

Recall cost & Complexity !



RESORT for C(Pro*C) RESORT for Java(JSP)

**The software quality toolset
for the improvement of
software quality and
productivity**

RESORT for C(Pro*C) – SW Quality Tool

SW Quality Solutions

- Multi-level Quality Statistical Metrics
 - Project
 - Subsystem
 - File
- Multi-level Automatic Visualization
 - Subsystem
 - File
 - Function

Visualization (Quality Evaluation)

- Procedure Metrics
- Halstead Metrics
- Quality(Maintainability) Metrics

Visualization (Reverse Engineering)

- File Diagram
- Call Graph
- Variable Reference Graph
- Control Flow Graph
- Source Code Browser

SW Quality Tool is a suit of tightly integrated reverse engineering and software metrics measurement.

Reverse Engineering Tool supports a comprehensive visualization and procedure metrics solution that analyzes a software system to identify its current modules and dependencies, to extract and create system abstraction and design information.

SW Metrics Tool provides a quantitative basis for the development and validation of models of the software development and maintenance process. Software metrics helps you identify, diagnose and resolve potential problems to improve software quality and productivity.

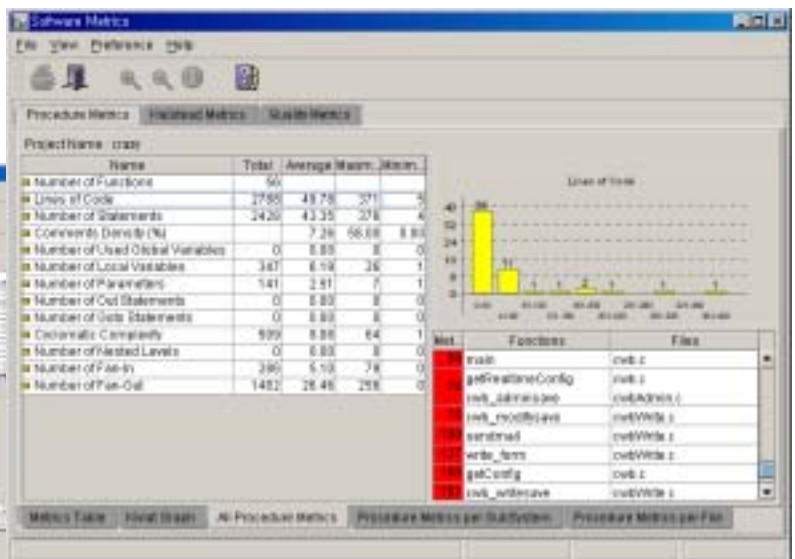
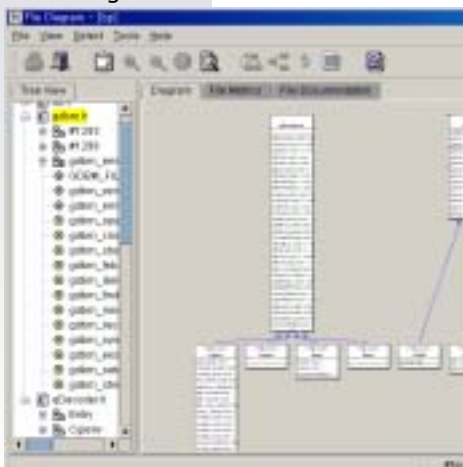
Features

- Hybrid reverse engineering approach combining UML diagram/graph and procedure metrics
- Automatic UML diagrams/graphs generation from file to function level
- Supporting 90+ software metrics such as size and structure metrics
- Measure and evaluate software quality such as Procedure, Halstead and maintainability characteristic in ISO 9126-3
- Direct to Diagram (navigation)/Code(highlighting)
- Reporting multi-level statistical metrics for product management

Benefits

- Understand both the design and architecture of the software system
- Identify and prevent software design problems early in the development cycle
- Assist to achieve the software quality goals
- Improve understandability, maintainability and performance quickly
- Enable project(IT&QA) managers to control software quality
- Reduce software development, testing and maintenance costs

File Diagram



Procedure Metrics –
Multi-level Statistical Metrics

RESORT for C(Pro*C) – Code Checker Tool

Code Checker Solutions

- Multi-level Code Audit
 - File
 - Function
 - MISRA-C:2004
- Multi-level Statistical Violation
 - Project
 - Subsystem
 - File
 - Function

Visualization (Inspection Monitoring)

- All Audit
- File Audit
- Function Audit
- MISRA Audit

Code Checker Tool automatically identifies C(Pro*C) coding errors and problems by applying widely accepted coding standards and MISRA-C:2004.

