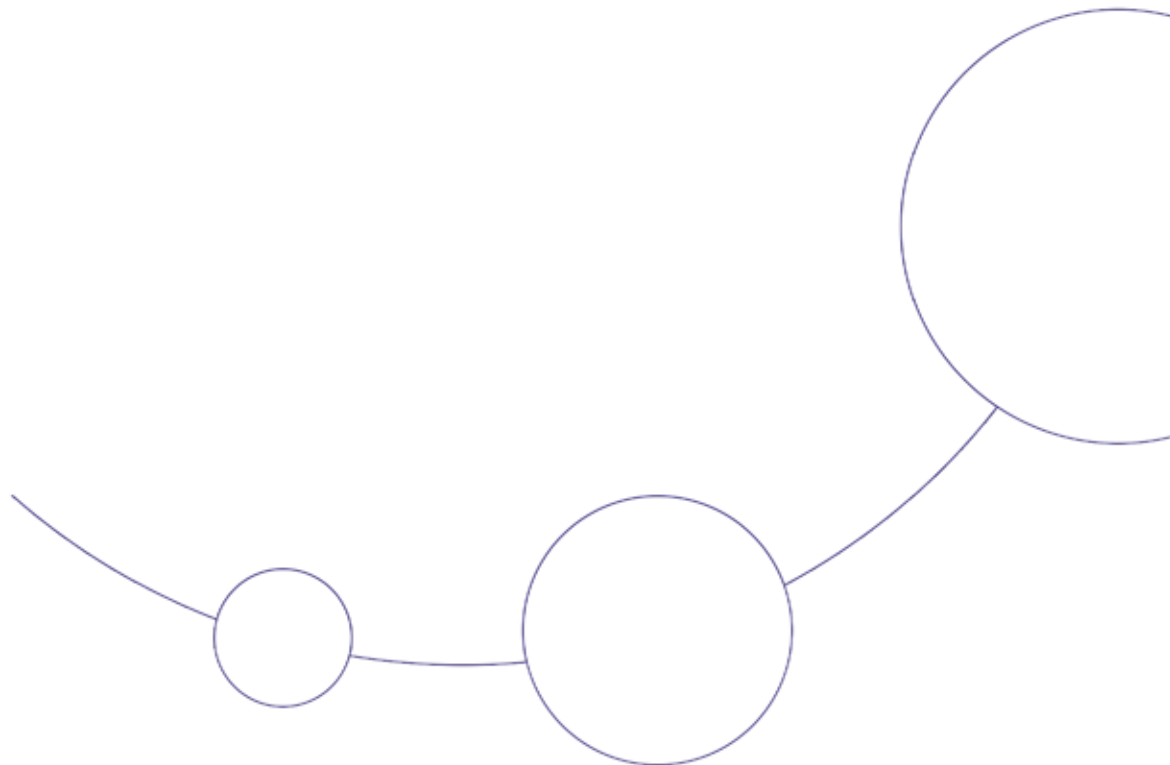




Verybench User Guide

C/C++ and Java Metrics





Verifysoft Verybench *for C++ or Java*

This User Guide intends to provide help for the following softwares:

Verybench for C/C++, Verybench for Java



Verifysoft GmbH assumes no responsibility for any errors or omissions that may appear in this document nor does Verifysoft GmbH make a commitment to up date the information contained herein. Third party brands, names and signs are the property of their respective owners.

For more information and updates visit:

www.verifysoft.com

© Verifysoft Technology GmbH, 2010

1. Issue

Printed in Germany, Offenburg March 2010



Table of Contents

1. Introduction to Verybench	
1.1 Testwell CMT++/CMTJava	4
1.2 Verybench - A Graphical Front End for Metrics.....	5
2. Installing Verybench	
2.1 Prerequisites	6
2.2 Installing, configuring and starting Verybench.....	6
3. Graphical User Interface	
3.1 Main Sections of Verybench.....	8
3.2 Main Menu of Verybench	9
3.3 Tool Sidebar of Verybench.....	11
3.3.1 Reporting Sessions Panel	11
3.3.2 Reports Panel	12
3.3.3 Alarms Panel	13
3.4 Views of Verybench	14
3.4.1 Management View	14
3.4.2 Controlling View.....	15
3.4.2.1 Creating PDF Reports from Statistics.....	16
3.4.2.2 Creating Statistics	16
3.4.2.3 Creating Images from Diagrams	17
3.4.3 Review View	18
3.4.4 Development View.....	19
4. Projects in Verybench	
4.1 Creating Projects	21
4.2 Projects with SVN Support.....	22
5. Reporting Sessions	
5.1 Creating A New Reporting Session.....	23
5.2 Reporting Sessions with SVN Support	24
6. Reports	
6.1 Creating A New Report	25
6.2 Viewing PDF Reports	26
6.3 Handling Reports	27
7. Index	28
8. Appendix	
8.1 Minimal Requirements	30
8.2 Navigation Symbols.....	30
8.3 Advising Symbols.....	31
8.4 Closing Legal Disclaimer	31
9. Appreciation.....	32
10. Contact	33



