Appendix-E : Measurement Results

1. 7-zip

Metrics Measurement Results

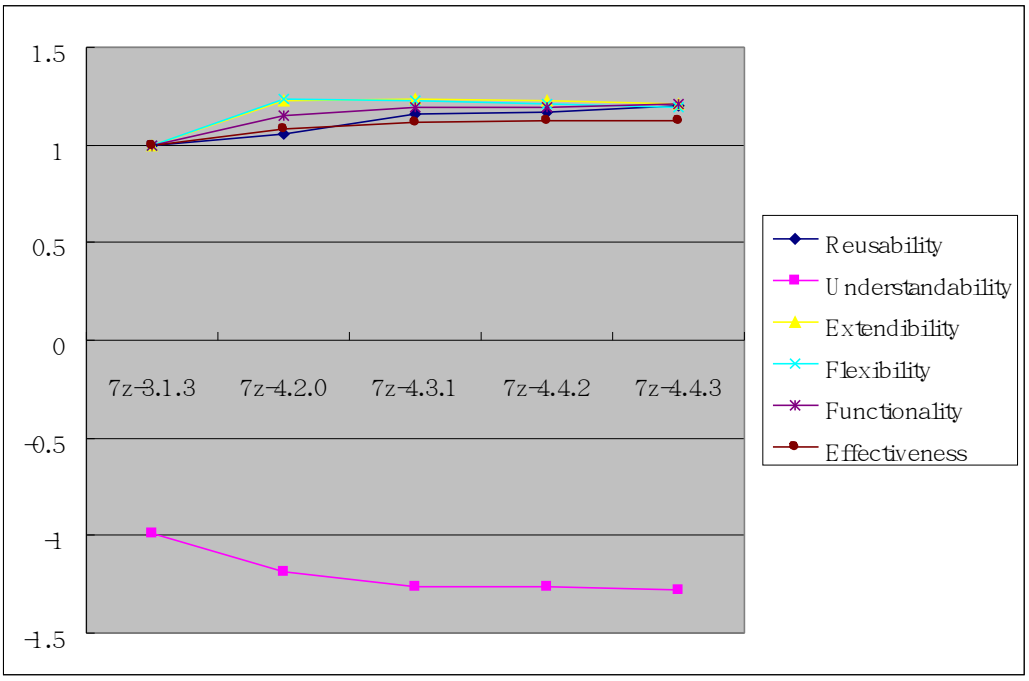
	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
7z-3.1.3	5.9	191	0.25	5.32	0.55	4.26	4.83	0.38	0.83	0.37	383
7z-4.2.0	6.24	212	0.24	5.5	0.51	4.23	4.98	0.38	0.88	0.54	410
7z-4.3.1	6.87	234	0.25	6.15	0.52	4.37	5.44	0.37	0.97	0.49	463
7z-4.4.2	7.02	237	0.25	6.29	0.53	4.41	5.58	0.37	0.99	0.47	465
7z-4.4.3	6.93	254	0.26	6.22	0.52	4.39	5.53	0.36	1.02	0.45	493

Design Properties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
7z-3.1.3	0.37	0.25	4.26	5.32	5.9	0.83
7z-4.2.0	0.54	0.24	4.23	5.5	6.24	0.88
7z-4.3.1	0.49	0.25	4.37	6.15	6.87	0.97
7z-4.4.2	0.47	0.25	4.41	6.29	7.02	0.99
7z-4.4.3	0.45	0.26	4.39	6.22	6.93	1.02
	Cohesion	Design Size	Messaging	Encapsulatio	Hierarchies	Composition
7z-3.1.3	0.38	383	4.83	0.55	191	0.83
7z-4.2.0	0.38	410	4.98	0.51	212	0.88
7z-4.3.1	0.37	463	5.44	0.52	234	0.97
7z-4.4.2	0.37	465	5.58	0.53	237	0.99
7z-4.4.3	0.36	493	5.53	0.52	254	1.02

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
7z-3.1.3	1	-0.99	1	1	1	1
7z-4.2.0	1.06	-1.19	1.23	1.24	1.15	1.09
7z-4.3.1	1.16	-1.26	1.23	1.23	1.19	1.12
7z-4.4.2	1.17	-1.26	1.22	1.21	1.19	1.12
7z-4.4.3	1.2	-1.28	1.21	1.19	1.21	1.12



2. Scum mVM

Metric s Measurement Resu lts

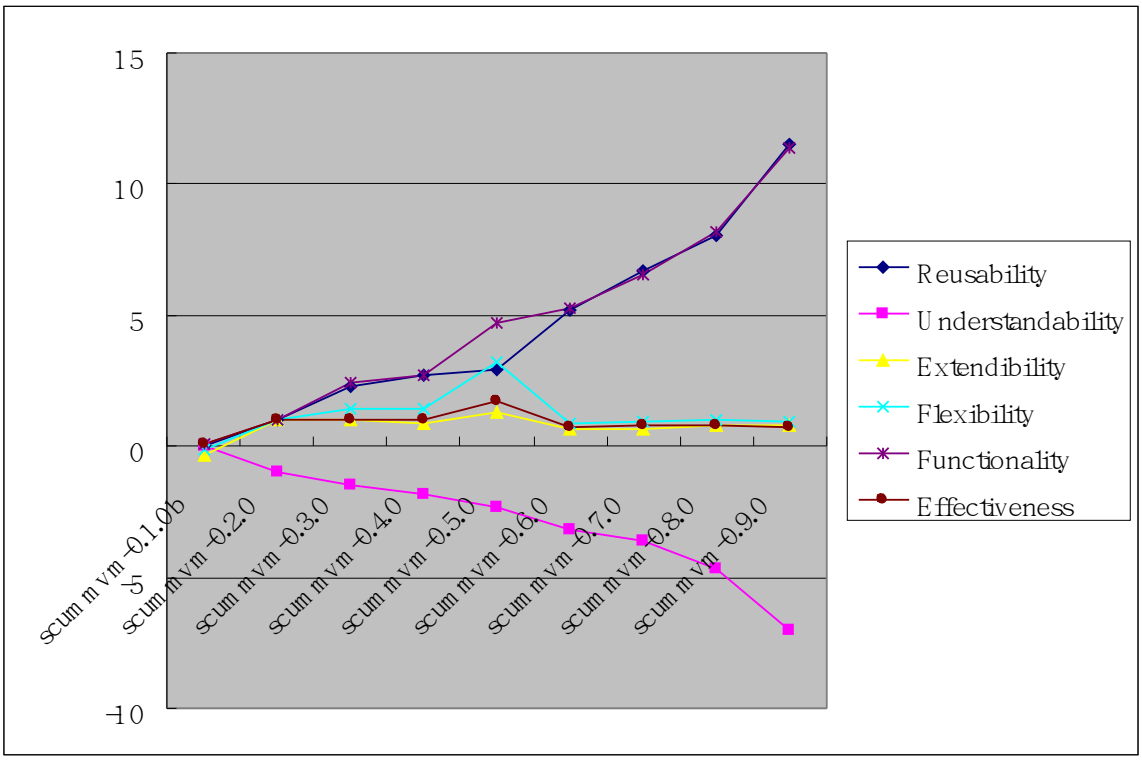
	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
scum m vm _0.2.0	44.45	15	0.4	44.45	0.49	9.39	40.3	0.23	0.58	3.73	33
scum m vm _0.9.0	16.52	411	0.39	10.47	0.45	5.44	10.14	0.6	0.42	3.39	720
scum m vm -0.1.0b	4	0	0	4	0.15	7.5	4	0.15	0	0	2
scum m vm -0.3.0	20.43	72	0.42	20.38	0.38	6.96	17.9	0.44	0.95	4.48	119
scum m vm -0.4.0	20.21	85	0.4	20.17	0.37	7.05	13.55	0.37	1.05	3.8	152
scum m vm -0.5.0	38.61	194	0.21	38.61	0.33	7.19	20.18	0.34	2.55	7.54	167
scum m vm -0.6.0	17.49	183	0.38	10.42	0.48	6.43	9.95	0.41	0.47	2.95	319
scum m vm -0.7.0	17.09	225	0.37	10.27	0.49	5.75	9.85	0.65	0.48	3.06	398
scum m vm -0.8.0	17.43	293	0.39	10.72	0.47	5.87	10.25	0.63	0.51	3.66	489

Design Properties

	Polym orphism	Abstraction	Coupling	Inheritance	Com plexity	Aggregation
scum m vm -0.1.0b	0	0	7.5	4	4	0
scum m vm -0.2.0	3.73	0.4	9.39	44.45	44.45	0.58
scum m vm -0.3.0	4.48	0.42	6.96	20.38	20.43	0.95
scum m vm -0.4.0	3.8	0.4	7.05	20.17	20.21	1.05
scum m vm -0.5.0	7.54	0.21	7.19	38.61	38.61	2.55
scum m vm -0.6.0	2.95	0.38	6.43	10.42	17.49	0.47
scum m vm -0.7.0	3.06	0.37	5.75	10.27	17.09	0.48
scum m vm -0.8.0	3.66	0.39	5.87	10.72	17.43	0.51
scum m vm -0.9.0	3.39	0.39	5.44	10.47	16.52	0.42
	Cohesion	Design Size	M essaging	Encapsulatio	Hierarchies	Com position
scum m vm -0.1.0b	0.15	2	4	0.15	0	0
scum m vm -0.2.0	0.23	33	40.3	0.49	15	0.58
scum m vm -0.3.0	0.44	119	17.9	0.38	72	0.95
scum m vm -0.4.0	0.37	152	13.55	0.37	85	1.05
scum m vm -0.5.0	0.34	167	20.18	0.33	194	2.55
scum m vm -0.6.0	0.41	319	9.95	0.48	183	0.47
scum m vm -0.7.0	0.65	398	9.85	0.49	225	0.48
scum m vm -0.8.0	0.63	489	10.25	0.47	293	0.51
scum m vm -0.9.0	0.6	720	10.14	0.45	411	0.42

Quality At tributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
scum m vm -0.1.0b	0.04	0	-0.35	-0.12	0.11	0.08
scum m vm -0.2.0	1	-0.99	1	1	1	1
scum m vm -0.3.0	2.31	-1.44	0.98	1.43	2.44	1.03
scum m vm -0.4.0	2.68	-1.81	0.86	1.42	2.75	1.01
scum m vm -0.5.0	2.95	-2.35	1.33	3.21	4.69	1.71
scum m vm -0.6.0	5.23	-3.21	0.64	0.88	5.25	0.76
scum m vm -0.7.0	6.7	-3.63	0.69	0.93	6.52	0.77
scum m vm -0.8.0	8.06	-4.65	0.78	1.02	8.16	0.81
scum m vm -0.9.0	11.53	-6.99	0.78	0.91	11.39	0.76


15
10
5
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scum mvm -0.1.0b
scum mvm -0.2.0
scum mvm -0.3.0
scum mvm -0.4.0
scum mvm -0.5.0
scum mvm -0.6.0
scum mvm -0.7.0
scum mvm -0.8.0
scum mvm -0.9.0
Reusability
Understandability
Extendibility
Flexibility
Functionality
Effectiveness