Code checker detects inconsistencies and errors in language implementation as well as source code issues involving standards compliance, programming practices and performance to enable fast, efficient development of truly robust software.

MISRA-C:2004 is a document that establishes guidelines(141 rules) for the use of the C language in critical systems. The Motor Industry Software Reliability Association (MISRA) has been widely adopted by companies in the automotive sector, as well as those in rail, aerospace, medical and other industries.

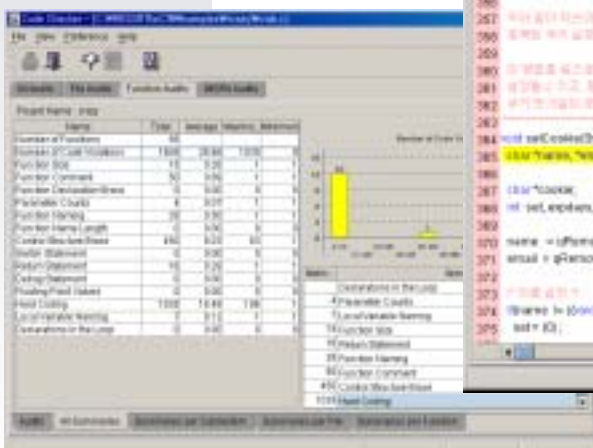
Features

- Detect errors and incorrect patterns of the C(Pro*C) code including MISRA-C:2004 and Hungarian notation
- Supporting violations of 200+ rules that improve readability, maintainability, performance and programming errors
- Highlighting the detected code
- Supporting users to customize and extend coding rules
- Reporting multi-level statistical violation for product management

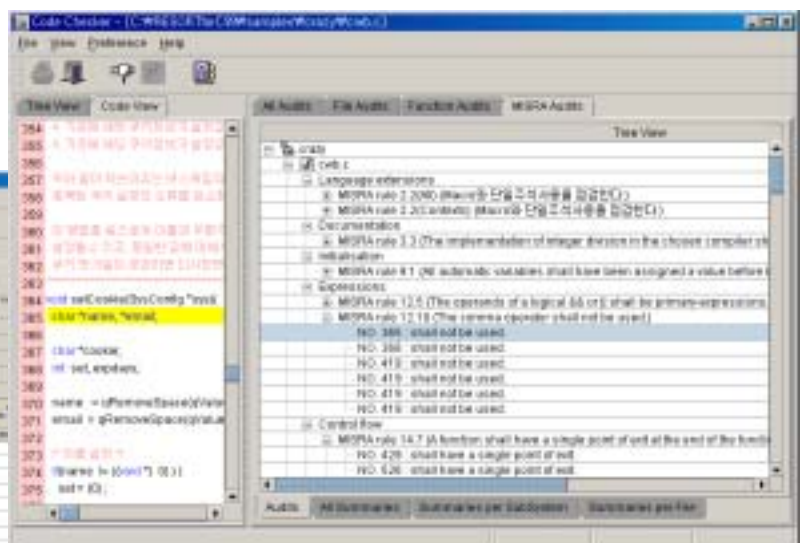
Benefits

- Identify source code problems early in the development cycle
- Prevent compile, run-time and programming errors
- Improve code readability, maintainability, performance and Reliability quickly
- Enable code inspections to found 70-90% of the errors before test
- Enforce a project's own programming standard
- Enable developers to improve their C knowledge and programming capabilities
- Enable project(IT&QA) managers to control code quality
- Reduce software development, testing and maintenance costs

Code Checker – Statistical Violation Reporting



Code Checker – Code Violation Detection and Highlighting



RESORT for Java(JSP) – SW Quality Tool

SW Quality Tool is a suit of tightly integrated reverse engineering and software metrics measurement.

