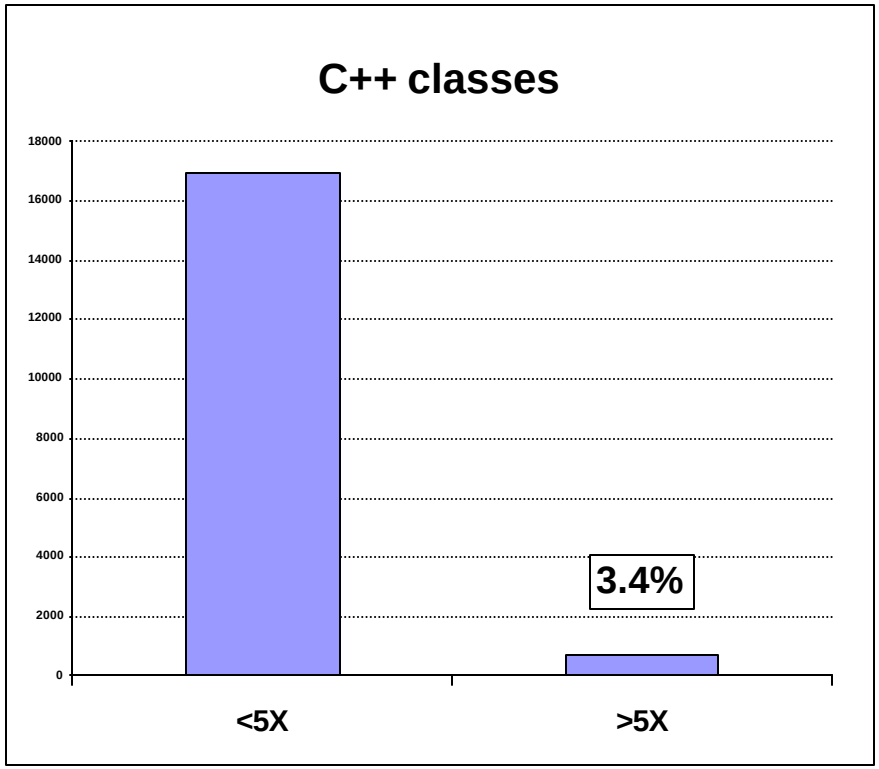
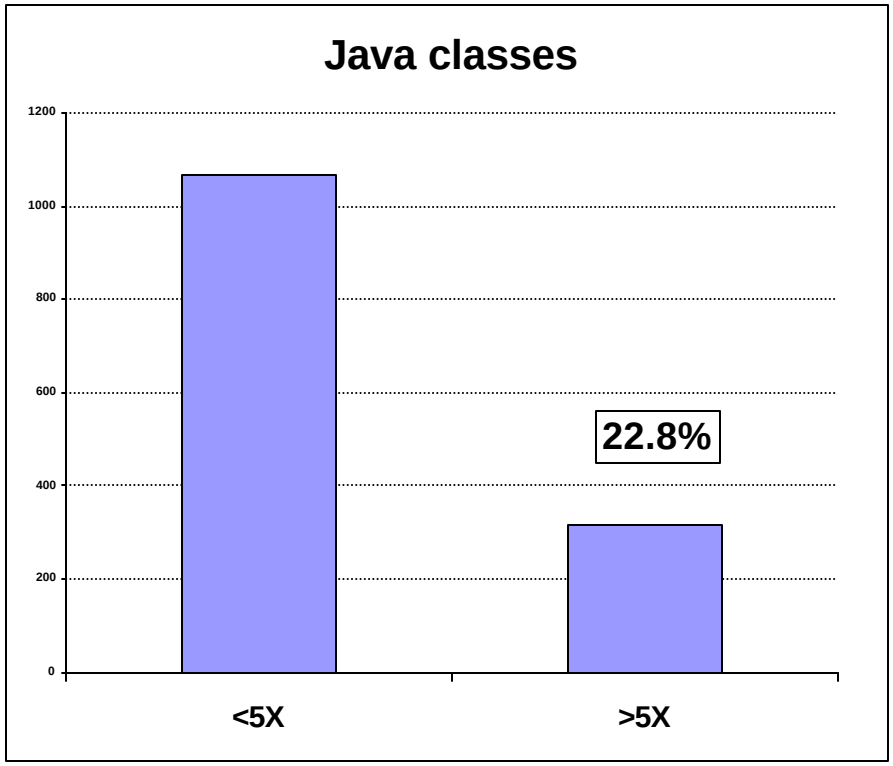