3. KeePass Password Safe

Metrics Measurement Results

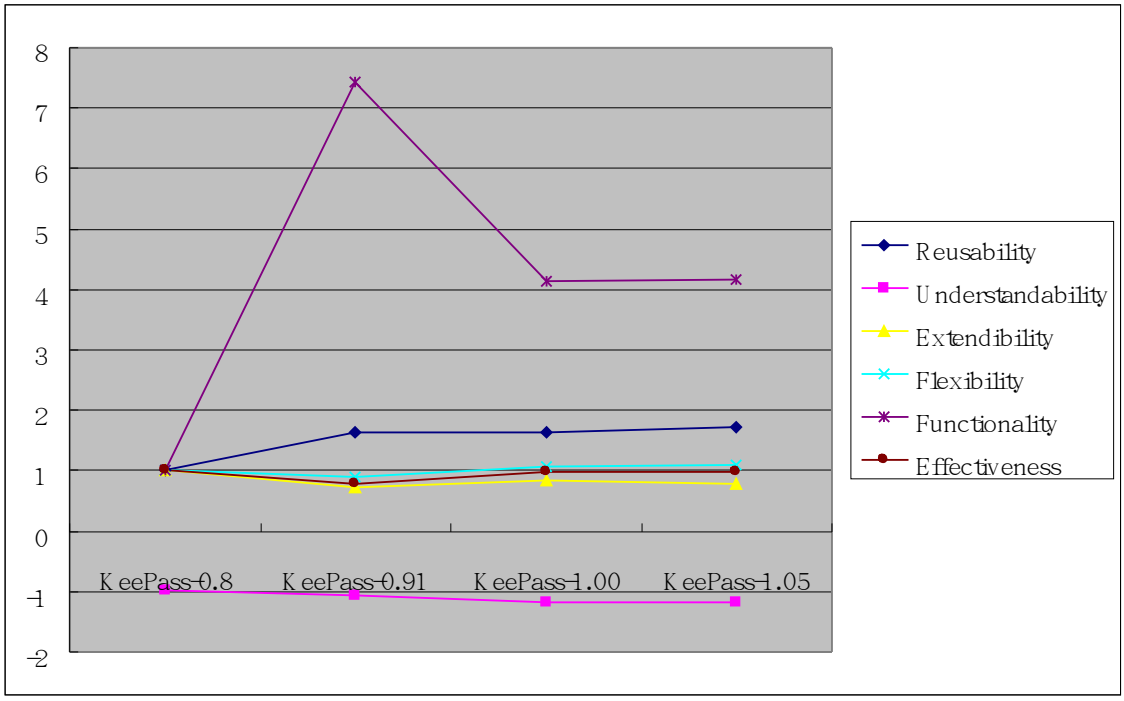
	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
KeePass-0.8	19	1	1	18.87	0.25	9.9	10.17	0.2	1.8	2.93	30
KeePass-0.91	18.54	29	0.41	16.92	0.2	8.6	9.71	0.26	1.41	3.05	63
KeePass-1.00	20.84	14	0.64	19.56	0.27	9.88	10.56	0.23	1.95	2.92	64
KeePass-1.05	18.92	14	0.64	17.79	0.32	9.19	9.44	0.22	1.99	2.71	73

Design Properties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
KeePass-0.8	2.93	1	9.9	18.87	19	1.8
KeePass-0.91	3.05	0.41	8.6	16.92	18.54	1.41
KeePass-1.00	2.92	0.64	9.88	19.56	20.84	1.95
KeePass-1.05	2.71	0.64	9.19	17.79	18.92	1.99
	Cohesion	Design Size	Messaging	Encapsulation	Hierarchies	Composition
KeePass-0.8	0.2	30	10.17	0.25	1	1.8
KeePass-0.91	0.26	63	9.71	0.2	29	1.41
KeePass-1.00	0.23	64	10.56	0.27	14	1.95
KeePass-1.05	0.22	73	9.44	0.32	14	1.99

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
KeePass-0.8	1	-0.99	1	1	1	1
KeePass-0.91	1.64	-1.07	0.74	0.9	7.44	0.79
KeePass-1.00	1.63	-1.18	0.84	1.06	4.14	0.97
KeePass-1.05	1.72	-1.17	0.79	1.1	4.16	0.98



4. Bakery

Metric s Measurement Resu lts

	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
bakery-0.7.0	12.69	15	0.47	8.69	0	3.54	7.62	0.12	0.46	10.31	13
bakery-1.0.0	11.93	15	0.47	8.21	0	3.36	7.21	0.14	0.43	9.64	14
bakery-1.0.1	11.93	15	0.47	8.21	0	3.36	7.21	0.14	0.43	9.64	14
bakery-1.0.2	11.93	15	0.47	8.21	0	3.36	7.21	0.14	0.43	9.64	14
bakery-1.3.0	12.31	14	0.5	8.31	0	3.23	7.38	0.14	0.23	9.92	13
bakery-1.3.1	10.87	14	0.5	7.67	0	3.07	6.87	0.14	0.2	8.73	15
bakery-1.3.10	10.81	23	0.52	6.96	0.08	3.62	6.15	0.15	0.19	7.77	26
bakery-1.3.2	10.05	15	0.53	7.05	0	3.53	6.26	0.16	0.26	8.11	19
bakery-1.3.5	10.81	19	0.47	7.81	0	3.71	6.9	0.16	0.24	8.62	21
bakery-1.3.6	10.9	19	0.47	7.86	0	3.67	6.95	0.16	0.24	8.71	21
bakery-1.3.7	11.08	23	0.52	7.28	0.08	3.68	6.44	0.16	0.2	8	25
bakery-2.3.1	10.89	23	0.52	7.15	0.07	3.59	6.37	0.15	0.19	7.52	27
bakery-2.3.2	11.07	23	0.52	7.15	0.07	3.56	6.37	0.15	0.19	7.74	27
bakery-2.3.3	11.11	23	0.52	7.15	0.07	3.56	6.37	0.15	0.19	7.78	27
bakery-2.3.4	11.85	26	0.46	8.48	0.07	3.89	7.56	0.15	0.22	8.19	27
bakery-2.3.5	11.89	26	0.46	8.52	0.07	3.89	7.59	0.15	0.22	8.22	27

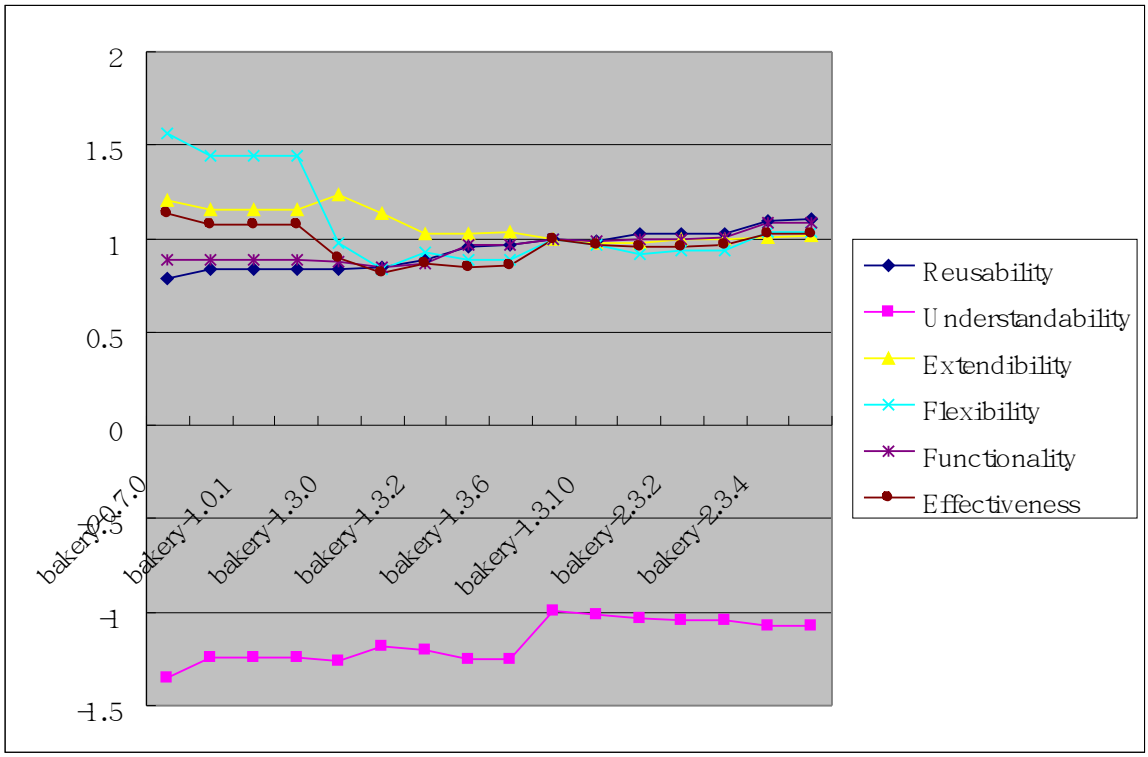
Design Properties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
bakery-0.7.0	10.31	0.47	3.54	8.69	12.69	0.46
bakery-1.0.0	9.64	0.47	3.36	8.21	11.93	0.43
bakery-1.0.1	9.64	0.47	3.36	8.21	11.93	0.43
bakery-1.0.2	9.64	0.47	3.36	8.21	11.93	0.43
bakery-1.3.0	9.92	0.5	3.23	8.31	12.31	0.23
bakery-1.3.1	8.73	0.5	3.07	7.67	10.87	0.2
bakery-1.3.2	8.11	0.53	3.53	7.05	10.05	0.26
bakery-1.3.5	8.62	0.47	3.71	7.81	10.81	0.24
bakery-1.3.6	8.71	0.47	3.67	7.86	10.9	0.24
bakery-1.3.7	8	0.52	3.68	7.28	11.08	0.2
bakery-1.3.10	7.77	0.52	3.62	6.96	10.81	0.19
bakery-2.3.1	7.52	0.52	3.59	7.15	10.89	0.19
bakery-2.3.2	7.74	0.52	3.56	7.15	11.07	0.19
bakery-2.3.3	7.78	0.52	3.56	7.15	11.11	0.19
bakery-2.3.4	8.19	0.46	3.89	8.48	11.85	0.22
bakery-2.3.5	8.22	0.46	3.89	8.52	11.89	0.22

	Cohesion	Design Size	Messaging	Encapsulatio	Hierarchies	Composition
bakery-0.7.0	0.12	13	7.62	0	15	0.46
bakery-1.0.0	0.14	14	7.21	0	15	0.43
bakery-1.0.1	0.14	14	7.21	0	15	0.43
bakery-1.0.2	0.14	14	7.21	0	15	0.43
bakery-1.3.0	0.14	13	7.38	0	14	0.23
bakery-1.3.1	0.14	15	6.87	0	14	0.2
bakery-1.3.2	0.16	19	6.26	0	15	0.26
bakery-1.3.5	0.16	21	6.9	0	19	0.24
bakery-1.3.6	0.16	21	6.95	0	19	0.24
bakery-1.3.7	0.16	25	6.44	0.08	23	0.2
bakery-1.3.10	0.15	26	6.15	0.08	23	0.19
bakery-2.3.1	0.15	27	6.37	0.07	23	0.19
bakery-2.3.2	0.15	27	6.37	0.07	23	0.19
bakery-2.3.3	0.15	27	6.37	0.07	23	0.19
bakery-2.3.4	0.15	27	7.56	0.07	26	0.22
bakery-2.3.5	0.15	27	7.59	0.07	26	0.22

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
bakery-0.7.0	0.79	-1.35	1.21	1.56	0.89	1.14
bakery-1.0.0	0.84	-1.24	1.16	1.45	0.89	1.07
bakery-1.0.1	0.84	-1.24	1.16	1.45	0.89	1.07
bakery-1.0.2	0.84	-1.24	1.16	1.45	0.89	1.07
bakery-1.3.0	0.83	-1.26	1.23	0.98	0.88	0.9
bakery-1.3.1	0.84	-1.19	1.13	0.84	0.85	0.82
bakery-1.3.2	0.88	-1.2	1.02	0.92	0.87	0.86
bakery-1.3.5	0.96	-1.25	1.02	0.88	0.96	0.85
bakery-1.3.6	0.96	-1.26	1.04	0.89	0.97	0.85
bakery-1.3.7	1	-0.99	1	1	1	1
bakery-1.3.10	0.98	-1.02	0.97	0.96	0.98	0.97
bakery-2.3.1	1.02	-1.03	0.97	0.92	0.99	0.95
bakery-2.3.2	1.03	-1.04	0.99	0.94	1	0.96
bakery-2.3.3	1.03	-1.04	0.99	0.94	1	0.96
bakery-2.3.4	1.1	-1.07	1.01	1.03	1.08	1.02
bakery-2.3.5	1.1	-1.07	1.01	1.04	1.09	1.02



