



Verifysoft releases version 10.1 of the Code Coverage Analyzer Testwell CTC++ with simplified handling for missing Code Coverage

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When testing safety-critical software, standards such as ISO 26262 in the automotive sector, DO-178C in aviation, EN 50128 in rail transport and the general safety standard IEC 61508 require that the software has been fully tested.

Depending on the criticality, statement, branch or modified condition/decision coverage (MC/DC) must be demonstrated. In principle, it is required that 100% of the code has been tested according to the respective coverage level. The prove that the requested coverage level has been reached can be done by using code coverage tools. However, it is possible that the code contains parts that are difficult to achieve through testing or which cannot be tested at all. A reason for not reachable code can be for example "defensive programming".

Therefore, the theoretically required "100% code coverage" in safety-critical software development can rarely be achieved in reality.

Justifications for unreachable/not testable code

For code that is difficult or impossible to test, the new version 10.1 of the Code Coverage Analyzer Testwell CTC++ now offers the option of including and tracking explanations for missing coverage in a structured manner. These so-called justifications affect all coverage measures in the coverage reports - whereby it is always transparent which parts of the code were actually tested and which were covered purely by justifications.

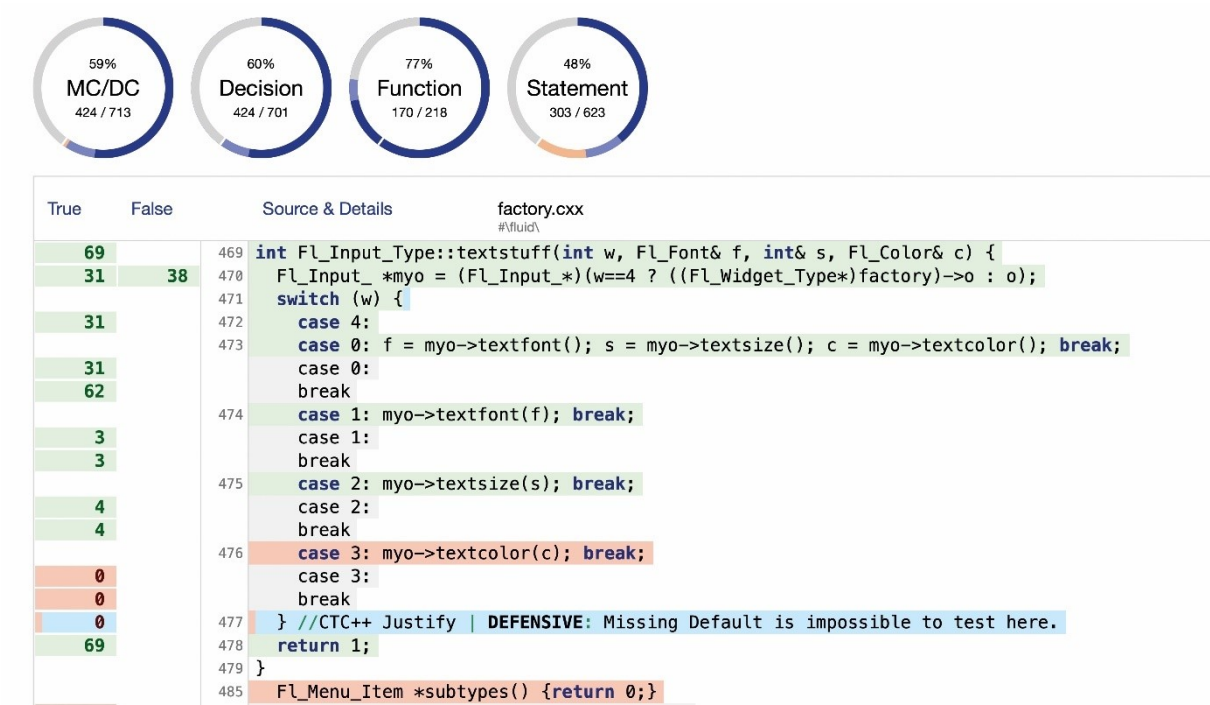
Testwell CTC++ offers two ways of recording justifications in order to meet different workflow requirements. The justifications can either be placed in the source code as comments or separately from the code in accompanying files. This makes the tester's work considerably easier. Code coverage and justifications for untested code are transparent and can be easily verified for certifications.

Text-based outputs in any format

Since version 10, the report generation of the Code Coverage Analyzer Testwell CTC++ has been based on customizable templates for the structured HTML report. With the new version 10.1, reports can now also be generated from simple templates consisting of a single text file. The template system supports any text-based format such as XML, JSON, CSV, Markdown, YAML etc. A simple template language allows existing templates to be adapted and custom templates to be created. Testwell CTC++ users can thus

create reports tailored to their needs. Verifysoft also provides Testwell CTC++ customers with a number of templates for various use cases.

Screenshot



The screenshot of the Code Coverage Analyzer Testwell CTC++ shows the tested code parts in green and untested code in red. The code in line 477 is also untested (recognizable by the red marking on the left) - however, a justification has been inserted for this, which states that this line of code is not testable. This "justified" part of the code is then displayed in blue.

In the overview pie charts, tested code is also shown in dark blue, justifications in light blue and untested code in red. The target value for coverage is approx. 60% for statement coverage. Accordingly, the proportion exceeding 60% is marked in gray. If the target value for coverage were set to 100%, for example, the part that is now gray would also be displayed in red, as tests are still missing for this.

Further Information:

Testwell CTC++:
https://www.verifysoft.com/en_ctcpp.html

What is new in Testwell CTC++ 10.1?
https://www.verifysoft.com/en_ctcpp_version_10_1.html

About Verifysoft Technology

Verifysoft Technology GmbH is a leading provider of tools, services and training to increase software quality and reduce development costs in the sector of embedded software development.

Founded in 2003, the company supports over 750 customers in 43 countries worldwide with an international team of consultants at its headquarters in Offenburg/Germany.

One focus of Verifysoft Technology is the measurement and documentation of code coverage and code quality. With Testwell CTC++, Testwell CMT++ and Testwell CMTJava, Verifysoft Technology offers solutions that are used in all safety-critical industries. Verifysoft Technology is also a distributor for various complementary tools for software quality assurance, such as static code analysis.

Further information about Verifysoft Technology is available from www.verifysoft.com

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