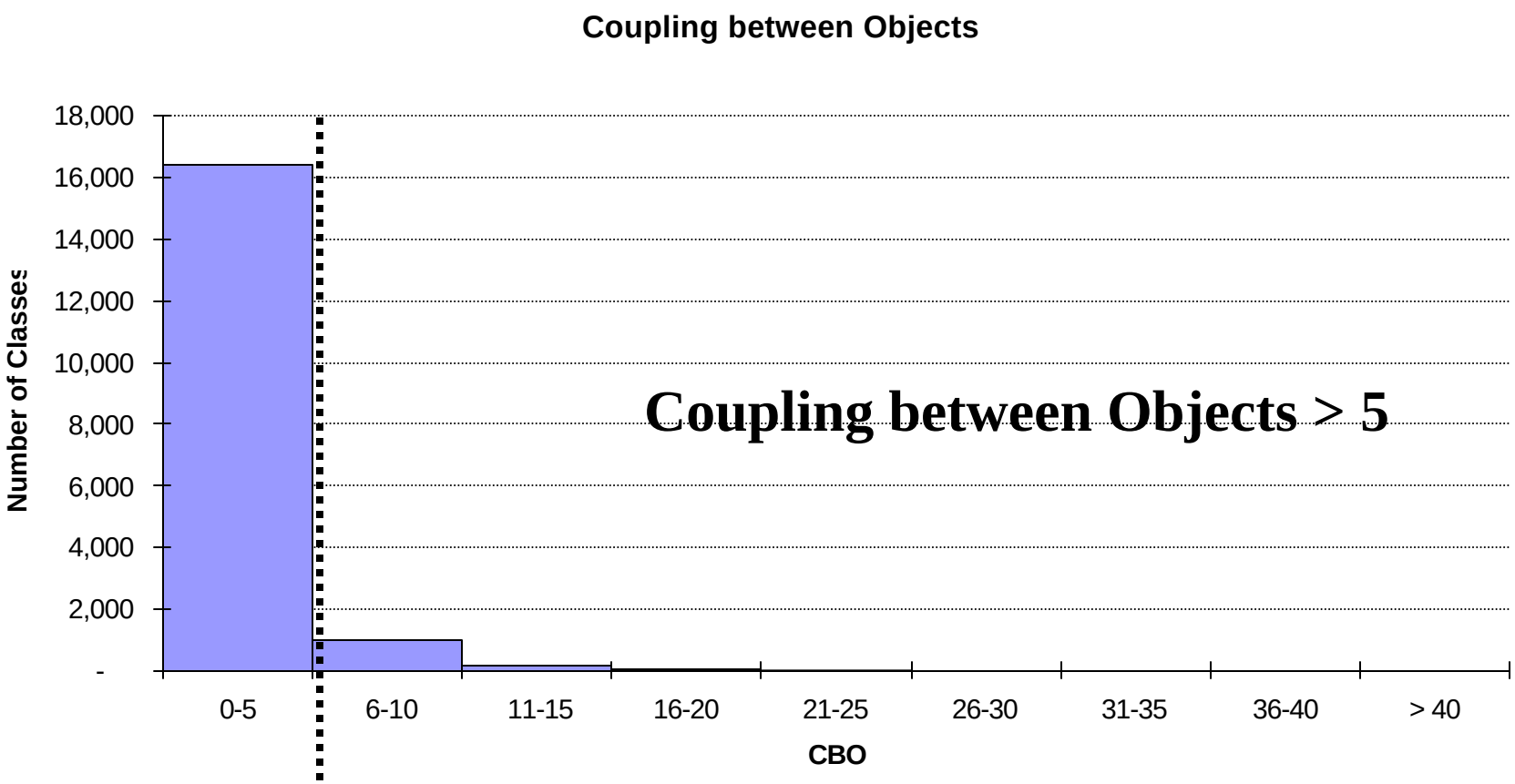
Response for Class II