Reverse Engineering Tool supports a comprehensive visualization and OO metrics solution that analyzes a software system to identify its current modules and dependencies, to extract and create system abstraction and design information.

SW Metrics Tool provides a quantitative basis for the development and validation of models of the software development and maintenance process. Software metrics helps you identify, diagnose and resolve potential problems to improve software quality and productivity.

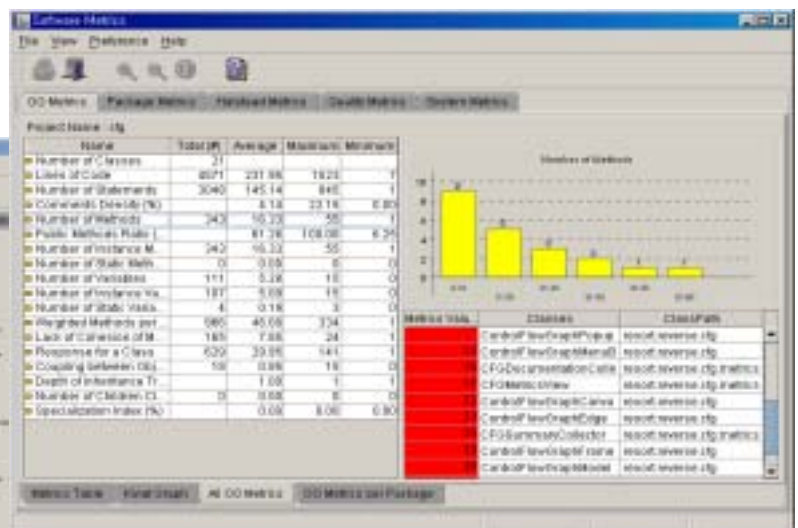
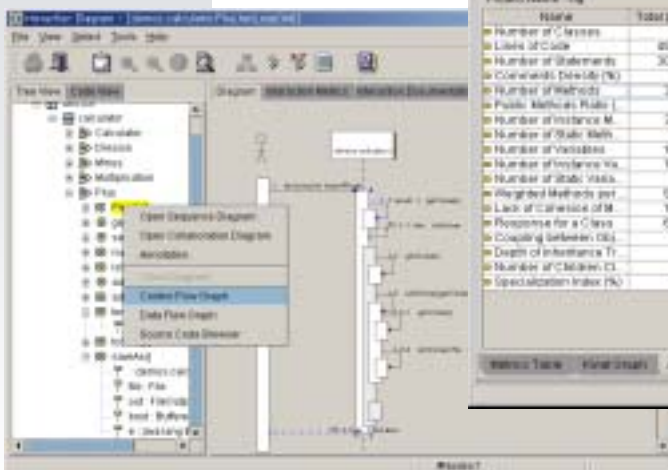
Features

- Hybrid reverse engineering approach combining UML diagram/graph and OO metrics
- Automatic UML diagram/graph generation from package to method level
- SW Architecture Analysis for SQL Development Standard and SW&DB Impact Analysis
- Supporting 100+ software metrics such as size, structure and OO metrics
- Measure and evaluate software quality such as OO, Halstead, System and maintainability characteristic in ISO 9126-3
- Direct to Diagram (navigation)/Code(highlighting)
- Reporting multi-level statistical metrics for product management

Benefits

- Understand both the design and architecture of the software system
- Identify and prevent software design problems early in the development cycle
- Assist to achieve the software quality goals
- Improve understandability, maintainability and performance quickly
- Enable project(IT&QA) managers to control software quality
- Reduce software development, testing and maintenance costs

Sequence Diagram



OO Metrics –
Multi-level Statistical Metrics

- Multi-level Code Audit
 - File
 - Class
 - Method
- Multi-level Statistical Violation
 - Project
 - Package
 - File
 - Class
 - Method