1. Introduction to Verybench

1.1 Testwell CMT++/CMTJava

Testwell CMT++/CMTJava are console-based tools to measure the complexity of source code written in C, C++ or Java and are developed by the Finnish company Testwell Oy (www.testwell.fi). These tools are able to calculate certain metrics such as McCabe’s Cyclomatic Number, Lines of Code as well as Halstead’s metrics and maintainability indexes.

By now, results of each code analysis performed in Testwell CMT++/CMTJava could be displayed as report documents in various output formats such as plain text, HTML, XML and CSV but only in a non-graphical way as figure 1.1 shows.

```

.....
*          CMT++, Complexity Measures Tool for C/C++, Version 4.2          *
*          *          *          *          *          *          *          *
*          COMPLEXITY MEASURES REPORT                                     *
*          *          *          *          *          *          *          *
*          Copyright (c) 1998-2007 Testwell Oy                           *
*          *          *          *          *          *          *          *
.....

License notice: This is a limited period evaluation copy license.

The input CMT++ report was produced at Wed Sep 23 19:56:43 2009
cmt options: -o C:\DOCUME~1\gob\cmt\report.tmp -f C:\DOCUME~1\gob\cmt\files.txt
Html'ized by cmt2html v2.2 at Wed Sep 23 19:56:43 2009
cmt2html options: -i C:\DOCUME~1\gob\cmt\report.tmp

This is SUMMARY view. Go to DETAILED view. See instructions.

Alarms-#      Measured object      v(G) LOCphy LOCpro c%  Y  B  MI
-----
[red bar]    as-iosched.c      180- 1524  947- - 47428-11.74- 112
[red bar]    blk.h                7   119   80  - 3120  0.63  121
[red bar]    blk-barrier.c       62   419  267  - 9969- 2.77- 113
[red bar]    blk-core.c         192- 2167 1148- 56719-12.91- 121
[red bar]    blk-exec.c          8   106   50  - 1595  0.38  122
[red bar]    blk-integrity.c     1    0     0-   0- 0.00  171
[red bar]    blk-icc.c           16   180  122  - 3808  0.92  121
[red bar]    blk-map.c           44   319  185  - 7254  2.54- 108
[red bar]    blk-merge.c         69   428  288  - 11962- 3.59- 106
[red bar]    blk-settings.c      20   472  218  - 8108- 1.92  134
[red bar]    blk-softirq.c       16   175  112  - 3662  0.86  121
[red bar]    blk-sysfs.c         29   426  329  - 14229- 3.36- 106
[red bar]    blk-tag.c           29   402  204  - 7270  2.42- 122
[red bar]    blk-timeout.c       18   230  135  - 4734  1.13  125
[red bar]    blktrace.c          71   860  603- 28939- 6.06- 115
[red bar]    bsg.c               119- 1111  808- 37638- 9.43- 99
[red bar]    cfq-iosched.c      260- 2464 1604- 81636-18.41- 113
[red bar]    cmd-filter.c        23   232  165  - 6107  1.74  112

[red bar]    OVERALL (14 %)

OVERALL SUMMARY:
    
```

Figure 1.1: Non-graphical HTML output of Testwell CMT++/CMTJava.



The traditional mechanism of Testwell CMT++/CMTJava to generate its reports is shown in figure 1.2.



Figure 1.2: Traditional way of reporting within Testwell CMT++/CMTJava.