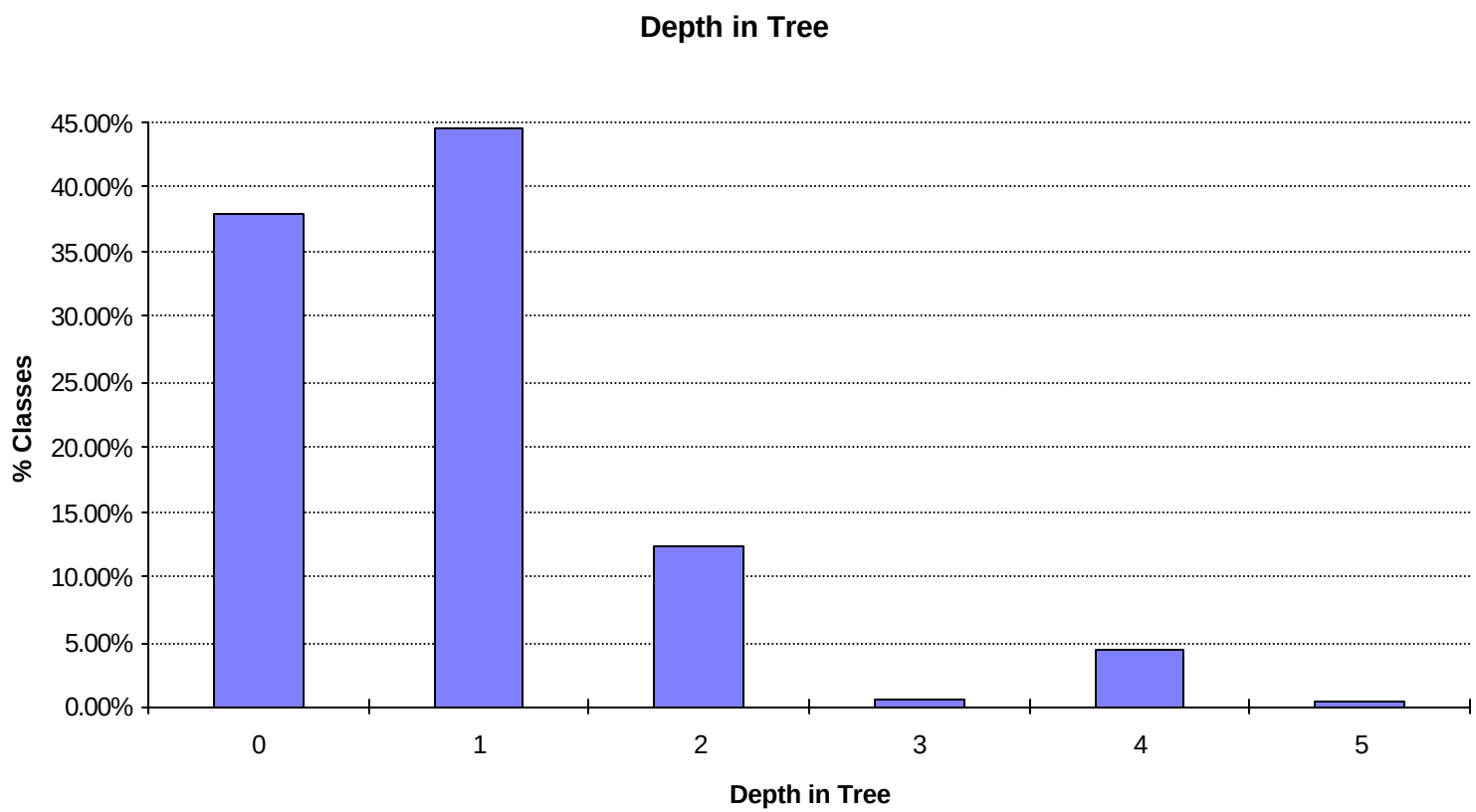
Classes with RFC Greater than 5 times #Methods

