

QStudio for Java Pro

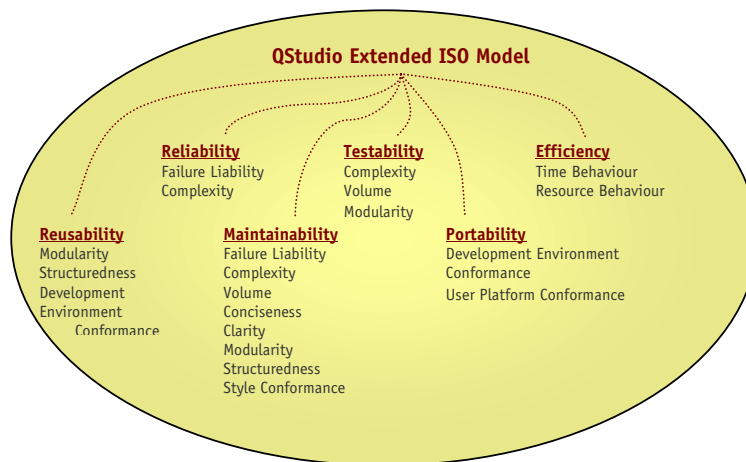
QStudio for Java significantly reduces your code review effort by automating a major portion of your code inspection process; it detects software defects prior to compile time and automatically assesses the quality of your software from within your preferred Java IDE or standalone environment.

QStudio for Java Pro is the standalone version of the QStudio product family. QStudio for Java Pro gives developers the ability to automatically assess and control software quality concepts such as reliability, maintainability and efficiency. Software process managers can tie software development quality control practices deeper and earlier into the software development process than previously possible.

You are looking for ways to improve your software development process. You want to improve time-to-market, software quality and the efficiency of software maintenance. QStudio for Java Pro gives you the benefits of automated software code quality control:

- Reduce time to market by cutting testing time due to earlier detection of (potential) software errors
- Significantly reduce review effort (and therefore cost) by automating a major portion of the inspection process (adherence to coding standards, usage of best programming practices)
- Improve quality control and thereby code quality by directly supporting adherence to improved programming practices and corporate coding standards and avoid software quality degradation
- Assess the quality of its existing code base in order, for example, to establish maintenance budgets or for in-sourcing or outsourcing contracts

Control conformance to coding standards and the ISO 9126 quality standard



QStudio® enables automated quality control on source code. The corporate code quality goals can be defined in a coding standard using QStudio® rules. The coding standard specifies which rules need to be applied and what their parameterizations are. The developer uses the QStudio® toolset to verify the source code against the conformance to the coding standard and, in the event of identified non-compliances, performs rework (guided by the observations, rule descriptions and patterns that QStudio® provides).

QStudio® specifies quality concepts in a measurable way based on an extended version of the ISO 9126 quality standard. QStudio recognizes quality attributes such as reliability, maintainability, testability, re-usability, portability and efficiency. The model defines a stepwise refinement of the notion of code quality into a set of ISO defined quality attributes and from these a further breakdown into quality sub-attributes. QA Systems proprietary technology maps these attributes in turn onto programming constructs.

User Definable and User Customizable Rules

QStudio for Java Pro (version 1.9) supports PMD rule specifications (pmd.sourceforge.net) allowing:

- QStudio users to define their own rules via the PMD specification
- QStudio users to tap into the PMD user community and make use of the various rule sets being defined within the PMD community
- PMD users to seamlessly extend their rule sets with the extended ISO 9126 quality model by importing them into QStudio

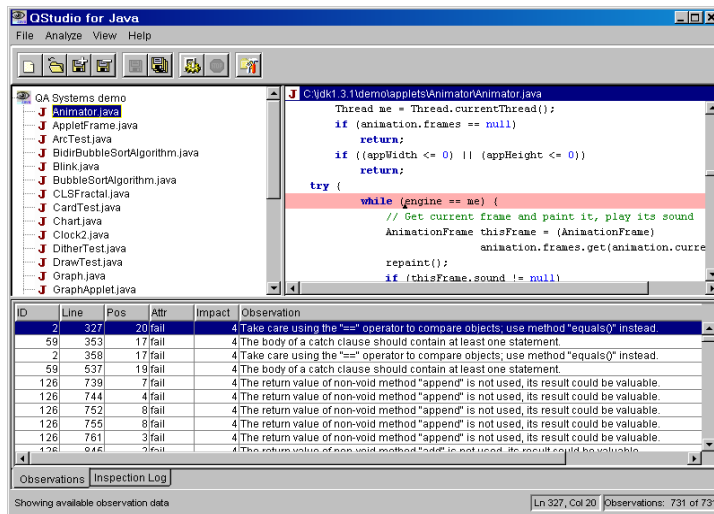
QStudio for Java Pro has advanced rule customizability capabilities including:

- Rule configuration e.g. upper and lower boundary values, selectable scope and field modification and
- Rules instantiation for which a value can be entered at runtime
- Rules for which a regular expression can be entered as value (e.g. for naming conventions)

Project and File Level Code Inspection

Code Inspections can be performed per project, per package (all source files within a package-node) or per source file. During an inspection run the Java source code is checked on all the rules as configured in the checks configuration.