5. gunworld

Metrics Measurement Results

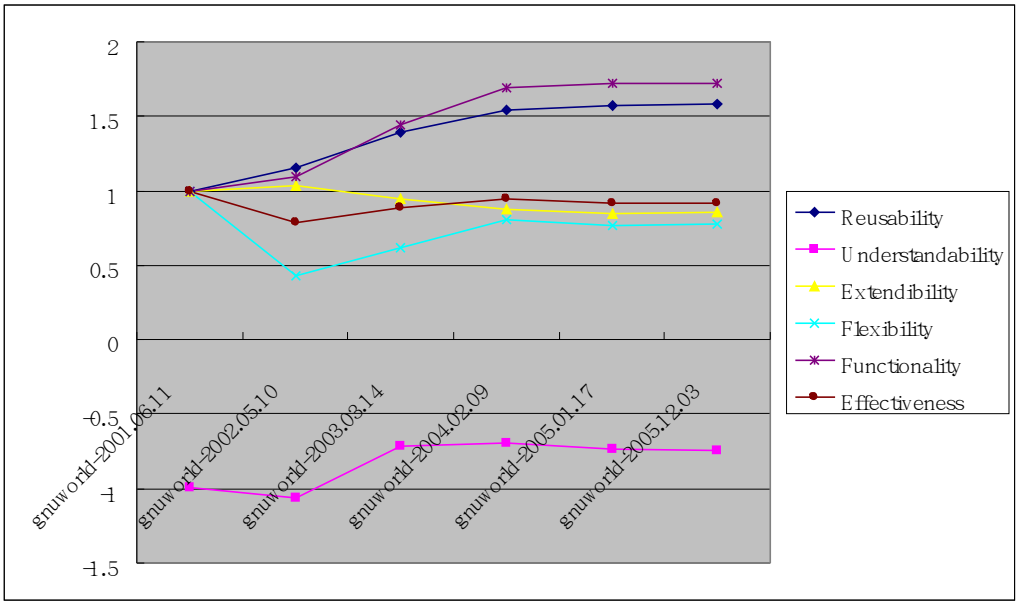
	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
gnuworld-2001.06.11	22.98	10	0.4	20.5	0.02	7.91	20.5	0.19	0.07	7.57	44
gnuworld-2002.05.10	24.63	12	0.42	22.33	0.02	7.9	22.33	0.21	0	7.08	51
gnuworld-2003.03.14	19.25	26	0.42	17.81	0.04	6.17	17.81	0.23	0	5.61	75
gnuworld-2004.02.09	19.44	33	0.33	17.94	0.05	6.24	17.81	0.23	0.01	6.36	88
gnuworld-2005.01.17	18.99	34	0.32	17.6	0.04	6.29	17.47	0.23	0.01	6.18	92
gnuworld-2005.12.03	19.36	34	0.32	17.95	0.04	6.32	17.82	0.23	0.01	6.28	92

Design Properties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
gnuworld-2001.06.11	7.57	0.4	7.91	20.5	22.98	0.07
gnuworld-2002.05.10	7.08	0.42	7.9	22.33	24.63	0
gnuworld-2003.03.14	5.61	0.42	6.17	17.81	19.25	0
gnuworld-2004.02.09	6.36	0.33	6.24	17.94	19.44	0.01
gnuworld-2005.01.17	6.18	0.32	6.29	17.6	18.99	0.01
gnuworld-2005.12.03	6.28	0.32	6.32	17.95	19.36	0.01
	Cohesion	Design Size	Messaging	Encapsulation	Hierarchies	Composition
gnuworld-2001.06.11	0.19	44	20.5	0.02	10	0.07
gnuworld-2002.05.10	0.21	51	22.33	0.02	12	0
gnuworld-2003.03.14	0.23	75	17.81	0.04	26	0
gnuworld-2004.02.09	0.23	88	17.81	0.05	33	0.01
gnuworld-2005.01.17	0.23	92	17.47	0.04	34	0.01
gnuworld-2005.12.03	0.23	92	17.82	0.04	34	0.01

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
gnuworld-2001.06.11	1	-0.99	1	1	1	1
gnuworld-2002.05.10	1.15	-1.07	1.03	0.43	1.1	0.79
gnuworld-2003.03.14	1.39	-0.71	0.94	0.62	1.45	0.89
gnuworld-2004.02.09	1.54	-0.69	0.88	0.81	1.69	0.94
gnuworld-2005.01.17	1.57	-0.74	0.84	0.77	1.72	0.91
gnuworld-2005.12.03	1.58	-0.75	0.86	0.77	1.73	0.92



6. Interactive Visualization Framework

Metrics Measurement Results

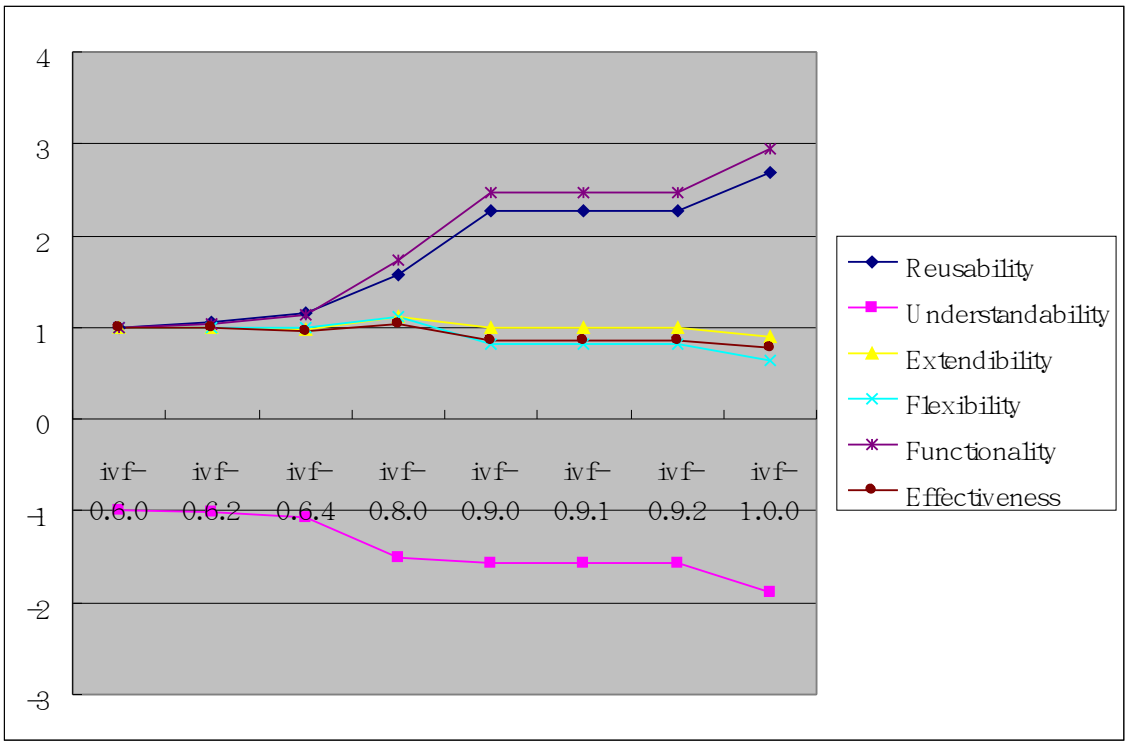
	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
ivf0.6.0	13.58	61	0.3	13.58	0.8	4.64	12.04	0.29	1.62	3.54	69
ivf0.6.2	13.72	67	0.28	13.72	0.8	4.67	12.16	0.29	1.6	3.57	75
ivf0.6.4	13.14	83	0.28	13.14	0.77	4.24	10.72	0.29	1.63	3.41	96
ivf0.8.0	16.14	169	0.21	16.14	0.8	4.76	13.79	0.24	1.41	4.87	145
ivf0.9.0	12.83	307	0.25	12.83	0.65	4.19	11.2	0.44	0.94	3.96	227
ivf0.9.1	12.79	308	0.25	12.79	0.65	4.18	11.16	0.44	0.93	3.94	228
ivf0.9.2	12.79	308	0.25	12.79	0.65	4.18	11.16	0.44	0.93	3.94	228
ivf1.0.0	12.33	399	0.24	12.33	0.64	4.26	10.51	0.41	0.62	3.43	295

Design Properties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
ivf0.6.0	3.54	0.3	4.64	13.58	13.58	1.62
ivf0.6.2	3.57	0.28	4.67	13.72	13.72	1.6
ivf0.6.4	3.41	0.28	4.24	13.14	13.14	1.63
ivf0.8.0	4.87	0.21	4.76	16.14	16.14	1.41
ivf0.9.0	3.96	0.25	4.19	12.83	12.83	0.94
ivf0.9.1	3.94	0.25	4.18	12.79	12.79	0.93
ivf0.9.2	3.94	0.25	4.18	12.79	12.79	0.93
ivf1.0.0	3.43	0.24	4.26	12.33	12.33	0.62
	Cohesion	Design Size	Messaging	Encapsulation	Hierarchies	Composition
ivf0.6.0	0.29	69	12.04	0.8	61	1.62
ivf0.6.2	0.29	75	12.16	0.8	67	1.6
ivf0.6.4	0.29	96	10.72	0.77	83	1.63
ivf0.8.0	0.24	145	13.79	0.8	169	1.41
ivf0.9.0	0.44	227	11.2	0.65	307	0.94
ivf0.9.1	0.44	228	11.16	0.65	308	0.93
ivf0.9.2	0.44	228	11.16	0.65	308	0.93
ivf1.0.0	0.41	295	10.51	0.64	399	0.62

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
ivf0.6.0	1	-0.99	1	1	1	1
ivf0.6.2	1.05	-1.01	0.99	1	1.05	0.99
ivf0.6.4	1.16	-1.06	0.98	0.99	1.13	0.97
ivf0.8.0	1.57	-1.51	1.12	1.12	1.73	1.03
ivf0.9.0	2.26	-1.57	1	0.83	2.46	0.86
ivf0.9.1	2.27	-1.57	1	0.82	2.47	0.86
ivf0.9.2	2.27	-1.57	1	0.82	2.47	0.85
ivf1.0.0	2.69	-1.88	0.89	0.65	2.95	0.78


4
3
2
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-1
-2
-3
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ivf-0.6.2
ivf-0.6.4
ivf-0.8.0
ivf-0.9.0
ivf-0.9.1
ivf-0.9.2
ivf-1.0.0
Reusability
Understandability
Extendibility
Flexibility
Functionality
Effectiveness

7. Logging Framework for C++

Metrics Measurement Results

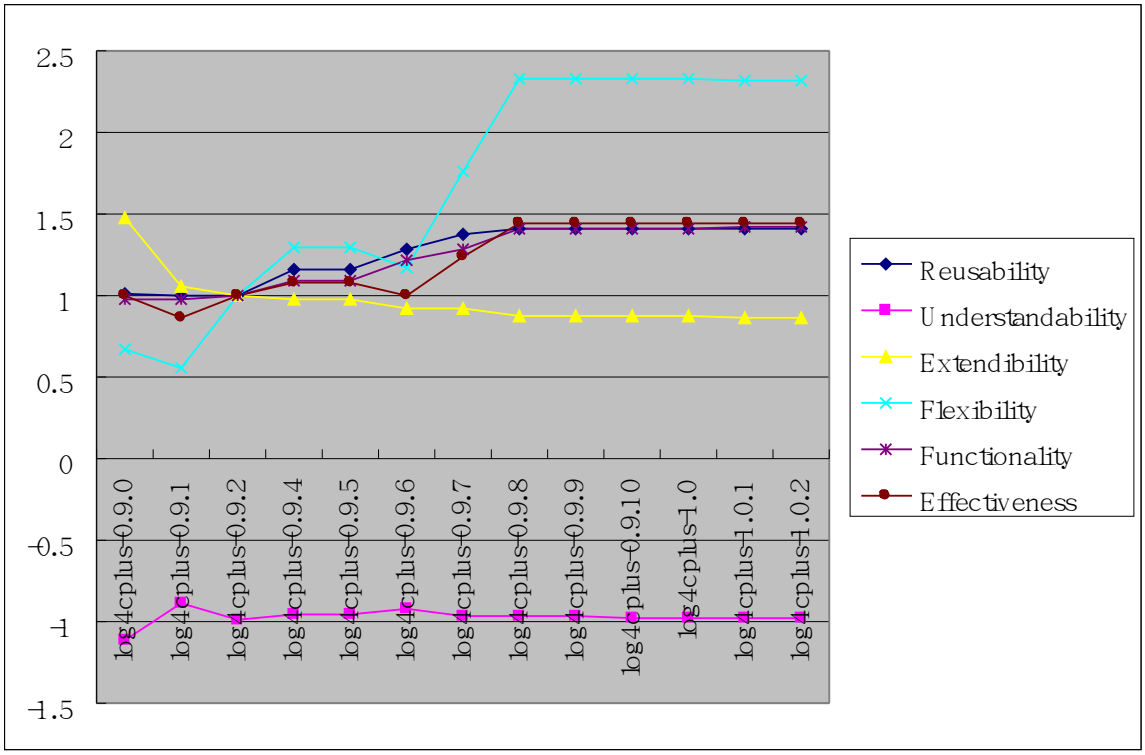
	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
log4cplus-0.9.0	7.38	15	0.67	6.31	0.37	3.1	6.31	0.41	0	2.62	29
log4cplus-0.9.1	6.1	23	0.52	5.05	0.42	3.07	5.05	0.41	0	2.02	42
log4cplus-0.9.2	5.78	28	0.54	4.49	0.36	3.02	4.49	0.38	0.02	1.96	49
log4cplus-0.9.4	5.6	35	0.49	4.47	0.35	2.62	4.47	0.4	0.03	1.78	60
log4cplus-0.9.5	5.6	35	0.49	4.47	0.35	2.62	4.47	0.4	0.03	1.78	60
log4cplus-0.9.6	5.46	45	0.42	4.44	0.34	2.44	4.44	0.42	0.03	1.71	70
log4cplus-0.9.7	5.75	49	0.39	4.71	0.34	2.46	4.71	0.43	0.05	1.75	76
log4cplus-0.9.8	5.81	62	0.32	4.65	0.37	2.49	4.65	0.41	0.07	1.81	81
log4cplus-0.9.9	5.81	62	0.32	4.65	0.37	2.49	4.65	0.41	0.07	1.81	81
log4cplus-0.9.10	5.83	62	0.32	4.67	0.37	2.51	4.67	0.41	0.07	1.83	81
log4cplus-1.0	5.83	62	0.32	4.67	0.37	2.51	4.67	0.41	0.07	1.83	81
log4cplus-1.0.1	5.98	62	0.32	4.69	0.37	2.54	4.69	0.41	0.07	1.83	81
log4cplus-1.0.2	5.99	62	0.32	4.69	0.37	2.54	4.69	0.41	0.07	1.83	81

