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Class SE 4381.501 Project Management

Assignment Homework #2

COCOMO II

See pages 2 and 3 for mathematical work and rational for value choices.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Effort Multipliers | |  |  | |
| EM | Description | Category | Value | |
| RELY | required software reliability | Very High | 1.26 | |
| DATA | database size | Nominal | 1.00 | |
| CPLX | product complexity | Nominal | 1.00 | |
| RUSE | develop for reuse | High | 1.07 | |
| DOCU | documentation match to LC needs | Nominal | 1.00 | |
| TIME | time constraint | Nominal | 1.00 | |
| STOR | storage constraint | Nominal | 1.00 | |
| PVOL | platform volatility | Nominal | 1.00 | |
| ACAP | analyst capability | Very High | .71 | |
| PCAP | programmer capability | Very High | .76 | |
| APEX | applications experience | Very High | .81 | |
| PLEX | platform experience | Very High | .85 | |
| LTEX | language and tool experience | Very High | .84 | |
| PCON | personnel continuity | Very High | .81 | |
| TOOL | use of software tools | Very High | .78 | |
| SITE | multi-site development | Nominal | 1.00 | |
| SCED | required development schedule | Nominal | 1.00 | |
|  |  |  |  | |
| Scaling Factors | | | |
| SF | Description Category Value |  |  | |
| PREC | precedentedness | Nominal | 3.72 | |
| FLEX | development flexibility | Nominal | 3.04 | |
| RESL | architecture and risk resolution | Nominal | 4.24 | |
| TEAM | team cohesion | Extra High | 0.00 | |
| PMAT | process maturity | High | 3.12 | |

Person\_months = 137

**Equations**

**E = B + 0.01\* Σ (SFi)**

B = 0.91

E = 0.91 + 0.01 \* (3.72+3.04+4.24+0.00+3.12) = 1.0512

**Person\_months = A \* (Size ^ E) \* Π (EMi)**

A = 2.94 (can be calibrated)

Person\_months = 2.94 \* (140^ 1.0512) \* (1.26\*1.07\*.71\*.76\*.81\*.85\*.84\*.81\*.78)

Person\_months = 2.94 \* (140^ 1.0512) \* (1.26\*1.07\*.71\*.76\*.81\*.85\*.84\*.81\*.78)

Person\_months = 2.94 \* (140^ 1.0512) \* (.26)

Person\_months = 2.94 \* (140^ 1.0512) \* (.26)

Person\_months = 137

**Rational**

Effort Multipliers

RELY required software reliability, life critical system, so very high which is the highest for this multiplier

DATA database size, no information given, nominal value

CPLX product complexity, no information given, this system seems straightforward, nominal value

RUSE develop for reuse, this is the third product in the series, so this will probably be reused, High value

DOCU documentation match to LC needs, no information given, nominal value

TIME time constraint, no information given, nominal value

STOR storage constraint, no information given, nominal value

PVOL platform volatility, no information given, nominal value

ACAP analyst capability, team is highly knowledgeable, highest value

PCAP programmer capability, team is highly knowledgeable, highest value

APEX applications experience, team is highly knowledgeable, highest value

PLEX platform experience, team is highly knowledgeable, highest value

LTEX language and tool experience, team is highly knowledgeable, highest value

PCON personnel continuity, team is highly knowledgeable, highest value

TOOL use of software tools, team is highly knowledgeable, highest value

SITE multi-site development, there is a virtual team, doesn’t specify international or not, nominal value

SCED required development schedule, no information given, nominal value

Scaling Factors

PREC precedentedness, no information given, nominal value

FLEX development flexibility, no information given, nominal value

RESL architecture and risk resolution, no information given, nominal value

TEAM team cohesion, team is highly knowledgeable, highest value

PMAT process maturity, CMM Level 3, high value