On rule non-compliance detection an observation is generated stating which rule was violated, the reason of the violation and the location where the observation was made.



Integrated Development Environments

Many developers enjoy the advantage of using QStudio for Java seamlessly integrated within their preferred Integrated Development Environment. Software developers will find all the QStudio for Java features at their fingertips: inspecting code, viewing error reports, getting online descriptive pattern based solutions, making code changes and configuring inspection rules. The following IDE's are supported JBuilder™, Oracle® 9i JDeveloper, Eclipse™, WebSphere Studio® and Visual Age®.

QStudio® for Java Pro is available for Windows (98/2000/NT/XP/ME), Linux (RedHat Linux 6.1 and higher, SuSE Linux 7.0 and higher) and Solaris (Solaris 6.1 and higher). QStudio for Java Pro is available for free evaluation or purchase from www.qa-systems.com/pro for just **\$295/€295**.

QStudio for Java Enterprise

QStudio for Java Enterprise is a web-based collaborative solution that brings developers, quality assurance managers and software development managers together through a distributed software quality control and management system. Besides supporting QStudio for Java Pro functionality, QStudio for Java Enterprise provides advanced enterprise-wide reporting on quality status (ISO 9126 conforming) and quality evolution, trend analysis, coding standards conformance and software metrics. See www.qa-systems.com/enterprise for more information.



QA Systems - The Software Health Company™ - is focused on improving its customers' software health. QA Systems develops software tools to assess, support, monitor and control the health (quality) of software applications developed by its customers both from both a preventative viewpoint (supporting good programming practices) as a diagnostic viewpoint (diagnosing possible software code health risks). See www.qa-systems.com or email info@qa-systems.com.

QStudio for Java 1.9 Features

	Pro	Enterprise
Analysis Capabilities		
Intuitive Graphical User Interface with project organization and integrated editor	✓	✓
On-line descriptive rules and pattern guide including best practice recommendations	✓	✓
Advanced Java pattern based source code analysis at file, class and method level	✓	✓
Over 200 Default User Customizable Rules	✓	✓
User Definable Rules based on PMD specifications	✓	✓
User Configurable Coding Standards	✓	✓
Coding standards conformance at project level	✓	✓
Coding standards conformance at team and departmental level	▪	✓
ISO 9126 based quality analysis	✓	✓
Impact Level Analysis	✓	✓
Configurable and extendable checks for naming conventions based on regular expressions	✓	✓
Language based analysis including:	✓	✓
Thread coverage	✓	✓
Check for unresolved classes	✓	✓
Package level coverage	✓	✓
Sorted ordering of imported packages	✓	✓
Coverage of Inner classes	✓	✓
Inheritance Analysis	✓	✓
Exception Handling	✓	✓
Method level checks	✓	✓
Naming conventions	✓	✓
Interface implementation analysis	✓	✓
Metrics based analysis including:	✓	✓
Number of statements per method	✓	✓
Number of statements per class	✓	✓
Number of methods per class	✓	✓
Ratio private/public class members	✓	✓
Static Path count	✓	✓
Non-final fields per class	✓	✓
Max lines of code per method	✓	✓
Code density	✓	✓
Coupling	✓	✓
Code Nesting	✓	✓
Cyclomatic Complexity	✓	✓
Method Nesting	✓	✓
Inheritance depth	✓	✓
Lines of code metrics (LCOM)	✓	✓
Comment Density	✓	✓
Quality Data Mining capabilities	▪	✓
Software quality trend analysis based on formal milestone definition	▪	✓

Reporting		
Text and HTML based annotated source code reports	✓	✓
Output view filters on individual rules, impact level and quality (sub)attributes	✓	✓
Observations overview in sortable table format	✓	▪
Multidimensional views of observations	▪	✓
Click through overviews of type Table, Pie Chart and Bar Chart	▪	✓
Hierarchical views on Quality Attributes including conformance status	▪	✓
Web based graphical views on metrics and observations distribution	▪	✓
Application usage reporting	▪	✓
Quality data export capabilities	▪	✓
Integration		
Seamless integration with Borland JBuilder	✓	✓
Seamless integration with Oracle9i JDeveloper	✓	✓
Seamless integration with Eclipse.org Eclipse	✓	✓
Seamless integration with IBM WebSphere Studio	✓	✓
Seamless integration with IBM VisualAge for Java	✓	✓
Standalone Environment	✓	✓
Command Line Interface	▪	✓
Integratable with Version Control Systems	▪	✓
Department/Team based quality control and management		
Web enabled quality control and management	▪	✓
Absolute and relative quality measurement and control	▪	✓
Managing quality data for multiple projects and multiple products (software releases)	▪	✓
Collaboration among distributed development teams	▪	✓
Distributed Coding and Quality Standards Management	▪	✓
Storing and maintaining historical quality data based on milestone analysis	▪	✓
Role dependent and customizable user profiles	▪	✓
Platform support		
Windows 98,2000,NT,XP,ME	✓	✓
Solaris	✓	✓
Linux	✓	✓
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