Design Properties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
log4cplus-0.9.0	2.62	0.67	3.1	6.31	7.38	0
log4cplus-0.9.1	2.02	0.52	3.07	5.05	6.1	0
log4cplus-0.9.2	1.96	0.54	3.02	4.49	5.78	0.02
log4cplus-0.9.4	1.78	0.49	2.62	4.47	5.6	0.03
log4cplus-0.9.5	1.78	0.49	2.62	4.47	5.6	0.03
log4cplus-0.9.6	1.71	0.42	2.44	4.44	5.46	0.03
log4cplus-0.9.7	1.75	0.39	2.46	4.71	5.75	0.05
log4cplus-0.9.8	1.81	0.32	2.49	4.65	5.81	0.07
log4cplus-0.9.9	1.81	0.32	2.49	4.65	5.81	0.07
log4cplus-0.9.10	1.83	0.32	2.51	4.67	5.83	0.07
log4cplus-1.0	1.83	0.32	2.51	4.67	5.83	0.07
log4cplus-1.0.1	1.83	0.32	2.54	4.69	5.98	0.07
log4cplus-1.0.2	1.83	0.32	2.54	4.69	5.99	0.07
	Cohesion	Design Size	Messaging	Encapsulatio	Hierarchies	Composition
log4cplus-0.9.0	0.41	29	6.31	0.37	15	0
log4cplus-0.9.1	0.41	42	5.05	0.42	23	0
log4cplus-0.9.2	0.38	49	4.49	0.36	28	0.02
log4cplus-0.9.4	0.4	60	4.47	0.35	35	0.03
log4cplus-0.9.5	0.4	60	4.47	0.35	35	0.03
log4cplus-0.9.6	0.42	70	4.44	0.34	45	0.03
log4cplus-0.9.7	0.43	76	4.71	0.34	49	0.05
log4cplus-0.9.8	0.41	81	4.65	0.37	62	0.07
log4cplus-0.9.9	0.41	81	4.65	0.37	62	0.07
log4cplus-0.9.10	0.41	81	4.67	0.37	62	0.07
log4cplus-1.0	0.41	81	4.67	0.37	62	0.07
log4cplus-1.0.1	0.41	81	4.69	0.37	62	0.07
log4cplus-1.0.2	0.41	81	4.69	0.37	62	0.07

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
log4cplus-0.9.0	1.01	-1.12	1.48	0.67	0.98	1
log4cplus-0.9.1	1.01	-0.89	1.06	0.55	0.97	0.86
log4cplus-0.9.2	1	-0.99	1	1	1	1
log4cplus-0.9.4	1.15	-0.95	0.97	1.29	1.09	1.08
log4cplus-0.9.5	1.15	-0.95	0.97	1.29	1.09	1.08
log4cplus-0.9.6	1.28	-0.93	0.92	1.17	1.21	1
log4cplus-0.9.7	1.38	-0.97	0.93	1.77	1.29	1.24
log4cplus-0.9.8	1.41	-0.96	0.87	2.32	1.41	1.44
log4cplus-0.9.9	1.41	-0.96	0.87	2.32	1.41	1.44
log4cplus-0.9.10	1.41	-0.97	0.87	2.33	1.41	1.44
log4cplus-1.0	1.41	-0.97	0.87	2.33	1.41	1.44
log4cplus-1.0.1	1.41	-0.98	0.87	2.32	1.42	1.44
log4cplus-1.0.2	1.41	-0.98	0.87	2.32	1.42	1.44



8. Mock Object s for C++

Metric s Measurement Resu lts

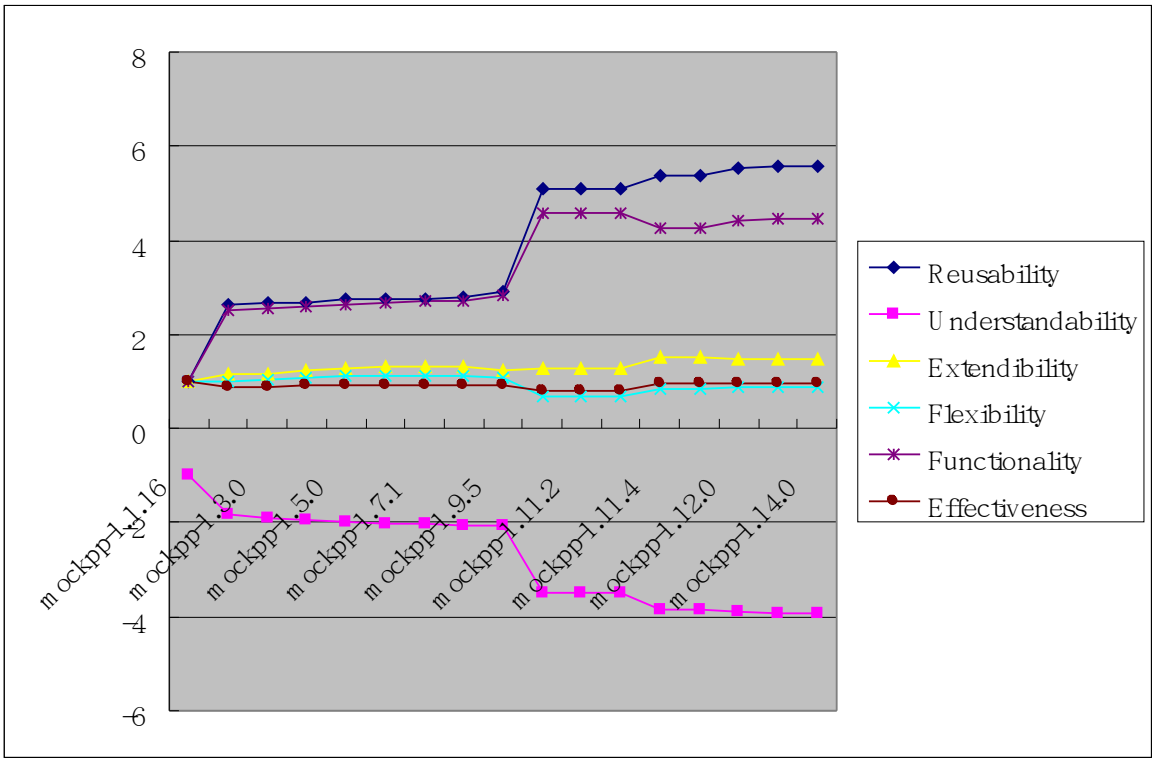
	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
mockpp-1.1.16	5.43	37	0.57	5.02	0.6	5.17	5.02	0.32	1.02	1.28	47
mockpp-1.11.1	7.3	333	0.38	6.65	0.37	3.87	6.65	0.43	0.12	1.65	402
mockpp-1.11.2	7.3	333	0.38	6.65	0.37	3.87	6.65	0.43	0.12	1.65	402
mockpp-1.11.3	7.3	333	0.38	6.65	0.37	3.87	6.65	0.43	0.12	1.65	402
mockpp-1.11.4	7.47	252	0.51	7.46	0.35	4.01	6.86	0.42	0.33	1.81	427
mockpp-1.11.5	7.47	252	0.51	7.46	0.35	4.01	6.86	0.42	0.33	1.81	427
mockpp-1.12.0	7.31	267	0.49	7.31	0.37	3.97	6.73	0.45	0.42	1.82	444
mockpp-1.13.0	7.33	269	0.49	7.32	0.37	3.98	6.75	0.45	0.42	1.82	445
mockpp-1.14.0	7.33	269	0.49	7.32	0.37	3.98	6.75	0.45	0.42	1.82	446
mockpp-1.2.0	4.79	159	0.38	4.46	0.49	3.52	4.46	0.42	0.55	1.81	190
mockpp-1.3.0	4.87	164	0.38	4.51	0.5	3.53	4.51	0.41	0.56	1.86	194
mockpp-1.4.0	5.02	164	0.38	4.65	0.5	3.53	4.65	0.41	0.56	1.99	194
mockpp-1.5.0	5.35	166	0.37	4.96	0.5	3.54	4.96	0.42	0.57	2.07	196
mockpp-1.6.1	5.34	172	0.38	4.95	0.49	3.52	4.95	0.42	0.56	2.09	199
mockpp-1.7.1	5.44	173	0.38	4.98	0.49	3.56	4.98	0.41	0.56	2.09	200
mockpp-1.8.2	5.37	175	0.38	4.92	0.49	3.51	4.92	0.41	0.55	2.08	202
mockpp-1.9.5	5.16	186	0.39	4.73	0.48	3.46	4.73	0.42	0.53	1.99	213

Design Pro perties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
mockpp-1.1.16	1.28	0.57	5.17	5.02	5.43	1.02
mockpp-1.11.1	1.65	0.38	3.87	6.65	7.3	0.12
mockpp-1.11.2	1.65	0.38	3.87	6.65	7.3	0.12
mockpp-1.11.3	1.65	0.38	3.87	6.65	7.3	0.12
mockpp-1.11.4	1.81	0.51	4.01	7.46	7.47	0.33
mockpp-1.11.5	1.81	0.51	4.01	7.46	7.47	0.33
mockpp-1.12.0	1.82	0.49	3.97	7.31	7.31	0.42
mockpp-1.13.0	1.82	0.49	3.98	7.32	7.33	0.42
mockpp-1.14.0	1.82	0.49	3.98	7.32	7.33	0.42
mockpp-1.2.0	1.81	0.38	3.52	4.46	4.79	0.55
mockpp-1.3.0	1.86	0.38	3.53	4.51	4.87	0.56
mockpp-1.4.0	1.99	0.38	3.53	4.65	5.02	0.56
mockpp-1.5.0	2.07	0.37	3.54	4.96	5.35	0.57
mockpp-1.6.1	2.09	0.38	3.52	4.95	5.34	0.56
mockpp-1.7.1	2.09	0.38	3.56	4.98	5.44	0.56
mockpp-1.8.2	2.08	0.38	3.51	4.92	5.37	0.55
mockpp-1.9.5	1.99	0.39	3.46	4.73	5.16	0.53
	Cohesion	Design Size	Messaging	Encapsulatio	Hierarchies	Composition
mockpp-1.1.16	0.32	47	5.02	0.6	37	1.02
mockpp-1.11.1	0.43	402	6.65	0.37	333	0.12
mockpp-1.11.2	0.43	402	6.65	0.37	333	0.12
mockpp-1.11.3	0.43	402	6.65	0.37	333	0.12
mockpp-1.11.4	0.42	427	6.86	0.35	252	0.33
mockpp-1.11.5	0.42	427	6.86	0.35	252	0.33
mockpp-1.12.0	0.45	444	6.73	0.37	267	0.42
mockpp-1.13.0	0.45	445	6.75	0.37	269	0.42
mockpp-1.14.0	0.45	446	6.75	0.37	269	0.42
mockpp-1.2.0	0.42	190	4.46	0.49	159	0.55
mockpp-1.3.0	0.41	194	4.51	0.5	164	0.56
mockpp-1.4.0	0.41	194	4.65	0.5	164	0.56
mockpp-1.5.0	0.42	196	4.96	0.5	166	0.57
mockpp-1.6.1	0.42	199	4.95	0.49	172	0.56
mockpp-1.7.1	0.41	200	4.98	0.49	173	0.56
mockpp-1.8.2	0.41	202	4.92	0.49	175	0.55
mockpp-1.9.5	0.42	213	4.73	0.48	186	0.53