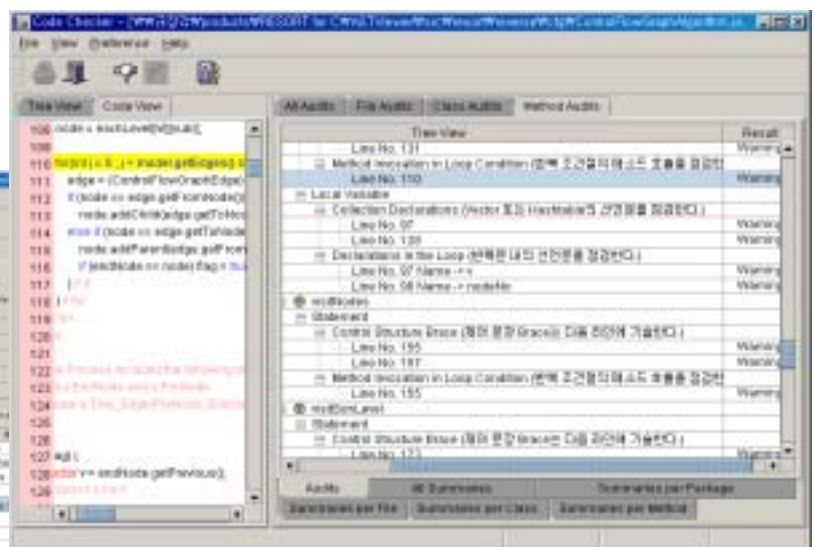
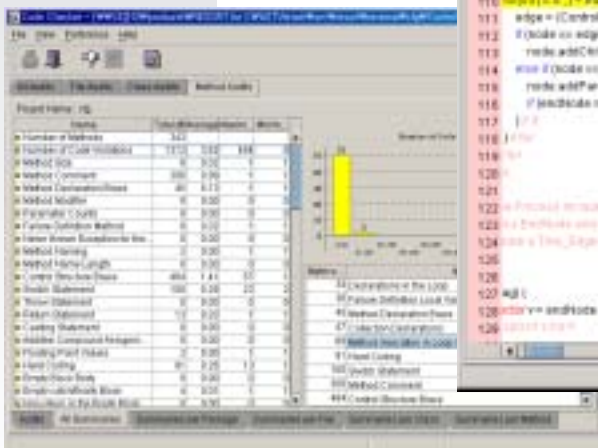
- All Audit
- File Audit
- Class Audit
- Method Audit

Code checker detects inconsistencies and errors in language implementation as well as source code issues involving standards compliance, programming practices, and performance to enable fast, efficient development of truly robust software.

Features

- ## **Benefits**

- ## Code Checker – Statistical Violation Reporting



Code Checker – Code Violation Detection and Highlighting



RESORT for Java – Unit/Integration Testing

□ Testing Solutions

- Static Testing
- Test Case Design
 - Test Drivers
 - Code Instrumentation
- Test Results Analysis
- Multi-level Statistical Coverage
 - Project
 - Package
 - Class

□ Visualization

- Test Case Design
 - Test Case
 - Test Suit
 - Test Scenario
- Unit-level Monitoring
 - Control Flow Testing
 - Data Flow Testing
- Integration-level Monitoring
 - Sequence Testing

Unit/Integration Testing Tool supports a combination of static, white-box and black-box testing solution for identifying, understanding and eliminating defects and non-compliance problems, improving the overall quality of your software. Used in building Java and Web applications, this helps you quickly detect, diagnose and resolve software errors, enhance code performance, and ensure optimum code coverage.

✓ Test Plan & Test Case Design

- Basis path, ME(message execution) path, boolean table, test data set
- Advanced test case, suit and scenario design(class/package/system)

✓ Test Results Analysis

- Test case analysis(pass/fail/error message)
- Test coverage analysis
 - Statement, Branch, All-DU-Path, All-C-Uses, All-P-Uses coverage
 - Method, Class, Message-send(call-pair) coverage
- Performance analysis(run/time)

□ Features

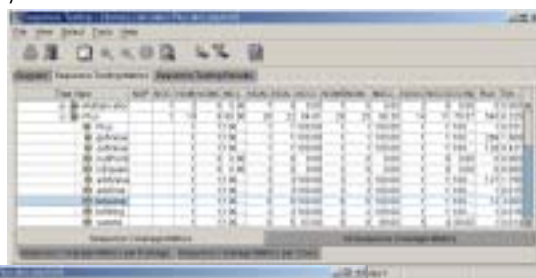
- Hybrid testing approach combining OO diagram/graph and testing solution
- Automatic test case template generation from source code
- Automatic, error-free test driver or JUnit driver generation
- Provide graphical representations(monitors) of selected historical test results
- Support error recoding and tracking
- Identify bottlenecks
- Reporting multi-level statistical coverage for product management
- Highlighting the tested code

