APPLIED ECONOMICS FOR ENGINEERS (IF-301)
TABLES

Counting Function Points

Measurement parameter	Count		Weighting factor Simple	Av.	Complex	
Number of user inputs	_____	x	3	4	6	= _____
Number of user outputs	_____	x	4	5	7	= _____
Number of user inquiries	_____	x	3	4	6	= _____
Number of files	_____	x	7	10	15	= _____
Number of ext. interfaces	_____	x	5	7	10	= _____
Count Total ----------→						= _____

Cost Drivers (Intermediate CoCoMo)

Cost Drivers	Ratings					
	Very Low	Low	Nominal	High	Very High	Extra High
Product attributes						
Required software reliability	0.75	0.88	1.00	1.15	1.40	
Size of application database		0.94	1.00	1.08	1.16	
Complexity of the product	0.70	0.85	1.00	1.15	1.30	1.65
Hardware attributes						
Run-time performance constraints			1.00	1.11	1.30	1.66
Memory constraints			1.00	1.06	1.21	1.56
Volatility of the virtual machine environment		0.87	1.00	1.15	1.30	
Required turnabout time		0.87	1.00	1.07	1.15	
Personnel attributes						
Analyst capability	1.46	1.19	1.00	0.86	0.71	
Applications experience	1.29	1.13	1.00	0.91	0.82	
Software engineer capability	1.42	1.17	1.00	0.86	0.70	
Virtual machine experience	1.21	1.10	1.00	0.90		
Programming language experience	1.14	1.07	1.00	0.95		
Project attributes						
Application of software engineering methods	1.24	1.10	1.00	0.91	0.82	
Use of software tools	1.24	1.10	1.00	0.91	0.83	
Required development schedule	1.23	1.08	1.00	1.04	1.10	

Phase Distribution of Effort and Schedule

Table 1 - Phase Distribution of Effort: Organic Mode

Phase	*Small (2 KDSI)*	*Intermediate (8 KDSI)*	*Medium (32 KDSI)*	*Large (128 KDSI)*
Plans & Requirements	*6%*	*6%*	*6%*	*6%*
Product Design	*16*	*16*	*16*	*16*
Detailed Design	*26*	*25*	*24*	*23*
Code & Unit Test	*42*	*40*	*38*	*36*
Integration & Test	*16*	*19*	*22*	*25*
Total:	*100*	*100*	*100*	*100*

Table 2 - Phase Distribution of Schedule: Organic Mode

Phase	*Small (2 KDSI)*	*Intermediate (8 KDSI)*	*Medium (32 KDSI)*	*Large (128 KDSI)*
Plans & Requirements	*10%*	*11%*	*12%*	*13%*
Product Design	*19*	*19*	*19*	*19*
Detailed Design & Code & Unit Test	*63*	*59*	*55*	*51*
Integration & Test	*18*	*22*	*26*	*30*
Total:	*100*	*100*	*100*	*100*

Table 3 - Phase Distribution of Effort: Semidetached Mode

Phase	*Small (2 KDSI)*	*Intermediate (8 KDSI)*	*Medium (32 KDSI)*	*Large (128 KDSI)*
Plans & Requirements	*7%*	*7%*	*7%*	*7%*
Product Design	*17*	*17*	*17*	*17*
Detailed Design	*27*	*26*	*25*	*24*
Code & Unit Test	*37*	*35*	*33*	*31*
Integration & Test	*19*	*22*	*25*	*28*
Total:	*100*	*100*	*100*	*100*

Table 4 - Phase Distribution of Schedule: Semidetached Mode

Phase	*Small (2 KDSI)*	*Intermediate (8 KDSI)*	*Medium (32 KDSI)*	*Large (128 KDSI)*
Plans & Requirements	*16%*	*18%*	*20%*	*22%*
Product Design	*24*	*25*	*26*	*27*
Detailed Design & Code & Unit Test	*56*	*52*	*48*	*44*
Integration & Test	*20*	*23*	*26*	*29*
Total:	*100*	*100*	*100*	*100*

Table 5 - Phase Distribution of Effort: Embedded Mode

Phase	*Small (2 KDSI)*	*Intermediate (8 KDSI)*	*Medium (32 KDSI)*	*Large (128 KDSI)*
Plans & Requirements	*8%*	*8%*	*8%*	*8%*
Product Design	*18*	*18*	*18*	*18*
Detailed Design	*28*	*27*	*26*	*25*
Code & Unit Test	*32*	*30*	*28*	*26*
Integration & Test	*22*	*25*	*28*	*31*
Total:	*100*	*100*	*100*	*100*

Table 6 - Phase Distribution of Schedule: Embedded Mode

Phase	*Small (2 KDSI)*	*Intermediate (8 KDSI)*	*Medium (32 KDSI)*	*Large (128 KDSI)*
Plans & Requirements	*24%*	*28%*	*32%*	*36%*
Product Design	*30*	*32*	*34*	*36*
Detailed Design & Code & Unit Test	*48*	*44*	*40*	*36*
Integration & Test	*22*	*24*	*26*	*28*
Total:	*100*	*100*	*100*	*100*

Object Point Analysis

	Number and source of data tables		
Number of views contained	Total <4	Total <8	Total 8+
<3	simple	simple	medium
3 - 7	simple	medium	difficult
8+	medium	difficult	difficult

Table 1: Object Point Complexity Levels for Screens

	Number and source of data tables		
Number of views contained	Total <4	Total <8	Total 8+
<3	simple	simple	medium
3 - 7	simple	medium	difficult
8+	medium	difficult	difficult

Table 2: Object Point Complexity Levels for Reports

Object type	Simple	Medium	Difficult
Screen	1	2	3
Report	2	5	8
3-GL component	--	--	10

Table 3: Complexity Weights for Object Points

	Very low	Low	Nominal	High	Very High
Developer's experience and capability	4	7	13	25	50
CASE maturity and capability	4	7	13	25	50

Table 4: Productivity Rate for Object Points