffing = 3.23 or 3 People.

The SCED Cost Driver: *The COCOMO cost driver for Required Development Schedule (SCED) is unique, and requires a special explanation.*

*The SCED cost driver is used to account for the observation that a project developed on an accelerated schedule will require more effort than a project developed on its optimum schedule. A SCED rating of Very Low corresponds to an Effort Multiplier of 1.43 (in the COCOMO II.2000 model) and means that you intend to finish your project in 75% of the optimum schedule (as determined by a previous COCOMO estimate).*

Question: *Consider the same problem as above, but assume that SCED has a value of very low. Find average staffing ,Effort and Duration.*

Duration = 75% \* 12.1 Months = 9.1 Months

Effort Adjustment Factor = EAF = 1.34 \* 1.09 \* 1.43 = 2.09

Effort = 2.94 \* (2.09) \* = 60.4 Person-Months

Average staffing = (60.4 Person-Months) / (9.1 Months) = 6.7 people

# Using Cocomo II Calculator:

With all Nominal values of cost and scale drivers the EAF would be 1.00 and the 8000 SLOC(new) and 1000 cost per person the results are

Results

Software Development (Elaboration and Construction)

Effort = 28.9 Person-months

Schedule = 11.1 Months

Cost = $28938

Total Equivalent Size = 8000 SLOC

**Acquisition Phase Distribution**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Phase | Effort (Person-months) | Schedule (Months) | Average Staff | Cost (Dollars) |
| Inception | 1.7 | 1.4 | 1.2 | $1736 |
| Elaboration | 6.9 | 4.2 | 1.7 | $6945 |
| Construction | 22.0 | 7.0 | 3.2 | $21993 |
| Transition | 3.5 | 1.4 | 2.5 | $3473 |

**Software Effort Distribution for RUP/MBASE (Person-Months)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Phase/Activity | Inception | Elaboration | Construction | Transition |
| Management | 0.2 | 0.8 | 2.2 | 0.5 |
| Environment/CM | 0.2 | 0.6 | 1.1 | 0.2 |
| Requirements | 0.7 | 1.3 | 1.8 | 0.1 |
| Design | 0.3 | 2.5 | 3.5 | 0.1 |
| Implementation | 0.1 | 0.9 | 7.5 | 0.7 |
| Assessment | 0.1 | 0.7 | 5.3 | 0.8 |
| Deployment | 0.1 | 0.2 | 0.7 | 1.0 |

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