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
mockpp-1.1.16	1	-0.99	1	1	1	1
mockpp-1.11.1	5.09	-3.51	1.27	0.67	4.6	0.8
mockpp-1.11.2	5.09	-3.51	1.27	0.67	4.6	0.8
mockpp-1.11.3	5.09	-3.51	1.27	0.67	4.6	0.8
mockpp-1.11.4	5.36	-3.84	1.52	0.83	4.27	0.95
mockpp-1.11.5	5.36	-3.84	1.52	0.83	4.27	0.95
mockpp-1.12.0	5.55	-3.91	1.49	0.88	4.44	0.95
mockpp-1.13.0	5.56	-3.92	1.49	0.88	4.46	0.95
mockpp-1.14.0	5.57	-3.92	1.49	0.88	4.46	0.96
mockpp-1.2.0	2.62	-1.84	1.15	1.01	2.5	0.87
mockpp-1.3.0	2.66	-1.88	1.17	1.04	2.55	0.88
mockpp-1.4.0	2.67	-1.93	1.23	1.09	2.58	0.91
mockpp-1.5.0	2.73	-1.98	1.29	1.13	2.63	0.93
mockpp-1.6.1	2.76	-2.01	1.3	1.13	2.69	0.93
mockpp-1.7.1	2.77	-2.03	1.31	1.12	2.7	0.93
mockpp-1.8.2	2.78	-2.04	1.3	1.12	2.71	0.93
mockpp-1.9.5	2.9	-2.07	1.25	1.07	2.81	0.9



9. The Spirit Parser Library

Metrics Measurement Results

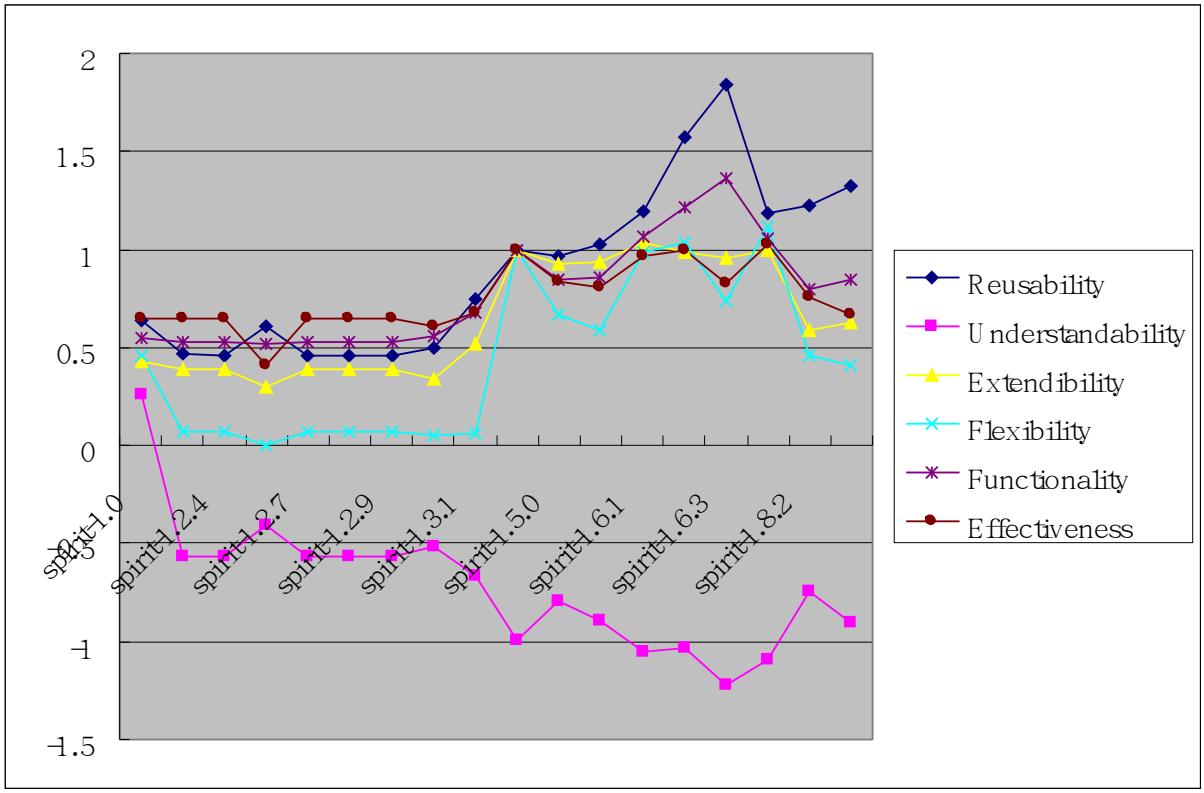
	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
spirit-1.0	3.22	17	0.24	3.04	0.78	2.35	3.04	0.49	0	0.3	23
spirit-1.2.0	4.06	43	0.51	3.85	0.56	3.96	3.85	0.24	0	0.13	52
spirit-1.2.4	4.06	43	0.51	3.83	0.56	3.96	3.83	0.24	0	0.13	52
spirit-1.2.5	4.77	52	0.17	4.58	0.33	2.38	4.58	0.16	0	0.04	52
spirit-1.2.7	4.06	43	0.51	3.83	0.56	3.96	3.83	0.24	0	0.13	52
spirit-1.2.8	4.06	43	0.51	3.83	0.56	3.96	3.83	0.24	0	0.13	52
spirit-1.2.9	4.06	43	0.51	3.83	0.56	3.96	3.83	0.24	0	0.13	52
spirit-1.3.0	3.69	53	0.49	3.48	0.54	3.78	3.48	0.25	0	0.11	65
spirit-1.3.1	5.12	58	0.52	4.81	0.54	3.71	4.8	0.27	0	0.11	94
spirit-1.3.2	5.36	77	0.48	4.76	0.49	3.02	4.55	0.29	0.04	0.6	159
spirit-1.5.0	4.52	52	0.54	3.86	0.46	2.56	3.86	0.33	0.02	0.46	149
spirit-1.6.0	4.57	56	0.57	3.87	0.44	2.46	3.86	0.29	0.02	0.41	174
spirit-1.6.1	4.84	77	0.52	4.2	0.47	2.59	4.2	0.3	0.04	0.57	220
spirit-1.6.2	5.77	87	0.46	4.97	0.48	2.45	4.96	0.38	0.05	0.47	285
spirit-1.6.3	4.68	106	0.49	4.1	0.42	2.11	4.1	0.36	0.03	0.43	397
spirit-1.7.0	4.75	77	0.53	4.08	0.46	2.71	4.08	0.29	0.05	0.56	227
spirit-1.8.2	5.69	51	0.45	4.8	0.51	2.54	4.79	0.28	0.03	0.04	212
spirit-1.8.3	4.79	52	0.44	4.08	0.41	2.01	4.07	0.22	0.02	0.09	270

Design Properties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
spirit-1.2.9	0.13	0.51	3.96	3.83	4.06	0
spirit-1.2.8	0.13	0.51	3.96	3.83	4.06	0
spirit-1.3.2	0.6	0.48	3.02	4.76	5.36	0.04
spirit-1.3.0	0.11	0.49	3.78	3.48	3.69	0
spirit-1.3.1	0.11	0.52	3.71	4.81	5.12	0
spirit-1.6.3	0.43	0.49	2.11	4.1	4.68	0.03
spirit-1.7.0	0.56	0.53	2.71	4.08	4.75	0.05
spirit-1.2.0	0.13	0.51	3.96	3.85	4.06	0
spirit-1.2.7	0.13	0.51	3.96	3.83	4.06	0
spirit-1.6.2	0.47	0.46	2.45	4.97	5.77	0.05
spirit-1.2.5	0.04	0.17	2.38	4.58	4.77	0
spirit-1.2.4	0.13	0.51	3.96	3.83	4.06	0
spirit-1.8.2	0.04	0.45	2.54	4.8	5.69	0.03
spirit-1.6.1	0.57	0.52	2.59	4.2	4.84	0.04
spirit-1.5.0	0.46	0.54	2.56	3.86	4.52	0.02
spirit-1.0	0.3	0.24	2.35	3.04	3.22	0
spirit-1.6.0	0.41	0.57	2.46	3.87	4.57	0.02
spirit-1.8.3	0.09	0.44	2.01	4.08	4.79	0.02
	Cohesion	Design Size	Messaging	Encapsulation	Hierarchies	Composition
spirit-1.2.9	0.24	52	3.83	0.56	43	0
spirit-1.2.8	0.24	52	3.83	0.56	43	0
spirit-1.3.2	0.29	159	4.55	0.49	77	0.04
spirit-1.3.0	0.25	65	3.48	0.54	53	0
spirit-1.3.1	0.27	94	4.8	0.54	58	0
spirit-1.6.3	0.36	397	4.1	0.42	106	0.03
spirit-1.7.0	0.29	227	4.08	0.46	77	0.05
spirit-1.2.0	0.24	52	3.85	0.56	43	0
spirit-1.2.7	0.24	52	3.83	0.56	43	0
spirit-1.6.2	0.38	285	4.96	0.48	87	0.05
spirit-1.2.5	0.16	52	4.58	0.33	52	0
spirit-1.2.4	0.24	52	3.83	0.56	43	0
spirit-1.8.2	0.28	212	4.79	0.51	51	0.03
spirit-1.6.1	0.3	220	4.2	0.47	77	0.04
spirit-1.5.0	0.33	149	3.86	0.46	52	0.02
spirit-1.0	0.49	23	3.04	0.78	17	0
spirit-1.6.0	0.29	174	3.86	0.44	56	0.02
spirit-1.8.3	0.22	270	4.07	0.41	52	0.02

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
spirit-1.0	0.64	0.26	0.43	0.46	0.55	0.65
spirit-1.2.0	0.46	-0.57	0.39	0.07	0.53	0.65
spirit-1.2.4	0.46	-0.57	0.39	0.07	0.53	0.65
spirit-1.2.5	0.61	-0.4	0.3	0	0.52	0.41
spirit-1.2.7	0.46	-0.57	0.39	0.07	0.53	0.65
spirit-1.2.8	0.46	-0.57	0.39	0.07	0.53	0.65
spirit-1.2.9	0.46	-0.57	0.39	0.07	0.53	0.65
spirit-1.3.0	0.5	-0.52	0.34	0.05	0.56	0.61
spirit-1.3.1	0.75	-0.66	0.52	0.06	0.68	0.67
spirit-1.3.2	1	-0.99	1	1	1	1
spirit-1.5.0	0.97	-0.8	0.92	0.67	0.85	0.83
spirit-1.6.0	1.02	-0.9	0.93	0.59	0.86	0.81
spirit-1.6.1	1.2	-1.05	1.03	0.98	1.06	0.97
spirit-1.6.2	1.57	-1.03	0.99	1.04	1.21	0.99
spirit-1.6.3	1.84	-1.22	0.95	0.74	1.36	0.83
spirit-1.7.0	1.19	-1.09	1	1.12	1.06	1.02
spirit-1.8.2	1.22	-0.74	0.58	0.46	0.8	0.76
spirit-1.8.3	1.32	-0.9	0.63	0.41	0.84	0.67