1.2 Verybench - A Graphical Front End for Metrics

Since Verybench is a graphical front end to simplify the process of reporting in code metrics, Verybench is capable of reporting in all well known reporting formats Testwell CMT++ or CMTJava are capable of and even extends them. The more modern mechanism of reporting in Verybench is referred to in chapter 5. Verybench is the graphical front end for the underlying analyzing back ends Testwell CMT++ and CMTJava. In order to use Verybench, Testwell CMT++ or CMTJava must be installed on the same physical machine (localhost). Verybench obtains key figures from analyses of Testwell CMT++ or CMTJava and presents them visually within one of four possible views. Verybench was designed to run at least on as many platforms as Testwell CMT++ and CMTJava do to fully support the back ends. Therefore Verybench was developed with Sun's JAVA™ technology.

 For more information about [views](#) see chapter 3.4.



2. Installing Verybench

2.1 Prerequisites

Due to Verybenches platform independence it is available on many platforms including Microsoft Windows® and several Linux environments that provide support for the JAVA™DK (JDK) by SUN Microsystems®. Verybench needs a valid and proper configured JAVA™ virtual machine installed and running before it can be installed and started.

- i This guide is not intended to give any advice on how to download or install the JAVA™DK (JDK) or JAVA™ (JRE) runtime to run Verybench. For more information on the version of JAVA™ that is appropriate to run Verybench with see the appendix.**
- i Verybench needs a valid license of Testwell CMT++/CMTJava in order to run.**

2.2 Installing, configuring and starting Verybench

- ↘ Install Verybench by executing the [VerybenchSetup.exe](#) file.
- ↘ Start Verybench right away by either checking the [Run Verybench](#) option on the last step of the installation wizard or start it manually by double clicking the Verybench icon in the installation folder.
- ↘ Follow the dialog prompted by Verybench shown in figure 2.1.
- ↘ Follow the [Verybench First Time Configuration](#) wizard and finish the initial configuration. After finishing the wizard Verybench is good to go.

Installing Verybench



- i** On most operating systems the installation starts with the **second** step of the **First Time Configuration Wizard** which is **Select Working Directory**. Verybench then detects an probably existing installation of Testwell CMT++/CMTJava automatically and checks if it's valid. However if Verybench does not find such a valid installation Testwell CMT++/CMTJava was not installed before running the **First Time Configuration Wizard**. In this case the **First Time Configuration Wizard** starts in the **first** step and users have to manually set the path to an existing installation of Testwell CMT++/CMTJava. Every confined setting can again be changed afterwards via Verybenches main menu within the program.
- i** Find more help on installing Verybench in the corresponding help pages online.