□ Benefits

- Provide simplify test planning and test case design, and more testing flexibility
- Help to trace execution status and find logic/interface errors on graph/code
- Improve testing productivity and OO software quality
- Reduce testing and debugging time/effort



Test Case Design



Test Coverage-Sequence Coverage



Test Case Analysis



Interface Error Monitoring

RESORT for JavaFP – Function Point

□Function Point Solutions

- Function Point Count
- Software Cost Estimate
- Productivity & Cost Estimate

□Visualization

- Data Function Size
- Transaction Function Size
- Function Point Estimator
- Function Point Counter

Java Function Point Tool supports a combination of reverse engineering, software metrics and function point count solution for measuring, estimating and analyzing the data and transaction functionality from Java application or at project planning phase. This helps automate the function point count, software development and maintenance size, and software productivity and cost analysis using standard IFPUG CPM 4.2.

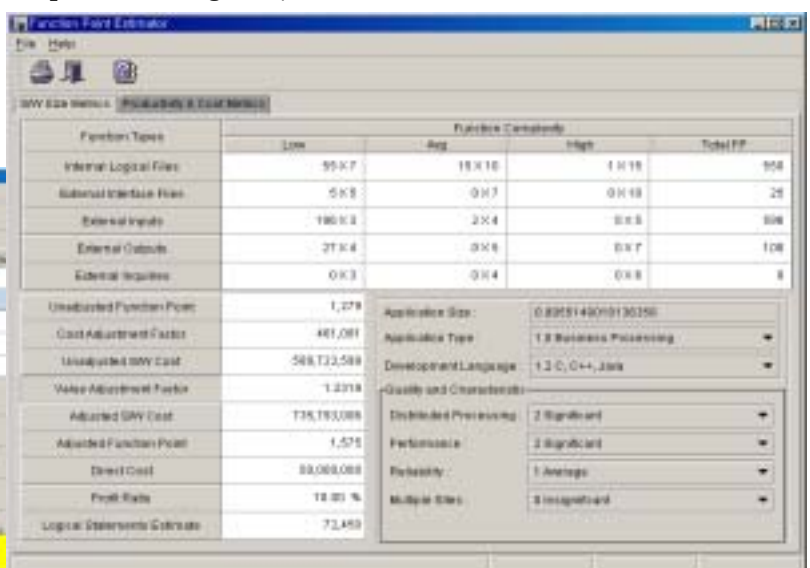
□ Features

- Measure function point size from Java code or at project planning phase
- Analyze data and transaction functionality from the user's viewpoint
- Visualize various UML diagrams(class & sequence) to measure data and transaction functionality
- Analyze unadjusted function point, adjusted function point and software productivity and cost
- Converting function point to SLOC(Source Lines of Code)
- Reporting multi-level statistical metrics for product management
- Documentation summary
 - Adjusted function point estimate report
 - Software productivity and cost analysis report
 - Delivered data and transaction functionality report

□ Benefits

- Measure software size based on the user's point of view
- Understand and analyze software functionality
- Calculate development project, enhancement project and application function points
- Support the whole software life cycle
- Help to estimate software productivity and cost as per software life cycle
- Improving project and IT organization management
- Improving software process – necessary for CMMI 3 and higher
- Reduce function point counting time/effort

