SLOC calculation

FUNCTION POINT CALCULATION

No.	VAF	Weight: 0 (low) – 5 (high)
1	Data communications	1
2	Distributed data processing	2
3	Performance	1
4	Heavily used configuration	1
5	Transaction rate	2
6	On-Line data entry	3
7	End-user efficiency	2
8	On-Line update	3
9	Complex processing	1
10	Reusability	1
11	Installation ease	3
12	Operational ease	3
13	Multiple sites	1
14	Facilitate change	3
15		
16		
		27

Unadjusted FP	173	Adjusted FP	159,16

Language Factor:

- Java: 53
- Javascript: 47
- Medio: 50

SLOC = 50x159,16 = 15916 = 7958

SCALE FACTORS FOR COCOMO 2

Feature	Very Low	Nominal / High	Extra High
Precedentedness			
Organizational understanding of product objectives	General	Considerable	Thorough
Experience in working with related software systems	Moderate	Considerable	Extensive
Concurrent development of associated new hardware and operational procedures	Extensive	Moderate	Some
Need for innovative data processing architectures, algorithms	Considerable	Some	Minimal
Development Flexibility			
Need for software conformance with pre-established requirements	Full	Considerable	Basic
Need for software conformance with external interface specifications	Full	Considerable	Basic
Premium on early completion	High	Medium	Low

Table I-3: RESL Rating Components

Characteristic	Very Low	Low	Nominal	High	Very High	Extra High
Risk Management Plan identifies all critical risk items, establishes milestones for resolving them by PDR.	None	Little	Some	Generally	Mostly	Fully
Schedule, budget, and internal milestones through PDR compatible with Risk Management Plan	None	Little	Some	Generally	Mostly	Fully
Percent of development schedule devoted to establishing architecture, given general product objectives	5	10	17	25	33	40
Percent of required top software architects available to project	20	40	60	80	100	120
Tool support available for resolving risk items, developing and verifying architectural specs	None	Little	Some	Good	Strong	Full
Level of uncertainty in Key architecture drivers: mission, user interface, COTS, hardware, technology, performance.	Extreme	Significant	Consider-able	Some	Little	Very Little
Number and criticality of risk items	> 10 Critical	5-10 Critical	2-4 Critical	1 Critical	> 5 Non-Critical	< 5 Non-Critical

SCALE DRIVERS FOR COCOMO 2

Table I-4 : TEAM Rating Components

Characteristic	Very Low	Low	Nominal	High	Very High	Extra HIgh
Consistency of stakeholder objectives and cultures	Little	Some	Basic	Consider-able	Strong	Full X
Ability, willingness of stakeholders to accommodate other stakeholders' objectives	Little	Some	Basic	Consider-able	Strong	Full X
Experience of stakeholders in operating as a team	None	Little	Little	Basic X	Consider-able	Extensive
Stakeholder teambuilding to achieve shared vision and commitments	None	Little	Little	Basic X	Consider-able	Extensive

Process maturity:

KEY PROCESS AREA	Almost Always (>90%)	Often (60%-90%)	About Half (40%-60%)	Occasionally (10%-40%)	Rarely if ever (<10%)	Does not apply	Don't know	
Requirements Management	☐	☐	☐	☑	☐	☐	☐	40%
Software Project Planning	☐	☐	☐	☑	☐	☐	☐	25%
Software Project Tracking and Oversight	☐	☐	☐	☑	☐	☐	☐	20%
Software Subcontract Management	☐	☐	☐	☐	☐	☑	☐	NULL
Software Quality Assurance	☐	☐	☐	☐	☑	☐	☐	5%
Software Configuration Management	☐	☐	☐	☑	☐	☐	☐	15%
Organization Process Focus	☐	☐	☐	☐	☑	☐	☐	5%
Organization Process Definition	☐	☐	☐	☐	☑	☐	☐	5%
Training Program (individual formation)	☐	☐	☐	☑	☐	☐	☐	10%
Integrated Software Management	☐	☑	☐	☐	☐	☐	☐	70%
Software Product Engineering	☐	☑	☐	☐	☐	☐	☐	70%
Intergroup Coordination	☐	☐	☐	☐	☐	☑	☐	NULL
Peer Reviews	☐	☐	☑	☐	☐	☐	☐	45%
Technology Change Management	☐	☐	☐	☑	☐	☐	☐	10%
Quantitative Process Management	☐	☐	☑	☐	☐	☐	☐	50%
Software Quality Management	☐	☐	☐	☐	☑	☐	☐	5%
Defect Prevention	☐	☐	☐	☐	☑	☐	☐	5%
Process Change Management	☐	☐	☐	☑	☐	☐	☐	20%