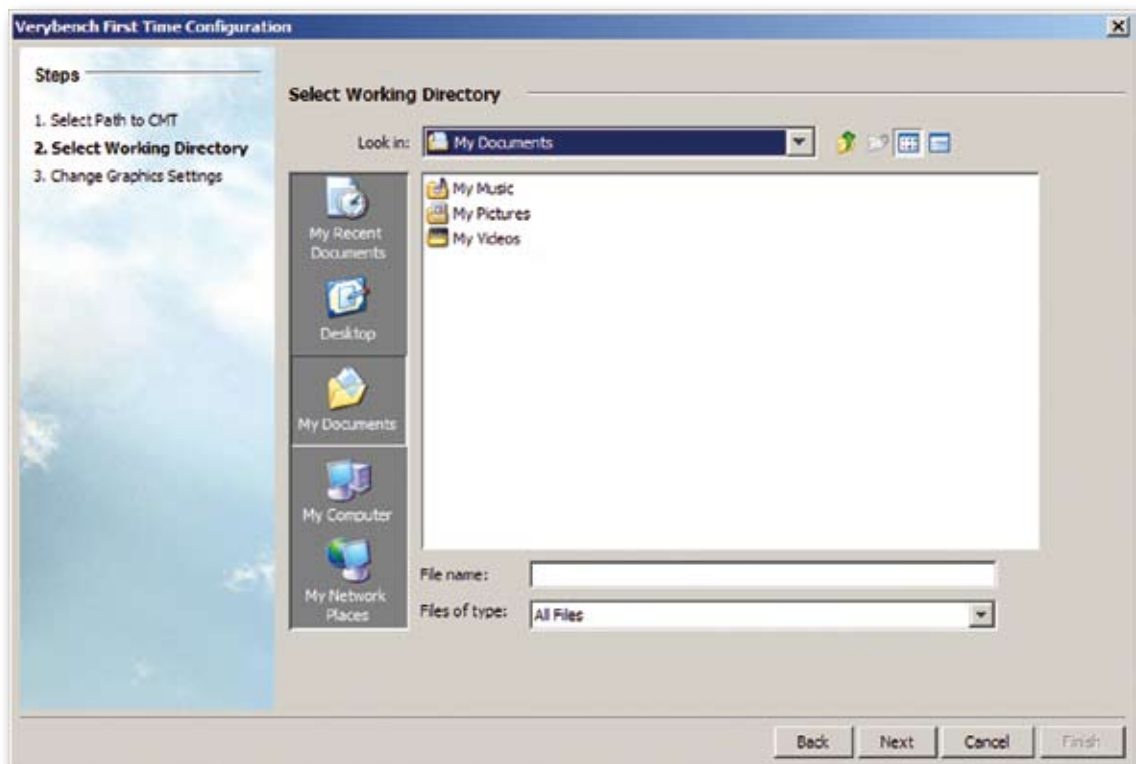


Figure 2.1: Select the working space (directory) of Verybench.



3. Graphical User Interface

3.1 Main Sections of Verybench

Verybench is roughly divided into three main sections:

- ① Main menu
- ② Tool sidebar
- ③ Views

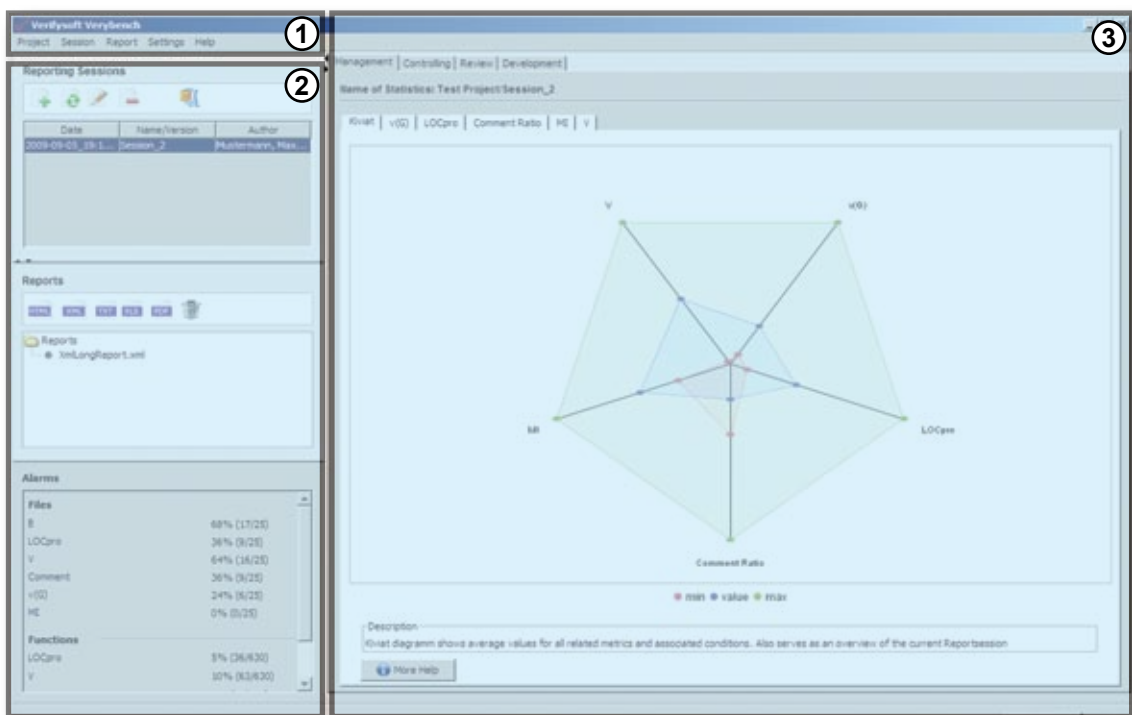


Figure 3.1: Main sections of Verybenches graphical user interface.



3.2 Main Menu of Verybench

In the main menu you will find basic functionality of Verybench. Go there every time you need basic control upon Verybench. The main menu consists of five major sections shown in the figure 3.2.



Figure 3.2: Main menu of Verybench.