Coupling Between Objects



Higher CBO indicates classes that my be difficult to understand
Decreased reuse and increased maintenance.

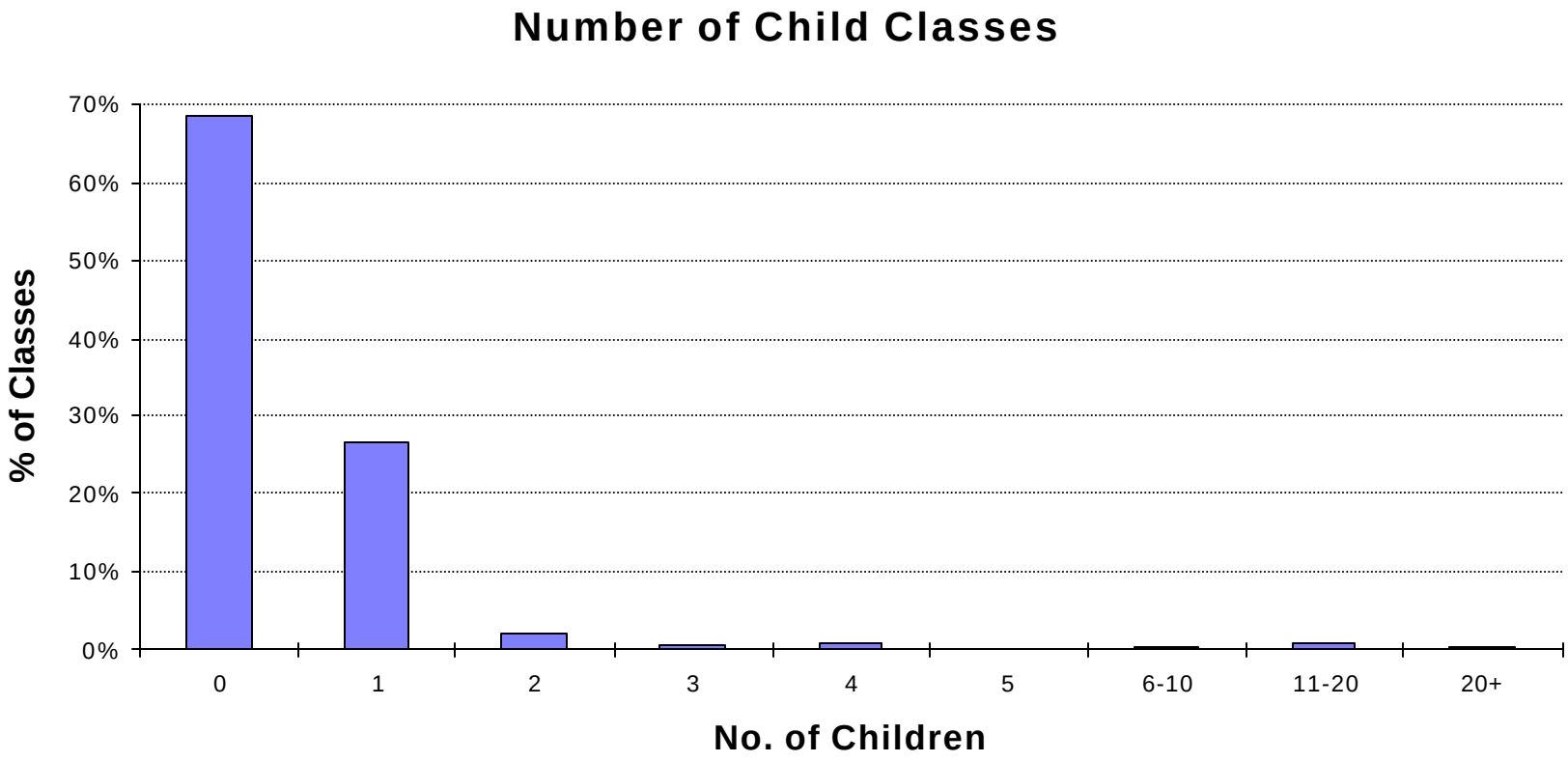
Depth in Tree



DIT = 0 ==> “root”

Higher percentages for DIT’s of 2 and 3 show a higher degree of reuse.

