

<b>Example 6: How Software Risk Master (SRM) Evaluates Programming Languages</b>					
		<b>SRM supports 89 programming languages in</b>			
		<b>New languages added as data becomes available</b>			
		<b>SRM allows up to 3 different languages per case</b>			
		<b>1000 function points for all 3 Cases</b>			
		<b>\$10,000 per month for all 3 Cases</b>			
		<b>Iterative development for all 3 Cases</b>			
		<b>132 local work hours per month for all 3 Cases</b>			
		<b>Language levels developed by IBM circa 1973</b>			
		<b>2017 is the 30th anniversary of IFPUG function points</b>			
		<b>Low-Level</b>	<b>Mid-level</b>	<b>High-level</b>	
		<b>Language</b>	<b>Language</b>	<b>Language</b>	
		<b>Example</b>	<b>Example</b>	<b>Example</b>	
<b>Programming Language(s)</b>		<b>COBOL</b>	<b>Java</b>	<b>Objective C</b>	
<b>Language level</b>		<b>3.00</b>	<b>6.00</b>	<b>12.00</b>	<b>Language levels developed by IBM circa 1973</b>
<b>Source code statements per FP</b>		<b>106.67</b>	<b>53.33</b>	<b>26.67</b>	<b>Function points developed by IBM circa 1973</b>
<b>Software reuse %</b>		<b>12.99%</b>	<b>18.37%</b>	<b>25.98%</b>	<b>costs; shortens schedules</b>
<b>New code size</b>		<b>92,811</b>	<b>43,536</b>	<b>19,739</b>	
<b>Reused code size</b>		<b>13,856</b>	<b>9,797</b>	<b>6,928</b>	

<b>Total code size</b>		<b>106,667</b>	<b>53,333</b>	<b>26,667</b>	
<b>Activity Staffing</b>					
Requirements		2.41	2.29	2.13	
Design		3.44	3.26	3.00	
Coding		12.90	6.50	3.28	<b>Code staff relates to language levels</b>
Testing		11.44	5.79	2.95	<b>Test staff relates to language levels</b>
Documentation		1.45	1.40	1.31	
Quality Assurance		1.26	1.22	1.15	
Management		1.37	1.31	1.24	
<b>Totals</b>		<b>11.35</b>	<b>6.82</b>	<b>4.55</b>	
<b>Activity Effort Months</b>					
Requirements		11.01	10.32	9.34	
Design		15.59	14.62	13.24	
Coding		98.73	44.17	19.30	<b>Code effort relates to language levels</b>
Testing		68.08	32.47	15.65	<b>Test effort relates to language levels</b>
Documentation		3.40	3.19	2.89	
Quality Assurance		4.25	3.99	3.61	
Management		14.97	14.03	12.71	
<b>Totals</b>		<b>216.04</b>	<b>122.77</b>	<b>76.74</b>	
<b>Activity \$ Costs</b>					
Requirements		\$110,065	\$103,175	\$93,446	
Design		\$155,925	\$146,164	\$132,381	
Coding		\$987,321	\$441,680	\$193,033	<b>Code cost relates to language levels</b>
Testing		\$680,836	\$324,650	\$156,472	<b>Test cost relates to language levels</b>
Documentation		\$34,020	\$31,890	\$28,883	



11	Chill	106.67	3.00		
12	COBOL	106.67	3.00		
13	Coral	106.67	3.00		
14	Fortran	106.67	3.00		
15	Jovial	106.67	3.00		
16	GW Basic	98.46	3.25		
17	Pascal	91.43	3.50		
18	PL/S	91.43	3.50		
19	ABAP	80.00	4.00		
20	Modula	80.00	4.00		
21	PL/I	80.00	4.00		
22	ESPL/I	71.11	4.50		
23	Javascript	71.11	4.50		
24	Basic (interprete	64.00	5.00		
25	Forth	64.00	5.00		
26	haXe	64.00	5.00		
27	Lisp	64.00	5.00		
28	Prolog	64.00	5.00		
29	SH (shell scripts	64.00	5.00		
30	Quick Basic	60.95	5.25		
31	Zimbu	58.18	5.50		
32	C++	53.33	6.00		
33	Go	53.33	6.00		
34	Java	53.33	6.00		
35	PHP	53.33	6.00		
36	Python	53.33	6.00		
37	C#	51.20	6.25		
38	X10	51.20	6.25		
39	Ada 95	49.23	6.50		
40	Ceylon	49.23	6.50		
41	Fantom	49.23	6.50		
42	Dart	47.41	6.75		
43	RPG III	47.41	6.75		
44	CICS	45.71	7.00		

45	DTABL	45.71	7.00		
46	F#	45.71	7.00		
47	Groovy	45.71	7.00		
48	Ruby	45.71	7.00		
49	Simula	45.71	7.00		
50	ColdFusion	42.67	7.50		
51	Erlang	42.67	7.50		
52	DB2	40.00	8.00		
53	LiveScript	40.00	8.00		
54	Oracle	40.00	8.00		
55	R	40.00	8.00		
56	Elixir	37.65	8.50		
57	Haskell	37.65	8.50		
58	Mixed Language	37.65	8.50		
59	Ruby on Rails	37.65	8.50		
60	Julia	35.56	9.00		
61	M	35.56	9.00		
62	OPA	35.56	9.00		
63	Perl	35.56	9.00		
64	APL	32.00	10.00		
65	Delphi	29.09	11.00		
66	Matlab	26.67	12.00		
67	Objective C	26.67	12.00		
68	Swift	26.67	12.00		
69	Visual Basic	26.67	12.00		
70	ASP NET	24.62	13.00		
71	Visual J++	24.62	13.00		
72	Eiffel	22.86	14.00		
73	WebDNA	22.86	14.00		
74	Smalltalk	21.33	15.00		
75	IBM ADF	20.00	16.00		
76	MUMPS	18.82	17.00		
77	Forte	17.78	18.00		
78	APS	16.84	19.00		

79	TELON	16.00	20.00		
80	Mathematica9	12.80	25.00		
81	QBE	12.80	25.00		
82	SQL	12.80	25.00		
83	TranscriptSQL	12.80	25.00		
84	X	12.80	25.00		
85	Mathematica 10	9.14	35.00		
86	BPM	7.11	45.00		
87	Generators	7.11	45.00		
88	Excel	6.40	50.00		
89	IntegraNova	5.33	60.00		
	<b>Average</b>	<b>99.10</b>	<b>10.42</b>		