- *Project*
 - ☞ Create New Project (Alt+N)
 - ☞ Open Existing Project (Ctrl+O)
 - ☞ Change Project Settings
 - ☞ Import Project from ZIP File (Ctrl+I)
 - ☞ Export Project to ZIP File (Ctrl+E)
 - ☞ Quit

- *Session*
 - ☞ New Reporting Session (Ctrl+N)
 - ☞ Update Reporting Session (Ctrl+U)
 - ☞ Change Reporting Session Settings
 - ☞ Export Reporting Session to ZIP
 - ☞ Delete Reporting Session (Ctrl+Shift+D)

- *Report*
 - ☞ Create Report
 - ☞ *PDF Report*
 - ☞ *Text Report*
 - ☞ *XML Report*
 - ☞ *HTML Report*
 - ☞ *CSV Report*



- *Delete Report*

- *Settings*
 - ▣ *Change Settings*

- *Help*
 - ▣ *Help*
 - ▣ *About*



3.3 Tool Sidebar

3.3.1 Reporting Sessions Panel

The [Reporting Sessions](#) panel shows already created reporting sessions and offers five possibilities of manipulation shown in figure 3.3.

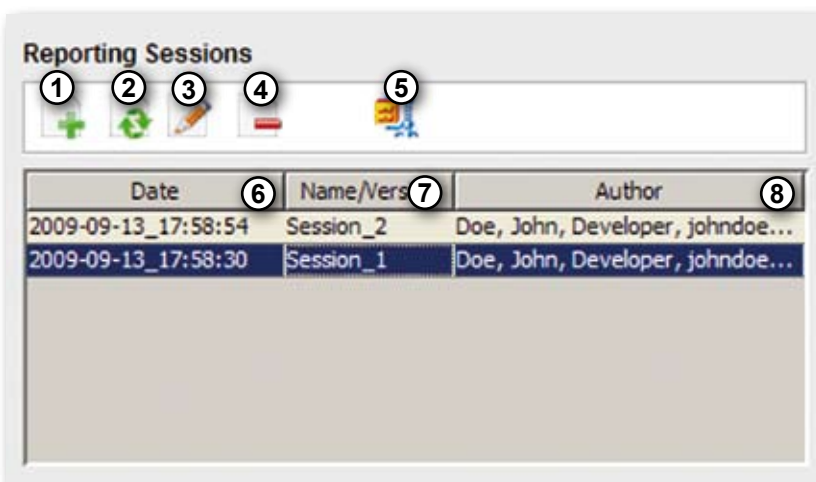



Figure 3.3: Reporting session tool bar of Verybench.

- ① Creates a new reporting session
 - ② Updates the current reporting session
 - ③ Changes the settings of the current reporting session
 - ④ Deletes the selected reporting session
 - ⑤ Zips the current reporting session
- i At least one reporting session must always exist. So if you're dealing with only one reporting session you will not be able to delete it.**
- ⑥ Date of creation of the reporting session
 - ⑦ Name of the reporting session
 - ⑧ Author of the reporting session
-  Switch between existing reporting sessions by selecting another one.



3.3.2 Reports Panel

With this panel several different reports can be generated. The generated reports are then listed with their corresponding file extensions in the tree shown in figure 3.5.

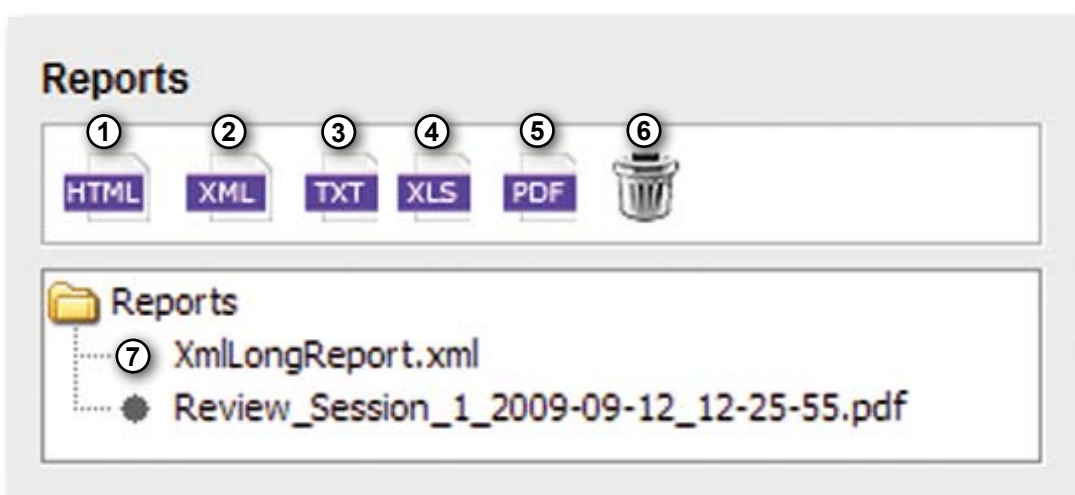


Figure 3.5: Generated reports of different file formats.