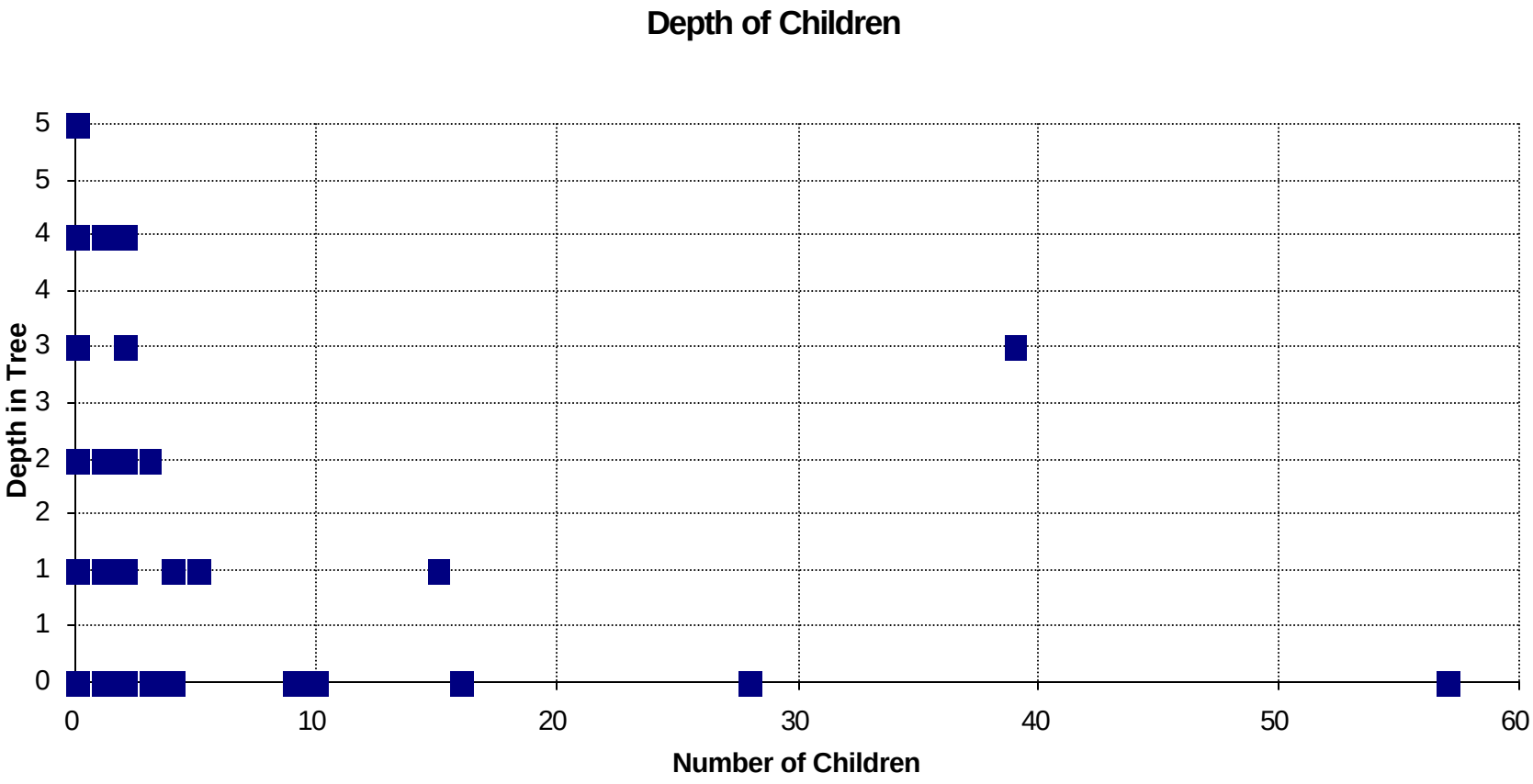
Number of Children



NOC = 0 ==>“leaf” nodes

Higher the number of child classes, the more benefit there may be due to inheritance

Number of Children vs. Depth in Tree



Higher DIT's indicate a trade-off between increased complexity and increased reuse. Higher NOC's also indicate reuse, but may require more testing.