10. Visual Component Framework

Metrics Measurement Results

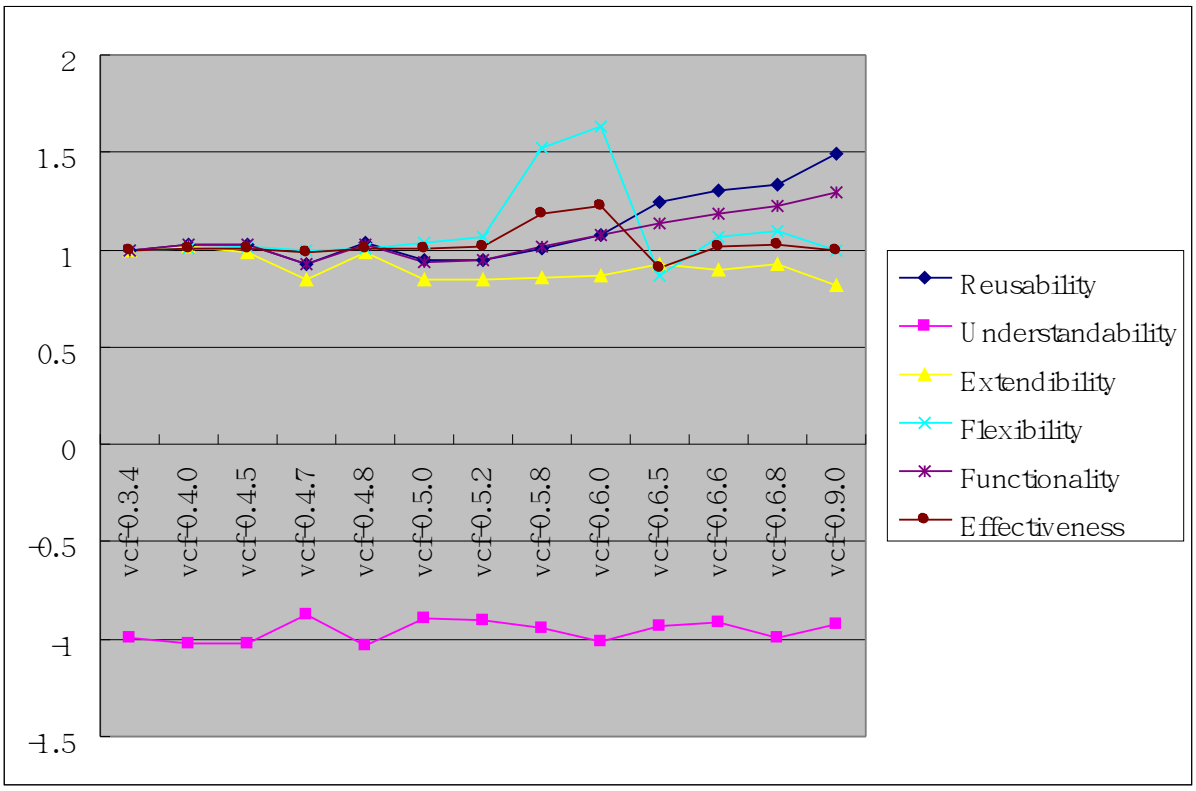
	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
vcf0.3.4	9.75	796	0.26	9.53	0.21	3.64	9.1	0.27	0.13	4.08	944
vcf0.4.0	9.95	829	0.26	9.71	0.2	3.7	9.29	0.28	0.13	4.16	969
vcf0.4.5	9.84	845	0.26	9.6	0.19	3.73	9.11	0.28	0.14	4.02	988
vcf0.4.7	9.09	750	0.25	8.81	0.21	3.81	8.37	0.29	0.15	3.39	874
vcf0.4.8	9.9	846	0.26	9.65	0.19	3.75	9.17	0.28	0.14	4.01	995
vcf0.5.0	9.23	772	0.25	8.93	0.21	3.85	8.5	0.29	0.16	3.44	895
vcf0.5.2	9.29	787	0.25	8.98	0.2	3.89	8.56	0.29	0.17	3.46	906
vcf0.5.8	10.11	859	0.22	9.69	0.19	3.96	9.14	0.3	0.28	3.7	952
vcf0.6.0	10.31	935	0.22	9.85	0.17	3.99	9.33	0.31	0.31	3.85	1042
vcf0.6.5	10.2	949	0.22	9.68	0.17	3.49	9.33	0.37	0.11	3.8	1184
vcf0.6.6	10.89	1018	0.21	10.29	0.21	3.71	9.92	0.38	0.15	3.76	1260
vcf0.6.8	11.13	1059	0.21	10.49	0.2	3.8	10.12	0.38	0.16	3.96	1308
vcf0.9.0	10.28	1235	0.22	9.62	0.25	3.63	9.3	0.38	0.14	3.16	1654

Design Properties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
vcf0.4.0	4.16	0.26	3.7	9.71	9.95	0.13
vcf0.4.7	3.39	0.25	3.81	8.81	9.09	0.15
vcf0.5.8	3.7	0.22	3.96	9.69	10.11	0.28
vcf0.4.5	4.02	0.26	3.73	9.6	9.84	0.14
vcf0.4.8	4.01	0.26	3.75	9.65	9.9	0.14
vcf0.5.2	3.46	0.25	3.89	8.98	9.29	0.17
vcf0.5.0	3.44	0.25	3.85	8.93	9.23	0.16
vcf0.6.0	3.85	0.22	3.99	9.85	10.31	0.31
vcf0.9.0	3.16	0.22	3.63	9.62	10.28	0.14
vcf0.6.5	3.8	0.22	3.49	9.68	10.2	0.11
vcf0.6.6	3.76	0.21	3.71	10.29	10.89	0.15
vcf0.6.8	3.96	0.21	3.8	10.49	11.13	0.16
vcf0.3.4	4.08	0.26	3.64	9.53	9.75	0.13
	Cohesion	Design Size	Messaging	Encapsulation	Hierarchies	Composition
vcf0.4.0	0.28	969	9.29	0.2	829	0.13
vcf0.4.7	0.29	874	8.37	0.21	750	0.15
vcf0.5.8	0.3	952	9.14	0.19	859	0.28
vcf0.4.5	0.28	988	9.11	0.19	845	0.14
vcf0.4.8	0.28	995	9.17	0.19	846	0.14
vcf0.5.2	0.29	906	8.56	0.2	787	0.17
vcf0.5.0	0.29	895	8.5	0.21	772	0.16
vcf0.6.0	0.31	1042	9.33	0.17	935	0.31
vcf0.9.0	0.38	1654	9.3	0.25	1235	0.14
vcf0.6.5	0.37	1184	9.33	0.17	949	0.11
vcf0.6.6	0.38	1260	9.92	0.21	1018	0.15
vcf0.6.8	0.38	1308	10.12	0.2	1059	0.16
vcf0.3.4	0.27	944	9.1	0.21	796	0.13

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
vcf0.3.4	1	-0.99	1	1	1	1
vcf0.4.0	1.03	-1.02	1.01	1.01	1.03	1.01
vcf0.4.5	1.02	-1.03	0.99	1.02	1.02	1.01
vcf0.4.7	0.92	-0.87	0.84	0.99	0.92	0.98
vcf0.4.8	1.03	-1.03	0.99	1.01	1.03	1
vcf0.5.0	0.94	-0.89	0.85	1.03	0.94	1
vcf0.5.2	0.95	-0.9	0.85	1.07	0.95	1.02
vcf0.5.8	1.01	-0.95	0.85	1.52	1.01	1.19
vcf0.6.0	1.08	-1.01	0.87	1.63	1.07	1.22
vcf0.6.5	1.25	-0.94	0.92	0.87	1.13	0.9
vcf0.6.6	1.31	-0.92	0.9	1.07	1.19	1.01
vcf0.6.8	1.34	-0.99	0.92	1.09	1.22	1.02
vcf0.9.0	1.49	-0.92	0.82	1	1.29	0.99



11. Boost C++ Libraries Frame work

Metrics Measurement Results

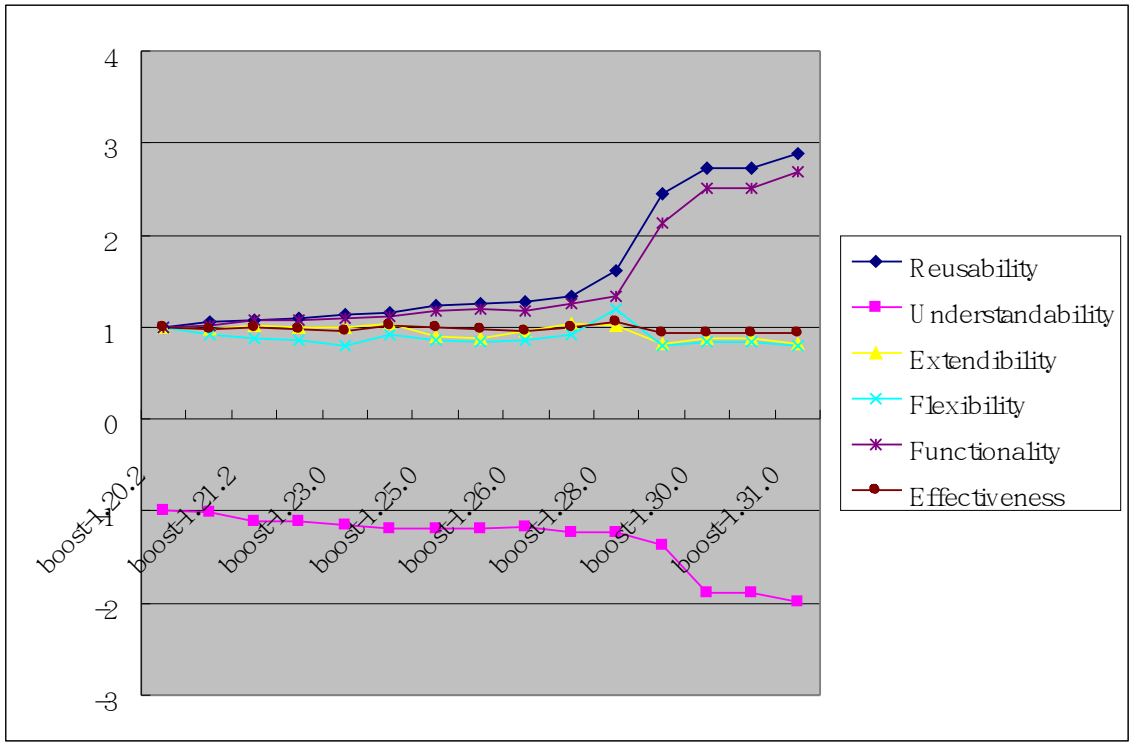
	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
boost-1.20.2	4.93	145	0.43	4.46	0.44	2.77	4.4	0.41	0.08	0.33	340
boost-1.21.1	5.17	150	0.43	4.68	0.44	2.87	4.63	0.41	0.07	0.3	367
boost-1.21.2	5.17	182	0.49	4.7	0.42	2.95	4.65	0.4	0.07	0.29	387
boost-1.22.0	5.14	188	0.49	4.69	0.41	2.89	4.64	0.39	0.07	0.27	406
boost-1.23.0	5.07	193	0.51	4.63	0.4	2.89	4.58	0.39	0.07	0.27	440
boost-1.24.0	5.09	193	0.51	4.65	0.4	2.88	4.59	0.39	0.08	0.29	452
boost-1.25.0	5.2	218	0.48	4.71	0.44	3.09	4.66	0.38	0.08	0.24	519
boost-1.25.1	5.15	228	0.46	4.67	0.44	3.08	4.62	0.38	0.08	0.24	531
boost-1.26.0	5.07	217	0.47	4.59	0.41	2.73	4.54	0.4	0.08	0.25	523
boost-1.27.0	5.09	233	0.48	4.58	0.42	2.71	4.53	0.41	0.07	0.29	555
boost-1.28.0	4.38	244	0.51	3.97	0.36	2.07	3.92	0.46	0.13	0.23	736
boost-1.29.0	7.32	597	0.25	7	0.45	2.13	6.97	0.43	0.1	0.07	1074
boost-1.30.0	6.78	720	0.27	6.45	0.44	2.4	6.43	0.31	0.08	0.17	1375
boost-1.30.2	6.79	723	0.27	6.46	0.44	2.4	6.43	0.31	0.08	0.17	1380
boost-1.31.0	6.88	808	0.28	6.43	0.45	2.46	6.39	0.29	0.08	0.14	1496

Design Properties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
boost-1.29.0	0.07	0.25	2.13	7	7.32	0.1
boost-1.21.1	0.3	0.43	2.87	4.68	5.17	0.07
boost-1.27.0	0.29	0.48	2.71	4.58	5.09	0.07
boost-1.32.0	0	0	0	0	0	0
boost-1.30.2	0.17	0.27	2.4	6.46	6.79	0.08
boost-1.28.0	0.23	0.51	2.07	3.97	4.38	0.13
boost-1.23.0	0.27	0.51	2.89	4.63	5.07	0.07
boost-1.26.0	0.25	0.47	2.73	4.59	5.07	0.08
boost-1.22.0	0.27	0.49	2.89	4.69	5.14	0.07
boost-1.25.0	0.24	0.48	3.09	4.71	5.2	0.08
boost-1.25.1	0.24	0.46	3.08	4.67	5.15	0.08
boost-1.21.2	0.29	0.49	2.95	4.7	5.17	0.07
boost-1.30.0	0.17	0.27	2.4	6.45	6.78	0.08
boost-1.24.0	0.29	0.51	2.88	4.65	5.09	0.08
boost-1.31.0	0.14	0.28	2.46	6.43	6.88	0.08
boost-1.20.2	0.33	0.43	2.77	4.46	4.93	0.08
	Cohesion	Design Size	Messaging	Encapsulation	Hierarchies	Composition
boost-1.29.0	0.43	1074	6.97	0.45	597	0.1
boost-1.21.1	0.41	367	4.63	0.44	150	0.07
boost-1.27.0	0.41	555	4.53	0.42	233	0.07
boost-1.32.0	0	0	0	0	0	0
boost-1.30.2	0.31	1380	6.43	0.44	723	0.08
boost-1.28.0	0.46	736	3.92	0.36	244	0.13
boost-1.23.0	0.39	440	4.58	0.4	193	0.07
boost-1.26.0	0.4	523	4.54	0.41	217	0.08
boost-1.22.0	0.39	406	4.64	0.41	188	0.07
boost-1.25.0	0.38	519	4.66	0.44	218	0.08
boost-1.25.1	0.38	531	4.62	0.44	228	0.08
boost-1.21.2	0.4	387	4.65	0.42	182	0.07
boost-1.30.0	0.31	1375	6.43	0.44	720	0.08
boost-1.24.0	0.39	452	4.59	0.4	193	0.08
boost-1.31.0	0.29	1496	6.39	0.45	808	0.08
boost-1.20.2	0.41	340	4.4	0.44	145	0.08