- ① Create a new HTML report
 - ② Create a new XML report
 - ③ Create a new text report
 - ④ Create a new XLS (Microsoft Excel®) report in CSV file format
 - ⑤ Create a new PDF report
 - ⑥ Delete the selected report
-
- ⑦ The [XmlLongReport.xml](#) cannot be deleted and exists even before any other report can be generated. It represents a container for all information obtained from analyzed source code.



3.3.3 Alarms Panel

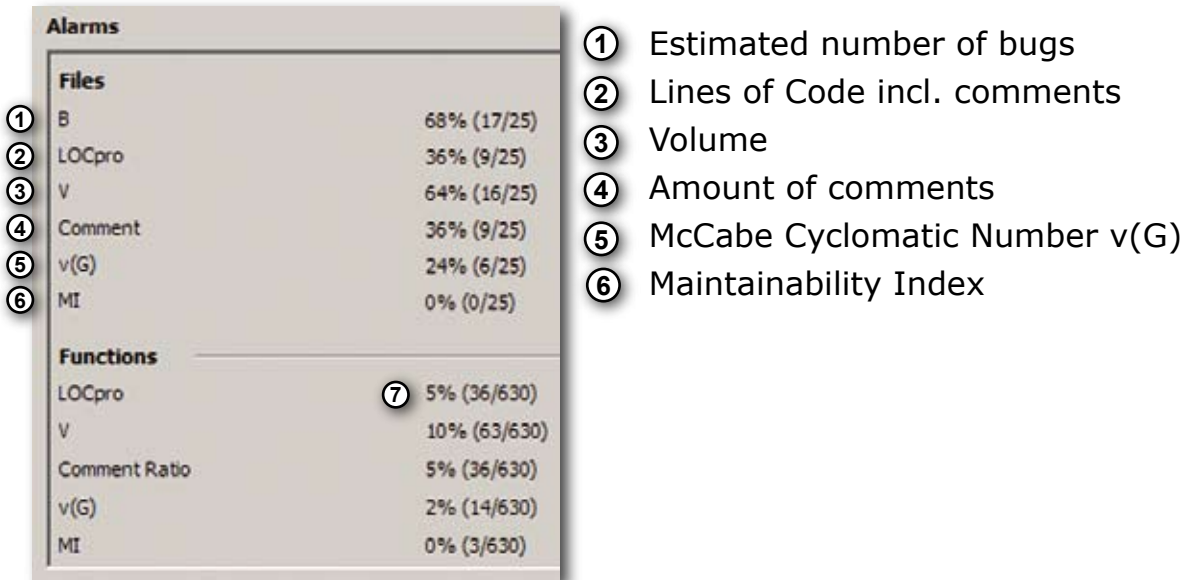


Figure 3.6: Alarms on files and functions.

The information presented within the **Alarms** panel is taken from the **Xml Long Report** provided by Testwell CMT++/CMTJava. It shows a summary of the metrics that were used in the analysis. It is divided into two smaller sections: **Files** and **Functions**. In the section **Files** all files are listed which lie beyond a certain alarm limit for a specific metrics (see below for the special notation). The section **Functions** shows the same significant numbers for analyzed functions. These metrics in each section are either taken relatively to the file analyzed as a whole or to a single function as a whole.

- ⑦ All metrics are given in the following notation: $f_{pr} \% (f_{inv} / f_{tl})$
- f_{pr} processed files/functions
 - f_{inv} functions/files involved in metrics
 - f_{tl} total amount of functions/files

Verybench for Java even shows information about alarming metrics within Java classes and general information about a project's structure i.e. number of packages, files, classes, methods and interfaces.



3.4 Views of Verybench

Since every user group which is involved in software quality assurance (QA) needs to focus on different information and needs to perform several different operations on the data provided by Verybench, Verybench has four default views built in shown in figure 3.7. These four views are suited to individual needs of typical user groups and are also reflected in corresponding reports of analyses.

3.4.1 Management View

Within the management view of Verybench the user is able to see all metrics graphically except the metrics B. Additionally a Kiviati diagram is generated which integrates all metrics into one diagram. It gives a short glance on how much analyzed source code varies from high quality source code which is represented by the outline of the diagram also shown in figure 3.7.