“It Takes a Village”

Any class that meets *at least two* of the following criteria is flagged:

- Response for Class > 100
- Coupling between Objects > 5
- Response for Class > 5 time the number of methods in the class
- Weighted Methods per Class > 100
- Number of Methods > 40

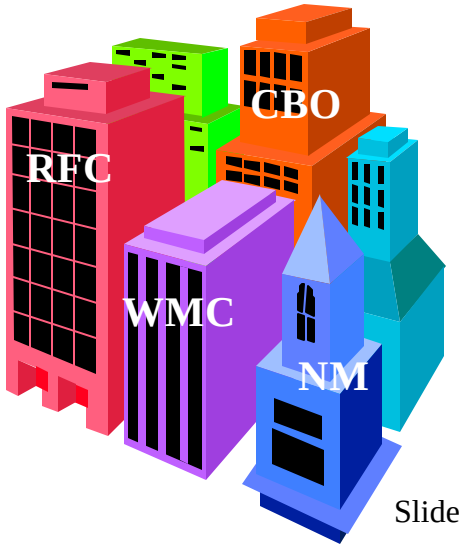


Table of High Risk Classes

High Risk Classes				
ClassName	#Method	CBO	RFC	WMC
Class1	54	8	536	176
Class2	7	6	168	71
Class3	33	4	240	105
Class4	40	1	206	97
Class5	24	2	163	83
Class6	28	3	183	79
Class7	54	8	361	117
Class8	62	6	378	163
Class9	25	5	209	75
Class10	63	7	235	156
Class11	81	10	285	161
Class12	42	5	127	69
Class13	13	3	120	25
Class14	20	17	324	139
Class15	23	7	164	80
Class16	26	7	165	79
Class17	21	2	126	70
Class18	46	5	186	238
Class19	2	2	26	103

Sample Project Summary

Directory	% of System	CmmtPct	Ext. Cyc. Complx.	cmplxty / #cls	GOTO	MAX DIT
S1	29%	30%	21,801	39.42	19	4
S2	18%	18%	34,787	43.87	7	10
S3	5%	42%	2,527	20.22		4
S4	3%	33%	7,737	63.94		3
S5	3%	37%	3,227	32.60		2
S6	7%	36%	2,951	21.08	1	3
S7	11%	33%	10,610	29.64		2
S8	23%	44%	15,339	20.59	7	4

	Methods			WMC			CBO		
	1 - 20	21 - 40	> 40	1-100	101-200	>200	0 - 6	7 - 10	> 10
SUBSYS1	58%	31%	11%	91%	6%	3%	93%	4%	3%
SUBSYS2	74%	20%	6%	91%	6%	3%	87%	9%	4%
SUBSYS3	66%	32%	2%	99%	1%	0%	93%	5%	2%
SUBSYS4	84%	14%	2%	99%	1%	0%	99%	0%	1%
SUBSYS5	67%	29%	4%	94%	6%	0%	89%	6%	5%
SUBSYS6	56%	41%	3%	99%	1%	0%	89%	7%	4%
SUBSYS7	78%	16%	6%	98%	1%	1%	98%	1%	1%
SUBSYS8	68%	29%	3%	99%	1%	0%	96%	3%	1%

User Feedback . . .

The "High Risk Classes" table was useful to us because it showed potential problem classes at a glance.

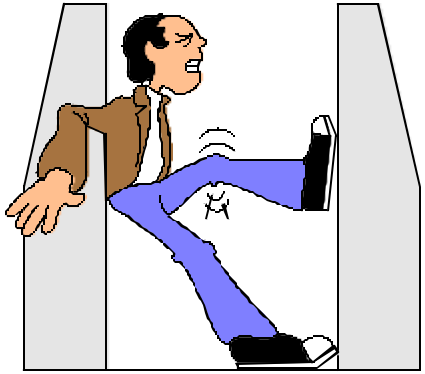
In some cases, it clarified things that we already knew about the code but didn't want to admit.

We've taken a closer look at a couple of classes, mainly concerned with their large number of methods.

Conclusion - Metrics and Testing

Metrics analyze object oriented development

As testing time decreases



Metrics help focus efforts