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
boost-1.20.2	1	-0.99	1	1	1	1
boost-1.21.1	1.06	-1.02	0.98	0.92	1.02	0.99
boost-1.21.2	1.07	-1.11	1.01	0.87	1.07	0.99
boost-1.22.0	1.1	-1.12	0.99	0.86	1.08	0.98
boost-1.23.0	1.14	-1.16	1	0.81	1.1	0.96
boost-1.24.0	1.16	-1.19	1.03	0.91	1.12	1.01
boost-1.25.0	1.24	-1.2	0.9	0.85	1.17	0.99
boost-1.25.1	1.26	-1.19	0.87	0.84	1.2	0.97
boost-1.26.0	1.28	-1.16	0.95	0.86	1.18	0.97
boost-1.27.0	1.33	-1.22	1.03	0.92	1.25	0.99
boost-1.28.0	1.62	-1.24	1.02	1.19	1.33	1.05
boost-1.29.0	2.44	-1.37	0.81	0.81	2.12	0.93
boost-1.30.0	2.72	-1.88	0.87	0.84	2.51	0.94
boost-1.30.2	2.73	-1.88	0.87	0.83	2.52	0.94
boost-1.31.0	2.88	-1.99	0.82	0.79	2.69	0.93



12. Common C++ Library 2

Metrics Measurement Results

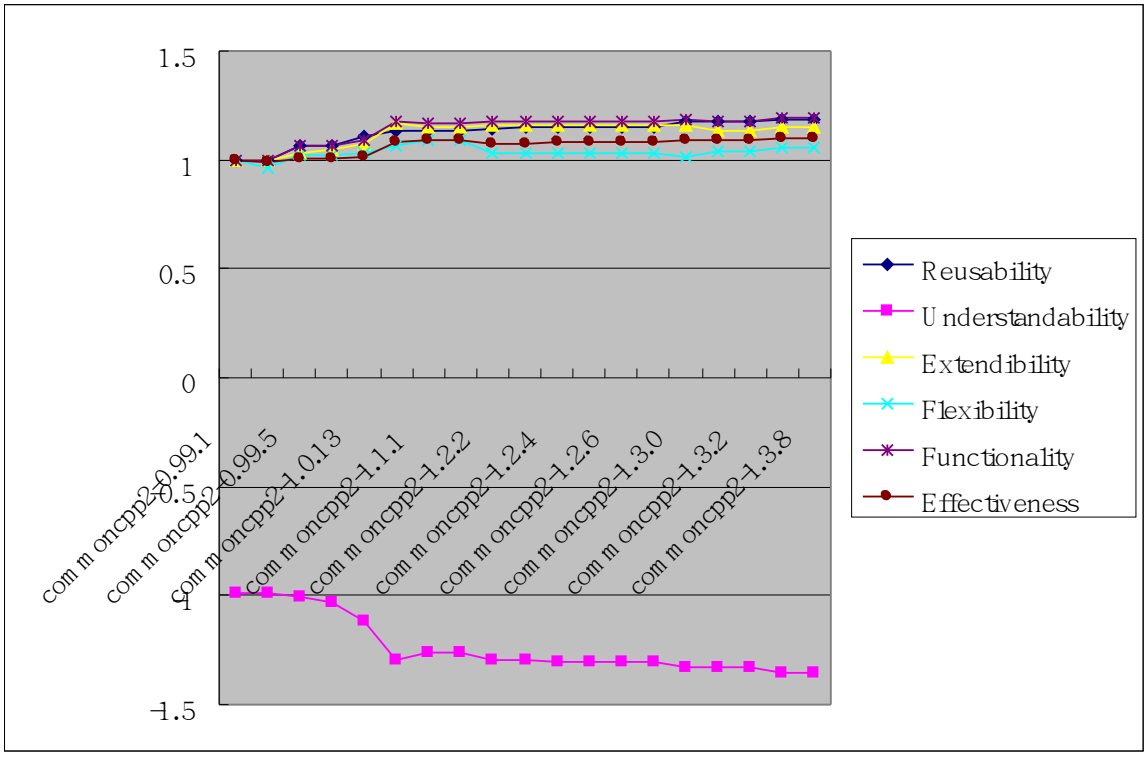
	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
commoncpp2-0.99.1	7.46	89	0.38	7.35	0.34	3.57	5.04	0.38	0.36	1.34	117
commoncpp2-0.99.2	7.46	89	0.38	7.35	0.34	3.56	5.04	0.38	0.33	1.34	117
commoncpp2-0.99.5	7.26	97	0.39	7.16	0.33	3.58	4.99	0.43	0.36	1.43	126
commoncpp2-1.0.0	7.29	95	0.4	7.18	0.32	3.58	4.98	0.42	0.36	1.44	126
commoncpp2-1.0.13	7.44	100	0.41	7.35	0.3	3.59	5.16	0.4	0.38	1.44	136
commoncpp2-1.1.0	8.39	112	0.42	8.3	0.33	3.99	5.69	0.34	0.35	1.65	144
commoncpp2-1.1.1	8.29	111	0.41	8.21	0.35	3.96	5.64	0.34	0.36	1.62	146
commoncpp2-1.1.6	8.29	111	0.41	8.2	0.35	3.96	5.63	0.34	0.36	1.62	146
commoncpp2-1.2.2	8.48	110	0.42	8.39	0.35	4.05	5.82	0.33	0.32	1.62	148
commoncpp2-1.2.3	8.52	110	0.42	8.43	0.35	4.07	5.86	0.33	0.32	1.62	148
commoncpp2-1.2.4	8.59	110	0.42	8.51	0.35	4.09	5.93	0.33	0.32	1.62	148
commoncpp2-1.2.5	8.59	110	0.42	8.51	0.35	4.09	5.93	0.33	0.32	1.62	148
commoncpp2-1.2.6	8.59	110	0.42	8.51	0.35	4.09	5.93	0.33	0.32	1.62	148
commoncpp2-1.2.7	8.59	110	0.42	8.51	0.35	4.09	5.93	0.33	0.32	1.62	148
commoncpp2-1.3.0	8.74	107	0.43	8.65	0.36	4.18	6.07	0.33	0.32	1.6	152
commoncpp2-1.3.1	8.63	108	0.43	8.54	0.36	4.2	5.97	0.33	0.35	1.57	155
commoncpp2-1.3.2	8.62	108	0.43	8.54	0.36	4.2	5.96	0.33	0.35	1.57	155
commoncpp2-1.3.7	8.49	110	0.44	8.41	0.35	4.18	5.89	0.32	0.36	1.58	159
commoncpp2-1.3.8	8.49	110	0.44	8.41	0.35	4.18	5.89	0.32	0.36	1.58	159

Design Properties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
commoncpp2-0.99.2	1.34	0.38	3.56	7.35	7.46	0.33
commoncpp2-1.1.6	1.62	0.41	3.96	8.2	8.29	0.36
commoncpp2-0.99.1	1.34	0.38	3.57	7.35	7.46	0.36
commoncpp2-1.1.1	1.62	0.41	3.96	8.21	8.29	0.36
commoncpp2-1.1.0	1.65	0.42	3.99	8.3	8.39	0.35
commoncpp2-1.0.0	1.44	0.4	3.58	7.18	7.29	0.36
commoncpp2-0.99.5	1.43	0.39	3.58	7.16	7.26	0.36
commoncpp2-1.3.8	1.58	0.44	4.18	8.41	8.49	0.36
commoncpp2-1.3.7	1.58	0.44	4.18	8.41	8.49	0.36
commoncpp2-1.0.13	1.44	0.41	3.59	7.35	7.44	0.38
commoncpp2-1.3.1	1.57	0.43	4.2	8.54	8.63	0.35
commoncpp2-1.3.0	1.6	0.43	4.18	8.65	8.74	0.32
commoncpp2-1.3.2	1.57	0.43	4.2	8.54	8.62	0.35
commoncpp2-1.2.2	1.62	0.42	4.05	8.39	8.48	0.32
commoncpp2-1.2.3	1.62	0.42	4.07	8.43	8.52	0.32
commoncpp2-1.2.4	1.62	0.42	4.09	8.51	8.59	0.32
commoncpp2-1.2.5	1.62	0.42	4.09	8.51	8.59	0.32
commoncpp2-1.2.6	1.62	0.42	4.09	8.51	8.59	0.32
commoncpp2-1.2.7	1.62	0.42	4.09	8.51	8.59	0.32
	Cohesion	Design Size	Messaging	Encapsulatio	Hierarchies	Composition
commoncpp2-0.99.2	0.38	117	5.04	0.34	89	0.33
commoncpp2-1.1.6	0.34	146	5.63	0.35	111	0.36
commoncpp2-0.99.1	0.38	117	5.04	0.34	89	0.36
commoncpp2-1.1.1	0.34	146	5.64	0.35	111	0.36
commoncpp2-1.1.0	0.34	144	5.69	0.33	112	0.35
commoncpp2-1.0.0	0.42	126	4.98	0.32	95	0.36
commoncpp2-0.99.5	0.43	126	4.99	0.33	97	0.36
commoncpp2-1.3.8	0.32	159	5.89	0.35	110	0.36
commoncpp2-1.3.7	0.32	159	5.89	0.35	110	0.36
commoncpp2-1.0.13	0.4	136	5.16	0.3	100	0.38
commoncpp2-1.3.1	0.33	155	5.97	0.36	108	0.35
commoncpp2-1.3.0	0.33	152	6.07	0.36	107	0.32
commoncpp2-1.3.2	0.33	155	5.96	0.36	108	0.35
commoncpp2-1.2.2	0.33	148	5.82	0.35	110	0.32
commoncpp2-1.2.3	0.33	148	5.86	0.35	110	0.32
commoncpp2-1.2.4	0.33	148	5.93	0.35	110	0.32
commoncpp2-1.2.5	0.33	148	5.93	0.35	110	0.32
commoncpp2-1.2.6	0.33	148	5.93	0.35	110	0.32
commoncpp2-1.2.7	0.33	148	5.93	0.35	110	0.32

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
commoncpp2-0.99.1	1	-0.99	1	1	1	1
commoncpp2-0.99.2	1	-0.99	1	0.96	1	0.99
commoncpp2-0.99.5	1.07	-1.01	1.03	1.02	1.06	1
commoncpp2-1.0.0	1.06	-1.03	1.05	1.02	1.06	1.01
commoncpp2-1.0.13	1.11	-1.11	1.07	1.03	1.09	1.01
commoncpp2-1.1.0	1.13	-1.29	1.17	1.07	1.18	1.08
commoncpp2-1.1.1	1.13	-1.26	1.15	1.09	1.17	1.09
commoncpp2-1.1.6	1.13	-1.26	1.15	1.09	1.17	1.09
commoncpp2-1.2.2	1.15	-1.29	1.16	1.03	1.18	1.08
commoncpp2-1.2.3	1.15	-1.3	1.15	1.03	1.18	1.08
commoncpp2-1.2.4	1.15	-1.3	1.16	1.03	1.18	1.08
commoncpp2-1.2.5	1.15	-1.3	1.16	1.03	1.18	1.08
commoncpp2-1.2.6	1.15	-1.3	1.16	1.03	1.18	1.08
commoncpp2-1.2.7	1.15	-1.3	1.16	1.03	1.18	1.08
commoncpp2-1.3.0	1.18	-1.33	1.16	1.01	1.18	1.09
commoncpp2-1.3.1	1.18	-1.33	1.13	1.04	1.18	1.09
commoncpp2-1.3.2	1.18	-1.33	1.13	1.04	1.18	1.09
commoncpp2-1.3.7	1.19	-1.35	1.15	1.06	1.19	1.1
commoncpp2-1.3.8	1.19	-1.35	1.15	1.06	1.19	1.1



