Software Improvement Group

The Open-code Clinic

Software quality assessment in the classroom

Quality of student code?

- How do you objectively assess the quality of the code your students write?
- How do you make it clear to them that maintainability is important?
- Is there a way to look at maintainability without sounding subjective?

	Volume	Duplication	Unit size	Unit complexity	Unit interfacing	Module coupling	Component balance	Component independence
Analysability	X	X	X				X	
Modifiability		X		X		X		
Testability	X			X				X
Modularity						X	X	X
Reusability			X		X			

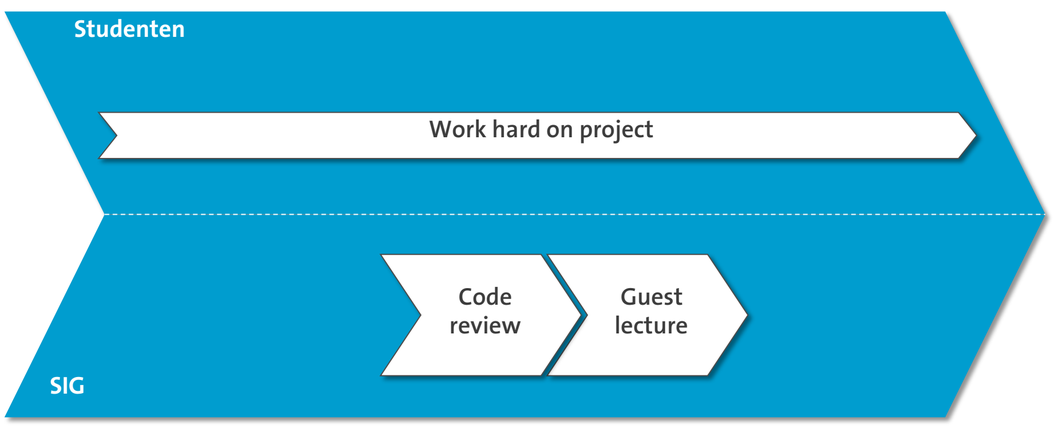
Yes there is!

The SIG benchmark model for maintainability is used to assess hundreds of industry systems every year, for a wide range of companies vital to the Dutch economy.

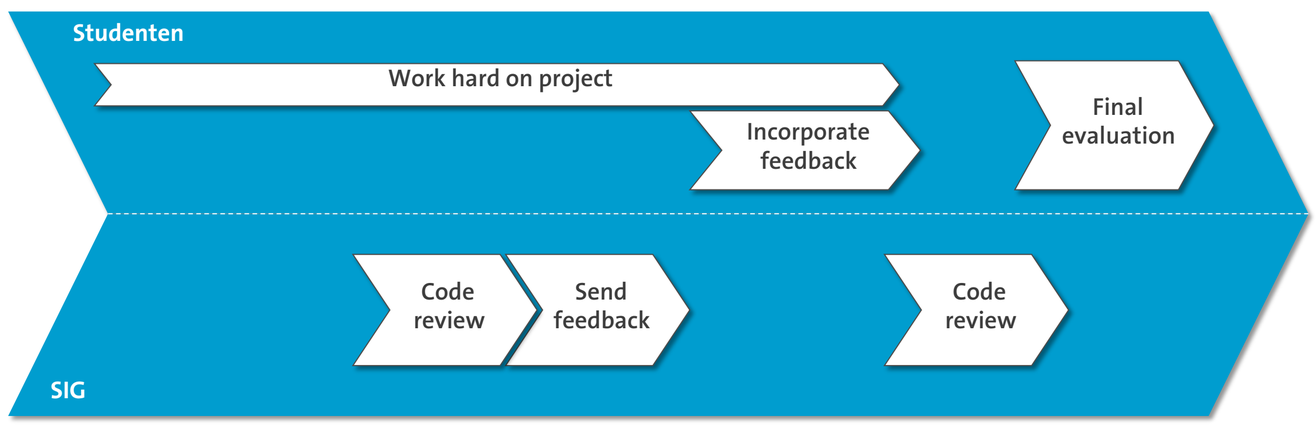
The SIG software maintainability model is based on the ISO/IEC 25010 standard ‘System and Software Product Quality Model’.

Assessment Process

The Open-code Clinic has been performed in the past 5 years to assess the quality of student projects for both Technical University Delft and Radboud University Nijmegen. It has been used in two forms:.

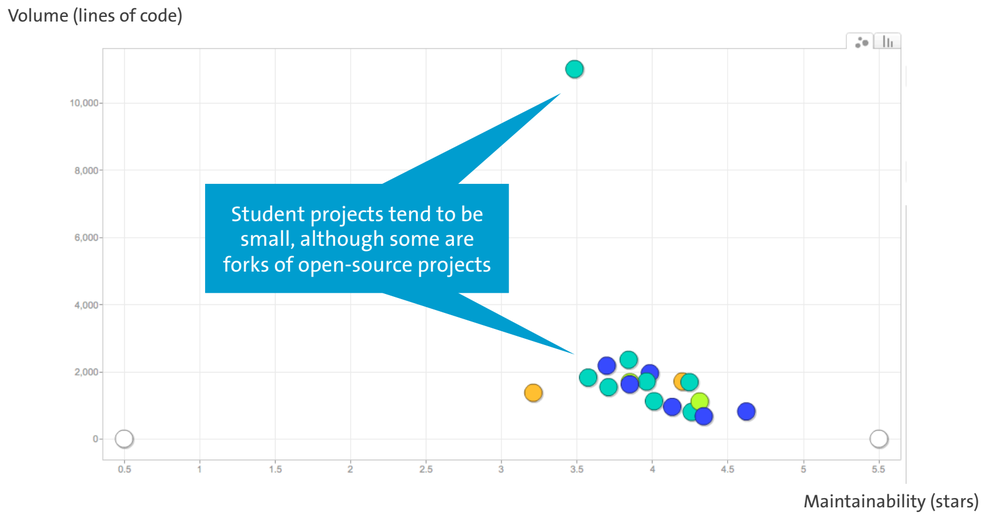


One-phase Assessment



Two-phase Assessment

Assessment Results



Statistics since 2010:

- Evaluated groups: 175
- Main technologies: Java, JavaScript, C#, PHP, Python, C++
- Most problems with: Unit Size, Duplication
- Most common scores: ★★★☆☆, ★★★★☆
- Percentage of applied feedback: 70%