**Function points Metrics**

MMH

**Slide-3**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Information Domain Value** | **Count** |  | **Simple** | **Average** | **Complex** |  |  |
| **(FP unadjusted)** |  |  |  |  |  |  |  |
| Number of external inputs (EIs) | **12** | **\*** | **3** | **4** | **6** | **=** | **48** |
| Number of external outputs (EOs) | **30** | **\*** | **4** | **5** | **7** | **=** | **150** |
| Number of external inquiries (EQs) | **9** | **\*** | **3** | **4** | **6** | **=** | **6** |
| Number of internal logical files  (ILFs) | **6** | **\*** | **7** | **10** | **15** | **=** | **60** |
| Number of external interface files (EIFs) | **3** | **\*** | **5** | **7** | **10** | **=** | **21** |
|  |  |  |  |  |  | **Count** | **315** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Software Project Type** | **Coefficient <Effort Factor>** | **P** | **T** |
| Organic | 2.4 | 1.05 | 0.38 |
| Semi-detached | 3.0 | 1.12 | 0.35 |
| Embedded | 3.6 | 1.20 | 0.32 |

**COCOMO (Constructive Cost Model)**

**PM :** person-months needed for project (labor working hours)  
**SLOC :** source lines of code  
**P :** project complexity (1.04-1.24)  
**DM :** duration time in months for project (week days)  
**T :** SLOC-dependent coefficient (0.32-0.38)  
**ST :** average staffing necessary

* **Effort => PM = Coefficient<Effort Factor>\*(SLOC/1000)^P** [100,000 SLOC/1000 = 100k SLOC]

= 2.4\*(5000/1000)^1.05

= 13 months = 52 weeks

* **Development time => DM = 2.50\*(PM)^T**

= 2.50\*(13)^0.38

= 6.6= 7months= 28 weeks =( 28\*22day) = 616 Persons\_days

* **Required number of people => ST = PM/DM**

= 13/7 = 1.8 = 2 staff

**Earned value analysis (EVA)**

|  |  |  |
| --- | --- | --- |
| Task | Planned Effort | Actual Effort |
| 1 | 8 | 8.5 |
| 2 | 9.5 | 9 |
| 3 | 5 | 5 |
| 4 | 1 | 2 |
| 5 | 12 | 15 |
| 6 | 20 | 18 |
| 7 | 16 | 17 |
| 8 | 15 | 14 |
| 9 | 10 | 10 |
| 10 | 6 | 6.5 |
| 11 | 13 |  |
| 12 | 6 |  |
| 13 | 4 |  |
| 14 | 7 |  |
| 15 | 11 |  |

Budgeted Cost of Work Performed (BCWP) = 84.5

Budgeted Cost of Work Scheduled (BCWS) = 125.5

Actual Cost of Work Performed (ACWP) = 105

Total Task = 38

Effort Estimated = 616 Persons Days

Budget at Completion (BAC) = DM\*22 =28\*22 = 616

Schedule Performance Index (SPI) = BCWP/BCWS = 84.5/125.5 = 0.70

Schedule Variance (SV) = BCWP – BCWS =84.5-125.5 = -41 Persons Days

Cost Performance Index (CPI) = BCWP/ACWP = 125.5/105 =1.20

Cost variance, CV = BCWP – ACWP =125.5-105 = 20.5

% Schedule for Completion = BCWS/ BAC = 125.5/616 =20.37 % of Work

[% of work scheduled to be done at this time]

% Complete = BCWP/ BAC = 84.5/616 = 13.72 %  
 [% of work completed at this time]