Function Point Estimator –
Productivity & Cost Metrics



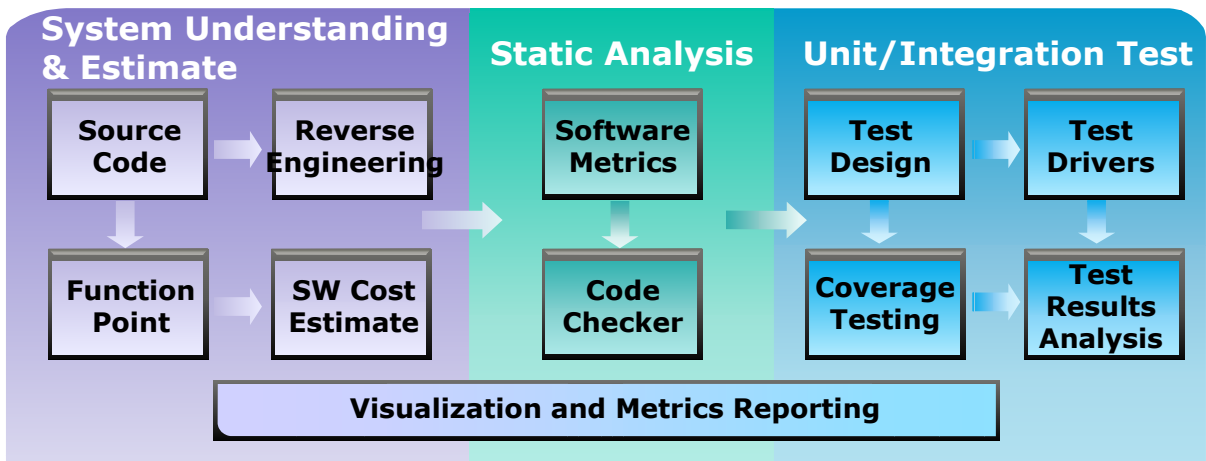
Function Point Estimator - S/W Size Metrics

Soft4Soft Solution Map

❑ **Soft4Soft Solutions for Automatic Software Quality**

RESORT is a suit of tightly integrated reverse engineering, code quality, software quality, testing and function point count tools for software applications and maintenance using Java, JSP, C, C++ or C# in the software development life cycle – from implementation to testing. This helps automate the software quality process, quickly visualize and analyze software documents, analyze source code, derive the highest quality software, design and execute test case, and measure, estimate and analyze function point from a common interface. RESORT enables organizations to improve quality, while significantly reducing time-to-market and overall costs.

- ✓ Detailed analysis and understanding of existing system
- ✓ Management of the software application quality early
- ✓ Quality process based quality assurance solution
- ✓ Integrated testing process for unit and integration testing
- ✓ Estimate Unadjusted Function Point, Adjusted Function Point, and Software Productivity and Cost
- ✓ Minimized communication time between IT&QA manager and developers



❑ **Soft4Soft Products**

- ✓ RESORT for Java(JSP), JavaFP
- ✓ RESORT for C(Pro*C)
- ✓ RESORT for C# (scheduled to release)
- ✓ RESORT for C++ (scheduled to release)

❑ **Platform**

- ✓ Java Platform: Windows 2000/XP/NT, Linux (Red Hat 7.3 higher), UNIX
- ✓ System Requirement: SUN JDK 1.4.x or higher

❑ **Application Areas**

- ✓ S/W Development and Audit, Commercial and IT Sector, Electronics, Telecommunications, Automotive, Military, Aerospace and Financial Industries, IT Educational Center
- ✓ Corporation to adopting verification processes that are described by international standards such as CMMI, ISO 9126-3, or 9001
- ✓ Educational Purpose
- ✓ Outsourcing Software Management

Soft4Soft Co., Ltd.

Soft4Soft is a leading Korean venture firm that researches and develops new products based on software metrics for software development and management skills -from implementation to testing- such as reverse engineering, quality assurance, testing and function point tools.

Soft4Soft Solutions

Soft4Soft releases tools under the RESORT brand for multi-language that are software quality solutions, integrating software development and management environment to support software analysis, quality assurance, testing and function point count solutions based on software metrics.

Customer Support & Services

Soft4Soft is a leading provider of software products and services that help IT organizations build better software quality. We provide our clients with the highest quality service and products.

- ✓ E-mail support
- ✓ Upgrade service
- ✓ Training
- ✓ Testing/Quality consultancy

For more information about Soft4Soft,
please visit www.soft4soft.com

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**T215, ICU VBI Center, 103-6, Munji-Dong, Yousung-Gu, Daejeon,
305-732, KOREA
Tel +82-42-866-6632~3
Fax +82-42-866-6626
Sales{Info}@soft4soft.com**