SCALE DRIVERS FOR COCOMO 2

Scale Factors	Very Low	Low	Nominal	High	Very High	Extra High
PREC	thoroughly unprecedented	largely unprecedented	somewhat unprecedented	generally familiar	largely familiar	thoroughly familiar
SF_i:	6.20	4.96	3.72	2.48	1.24	0.00
FLEX	rigorous	occasional relaxation	some relaxation	general conformity	some conformity	general goals
SF_i:	5.07	4.05	3.04	2.03	1.01	0.00
RESL	little (20%)	some (40%)	often (60%)	generally (75%)	mostly (90%)	full (100%)
SF_i:	7.07	5.65	4.24	2.83	1.41	0.00
TEAM	very difficult interactions	some difficult interactions	basically cooperative interactions	largely cooperative	highly cooperative	seamless interactions
SF_i:	5.48	4.38	3.29	2.19	1.10	0.00
PMAT	The estimated Equivalent Process Maturity Level (EPML) or					
	SW-CMM Level 1 Lower	SW-CMM Level 1 Upper	SW-CMM Level 2	SW-CMM Level 3	SW-CMM Level 4	SW-CMM Level 5
SF_i:	7.80	6.24	4.68	3.12	1.56	0.00

$$E = \mathbf{0.91} + 0.01 \times \sum_{j=1}^{5} SF_j$$

$0.91 + 0.01 \times (3.72 + 2.03 + 5.65 + 1.1 + 3.12) = 1.0062$

Adjusting factors for COCOMO 2

	Low	Low				High	High
Sum of RELY, DATA, CPLX, DOCU Ratings	5, 6	7, 8	9 - 11	12	13 - 15	16 - 18	19 - 21
Emphasis on reliability, documentation	Very little	Little	Some	Basic	Strong	Very Strong	Extreme
Product complexity	Very simple	Simple	Some	Moderate	Complex	Very complex	Extremely complex
Database size	Small	Small	Small	Moderate	Large	Very Large	Very Large

Table II-12: RUSE Rating Level Summary

	Very Low	Low	Nominal	High	Very High	Extra High
RUSE		None	across project	across program	across product line	across multiple product lines

Table II-13: PDIF Rating Levels

	Low	Nominal	High	Very High	Extra High
Sum of TIME, STOR, and PVOL ratings	8		10 - 12	13 - 15	16, 17
Time and storage constraint	□ 50%	□ 50%	65%	80%	90%
Platform volatility	Very stable	Stable	Somewhat volatile	Volatile	Highly volatile

Table II-10: PERS Rating Levels

	Extra Low	Very Low	Low	Nominal	High	Very High	Extra High
Sum of ACAP, PCAP, PCON Ratings	3, 4	5, 6	7, 8	9	10, 11	12, 13	14, 15
Combined ACAP and PCAP Percentile	20%	39%	45%	55%	65%	75%	85%
Annual Personnel Turnover	45%	30%	20%	12%	9%	5%	4%

Table II-14: PREX Rating Levels

	Extra Low	Very Low	Low	Nominal	High	Very High	Extra High
Sum of AEXP, PEXP, and LTEX ratings	3, 4	5, 6	7, 8	9	10, 11	12, 13	14, 15
Applications, Platform, Language and Tool Experience	≤ 3 mo.	5 months	9 months	1 year	2 years	4 years	6 years

FCIL Rating Levels

	Extra Low	Very Low	Low	Nominal	High	Very High	Extra High
Sum of TOOL and SITE ratings	2	3	4, 5	6	7, 8	9, 10	11
TOOL support	Minimal	Some	Simple CASE tool collection	Basic life-cycle tools	Good; moderately integrated	Strong; moderately integrated	Strong; well integrated
Multisite conditions	Weak support of complex multisite development	Some support of complex M/S devel.	Some support of moderately complex M/S devel.	Basic support of moderately complex M/S devel.	Strong support of moderately complex M/S devel.	Strong support of simple M/ S devel.	Very strong support of collocated or simple M/S devel.

SCED Rating Level Summary

	Very Low	Low	Nominal	High	Very High	Extra High
SCED	75% of nominal	85%	100%	130%	160%	

Table 63. COCOMO II.2000 Calibrated Early Design Model Values

Baseline Effort Constants:	**A** = 2.94;	**B** = 0.91						
Baseline Schedule Constants:	**C** = 3.67;	**D** = 0.28						
Driver	**Symbol**	**XL**	**VL**	**L**	**N**	**H**	**VH**	**XH**
PERS	EM_1	2.12	1.62	1.26	1.00	0.83	0.63	0.50
RCPX	EM_2	0.49	0.60	0.83	1.00	1.33	1.91	2.72
PDIF	EM_3			0.87	1.00	1.29	1.81	2.61
PREX	EM_4	1.59	1.33	1.12	1.00	0.87	0.74	0.62
FCIL	EM_5	1.43	1.30	1.10	1.0	0.87	0.73	0.62
RUSE	EM_6			0.95	1.00	1.07	1.15	1.24
SCED	EM_7		1.43	1.14	1.00	1.00	1.00	

$$PM = \mathbf{2.94}\ S^{E} \times \prod_{i=1}^{n} EM_i$$

2.94 × ((7,958)^1.0062) × 0.63 x 0.49 x 1 x 1 x 0.73 x 0.95 x 1 = 5 PM