13. STLport

Metrics Measurement Results

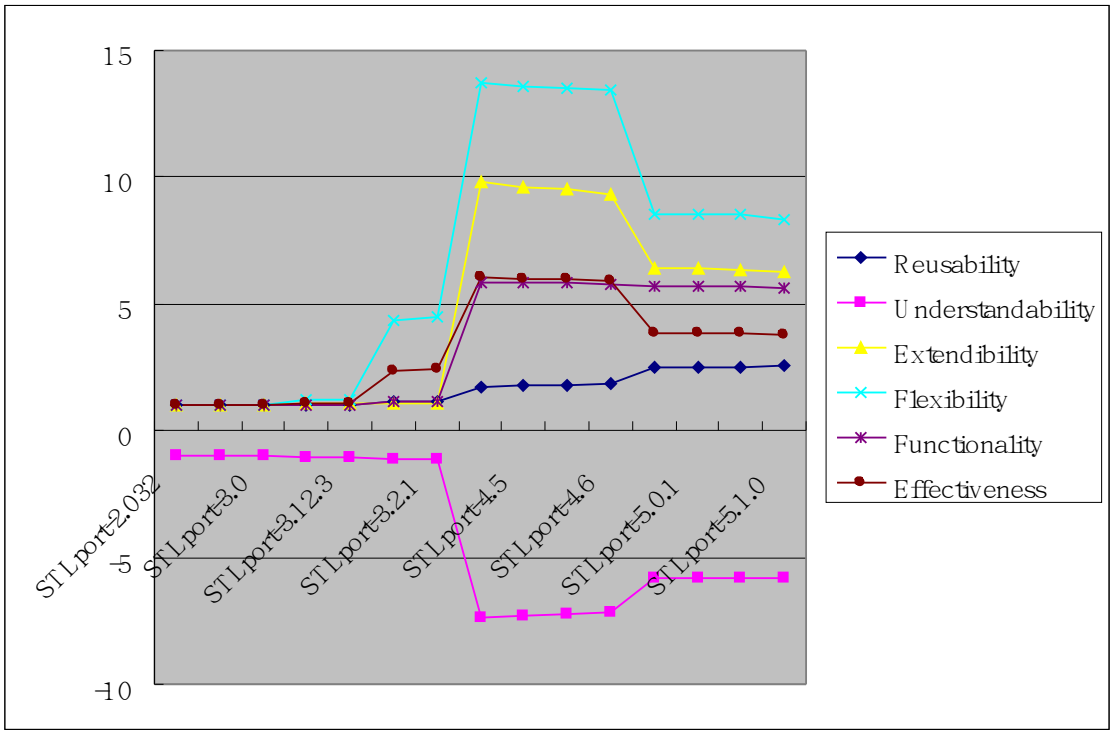
	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
STLport-2.032	13.21	30	0.67	13.19	0.35	3.38	11.91	0.33	0.02	0.06	81
STLport-2.033	13.21	30	0.67	13.19	0.35	3.38	11.91	0.33	0.02	0.06	81
STLport-3.0	13.1	30	0.67	13.08	0.36	3.37	11.82	0.34	0.03	0.06	79
STLport-3.12	13.23	34	0.74	13.2	0.34	3.35	12.27	0.33	0.04	0.06	83
STLport-3.12.3	13.34	34	0.74	13.31	0.34	3.36	12.37	0.33	0.04	0.06	83
STLport-3.2	12.73	51	0.82	12.71	0.31	2.79	11.9	0.28	0.2	0.05	107
STLport-3.2.1	12.55	52	0.83	12.53	0.31	2.7	11.73	0.28	0.2	0.05	109
STLport-4.0	12.12	124	0.63	12.06	0.32	2.88	10.05	0.26	0.22	1.15	217
STLport-4.5	11.79	127	0.63	11.75	0.31	2.86	9.82	0.26	0.22	1.12	230
STLport-4.5.1	11.76	127	0.62	11.72	0.3	2.86	9.8	0.26	0.22	1.12	231
STLport-4.6	11.71	132	0.62	11.67	0.3	2.85	9.72	0.26	0.22	1.09	236
STLport-5.0.0	12.74	239	0.37	12.68	0.24	3.24	8.75	0.25	0.12	0.75	358
STLport-5.0.1	12.75	240	0.37	12.7	0.24	3.25	8.75	0.25	0.12	0.75	358
STLport-5.0.2	12.77	240	0.37	12.71	0.24	3.26	8.74	0.25	0.12	0.75	359
STLport-5.1.0	12.37	237	0.32	12.34	0.29	3.42	8.16	0.23	0.12	0.75	369

Design Properties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
STLport-3.2.1	0.05	0.83	2.7	12.53	12.55	0.2
STLport-4.5	1.12	0.63	2.86	11.75	11.79	0.22
STLport-4.6	1.09	0.62	2.85	11.67	11.71	0.22
STLport-4.0	1.15	0.63	2.88	12.06	12.12	0.22
STLport-3.12	0.06	0.74	3.35	13.2	13.23	0.04
STLport-2.032	0.06	0.67	3.38	13.19	13.21	0.02
STLport-4.5.1	1.12	0.62	2.86	11.72	11.76	0.22
STLport-5.0.1	0.75	0.37	3.25	12.7	12.75	0.12
STLport-3.2	0.05	0.82	2.79	12.71	12.73	0.2
STLport-2.033	0.06	0.67	3.38	13.19	13.21	0.02
STLport-3.0	0.06	0.67	3.37	13.08	13.1	0.03
STLport-5.1.0	0.75	0.32	3.42	12.34	12.37	0.12
STLport-5.0.2	0.75	0.37	3.26	12.71	12.77	0.12
STLport-3.12.3	0.06	0.74	3.36	13.31	13.34	0.04
STLport-5.0.0	0.75	0.37	3.24	12.68	12.74	0.12
	Cohesion	Design Size	Messaging	Encapsulatio	Hierarchies	Composition
STLport-3.2.1	0.28	109	11.73	0.31	52	0.2
STLport-4.5	0.26	230	9.82	0.31	127	0.22
STLport-4.6	0.26	236	9.72	0.3	132	0.22
STLport-4.0	0.26	217	10.05	0.32	124	0.22
STLport-3.12	0.33	83	12.27	0.34	34	0.04
STLport-2.032	0.33	81	11.91	0.35	30	0.02
STLport-4.5.1	0.26	231	9.8	0.3	127	0.22
STLport-5.0.1	0.25	358	8.75	0.24	240	0.12
STLport-3.2	0.28	107	11.9	0.31	51	0.2
STLport-2.033	0.33	81	11.91	0.35	30	0.02
STLport-3.0	0.34	79	11.82	0.36	30	0.03
STLport-5.1.0	0.23	369	8.16	0.29	237	0.12
STLport-5.0.2	0.25	359	8.74	0.24	240	0.12
STLport-3.12.3	0.33	83	12.37	0.34	34	0.04
STLport-5.0.0	0.25	358	8.75	0.24	239	0.12

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
STLport-2.032	1	-0.99	1	1	1	1
STLport-2.033	1	-0.99	1	1	1	1
STLport-3.0	0.99	-0.97	1.01	1.03	1	1.01
STLport-3.12	1.03	-1.03	1.05	1.22	1.04	1.1
STLport-3.12.3	1.04	-1.03	1.05	1.22	1.04	1.11
STLport-3.2	1.16	-1.11	1.07	4.37	1.15	2.36
STLport-3.2.1	1.18	-1.1	1.07	4.48	1.16	2.4
STLport-4.0	1.75	-7.36	9.8	13.69	5.87	6.02
STLport-4.5	1.81	-7.28	9.58	13.58	5.83	5.97
STLport-4.5.1	1.82	-7.25	9.54	13.52	5.81	5.94
STLport-4.6	1.85	-7.14	9.34	13.4	5.78	5.89
STLport-5.0.0	2.53	-5.83	6.39	8.53	5.67	3.88
STLport-5.0.1	2.53	-5.83	6.39	8.53	5.67	3.88
STLport-5.0.2	2.53	-5.82	6.37	8.51	5.67	3.87
STLport-5.1.0	2.54	-5.79	6.24	8.35	5.63	3.81



14. G3D - 3D Engine

Metrics Measurement Results

	NOM	NOH	ANA	MFA	DAM	DCC	CIS	CAM	MOA	NOP	DSC
g3d-5.01	11.42	36	0.33	10.67	0.39	3.54	10.58	0.47	0.04	0.87	124
g3d-6.00	13.37	60	0.3	12.55	0.29	3.54	12.48	0.42	0.02	1.24	174
g3d-6.01	15.59	61	0.31	14.76	0.29	3.57	14.69	0.42	0.02	1.43	178
g3d-6.02	15.45	58	0.31	14.64	0.31	3.62	14.57	0.41	0.03	1.61	186
g3d-6.03	14.65	78	0.26	13.85	0.31	3.86	13.71	0.41	0.1	2	217
g3d-6.04	14.3	102	0.22	13.51	0.31	3.87	13.25	0.39	0.12	2.03	236
g3d-6.05	13.42	118	0.19	12.6	0.3	3.93	12.24	0.38	0.17	1.84	289
g3d-6.06	13.56	119	0.19	12.73	0.3	3.93	12.36	0.38	0.17	1.83	291
g3d-6.07	12.98	132	0.2	12.13	0.32	3.89	11.79	0.4	0.19	1.85	328
g3d-6.08	13	141	0.19	12.07	0.33	3.91	11.73	0.39	0.19	1.91	345
g3d-6.09	12.81	153	0.21	11.74	0.33	3.86	11.42	0.38	0.18	1.91	377
g3d-6.10	13.97	89	0.27	12.82	0.31	3.54	12.8	0.38	0.06	1.65	271

Design Properties

	Polymorphism	Abstraction	Coupling	Inheritance	Complexity	Aggregation
g3d-6.10	1.65	0.27	3.54	12.82	13.97	0.06
g3d-5.01	0.87	0.33	3.54	10.67	11.42	0.04
g3d-6.09	1.91	0.21	3.86	11.74	12.81	0.18
g3d-6.08	1.91	0.19	3.91	12.07	13	0.19
g3d-6.07	1.85	0.2	3.89	12.13	12.98	0.19
g3d-6.06	1.83	0.19	3.93	12.73	13.56	0.17
g3d-6.05	1.84	0.19	3.93	12.6	13.42	0.17
g3d-6.04	2.03	0.22	3.87	13.51	14.3	0.12
g3d-6.03	2	0.26	3.86	13.85	14.65	0.1
g3d-6.02	1.61	0.31	3.62	14.64	15.45	0.03
g3d-6.01	1.43	0.31	3.57	14.76	15.59	0.02
g3d-6.00	1.24	0.3	3.54	12.55	13.37	0.02
	Cohesion	Design Size	Messaging	Encapsulatio	Hierarchies	Composition
g3d-6.10	0.38	271	12.8	0.31	89	0.06
g3d-5.01	0.47	124	10.58	0.39	36	0.04
g3d-6.09	0.38	377	11.42	0.33	153	0.18
g3d-6.08	0.39	345	11.73	0.33	141	0.19
g3d-6.07	0.4	328	11.79	0.32	132	0.19
g3d-6.06	0.38	291	12.36	0.3	119	0.17
g3d-6.05	0.38	289	12.24	0.3	118	0.17
g3d-6.04	0.39	236	13.25	0.31	102	0.12
g3d-6.03	0.41	217	13.71	0.31	78	0.1
g3d-6.02	0.41	186	14.57	0.31	58	0.03
g3d-6.01	0.42	178	14.69	0.29	61	0.02
g3d-6.00	0.42	174	12.48	0.29	60	0.02

Quality Attributes

	Reusability	Understandability	Extendibility	Flexibility	Functionality	Effectiveness
g3d-5.01	1	-0.99	1	1	1	1
g3d-6.00	1.27	-1.41	1.25	0.93	1.36	0.96
g3d-6.01	1.39	-1.56	1.48	1.03	1.47	1.05
g3d-6.02	1.41	-1.65	1.56	1.19	1.5	1.12
g3d-6.03	1.47	-1.83	1.64	2.33	1.76	1.53
g3d-6.04	1.51	-1.85	1.58	2.61	1.93	1.61
g3d-6.05	1.67	-1.89	1.38	3.03	2.05	1.75
g3d-6.06	1.69	-1.89	1.38	3.05	2.06	1.76
g3d-6.07	1.82	-1.96	1.38	3.33	2.2	1.87
g3d-6.08	1.88	-2.02	1.4	3.33	2.3	1.87
g3d-6.09	1.99	-2.12	1.41	3.24	2.42	1.83
g3d-6.10	1.65	-1.81	1.45	1.58	1.81	1.21