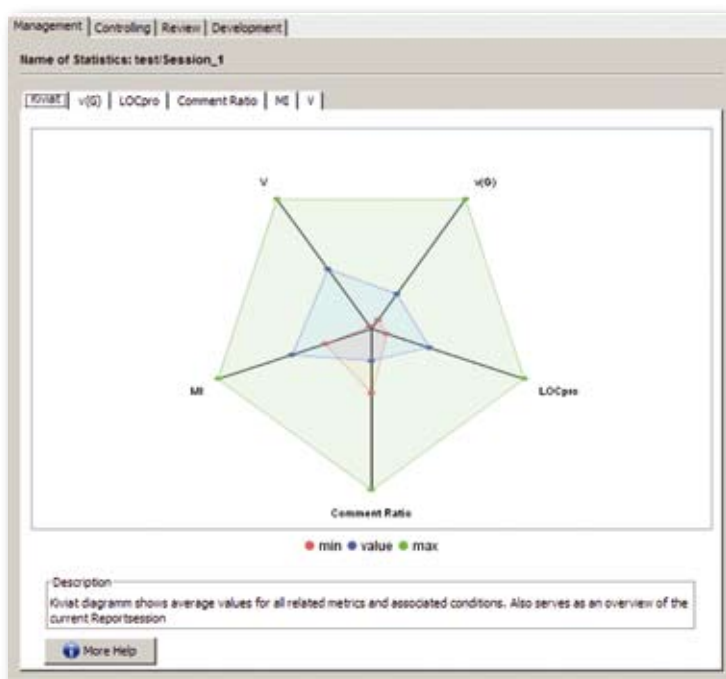


Figure 3.7: Kiviati diagram in Verybench's management view.

Views of Verybench



To give an impression how other diagrams taken from code metrics such as $v(G)$, LOCpro, CommentRatio and V might look like in Verybench the metrics: maintainability index (MI) is shown exemplarily in figure 3.8.

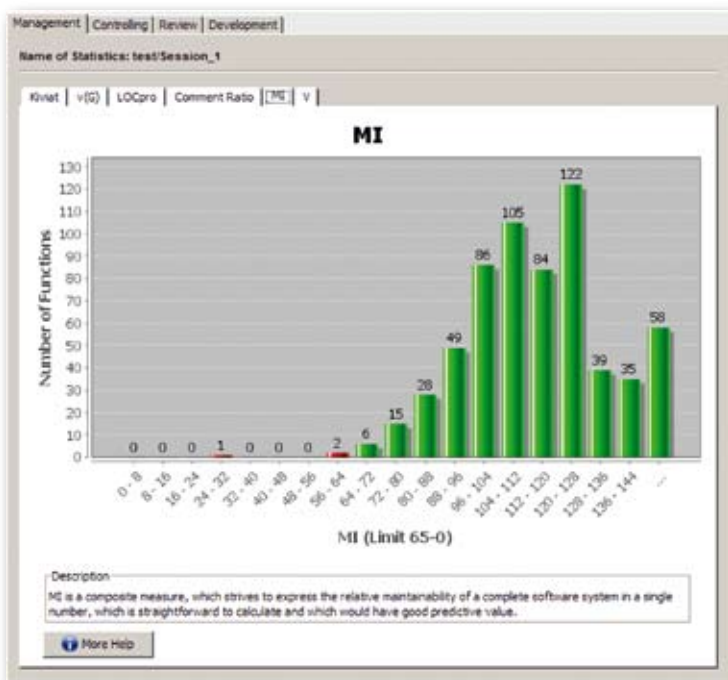


Figure 3.8: Column diagram in Verybenches management view.

3.4.2 Controlling View

The controlling view enables the user to compare existing reporting sessions by their statistics. Statistics can be performed to mark a project's progress during its course, in other words, to visualize tendencies of complexity over time. Therefore reporting sessions can each be regarded as individual snapshots in a project's course. With SVN support enabled it is even possible to follow a tendency between revisions. Figure 3.9 shows two reporting sessions that has been statistically summarized. Verybench enforces easy comparing between reporting sessions since differences can easily be recognized by a trend line. In [Verybench for Java](#) a new sort of diagram was added which shows the ratio LOCpro to MaxND (max. nesting depth).

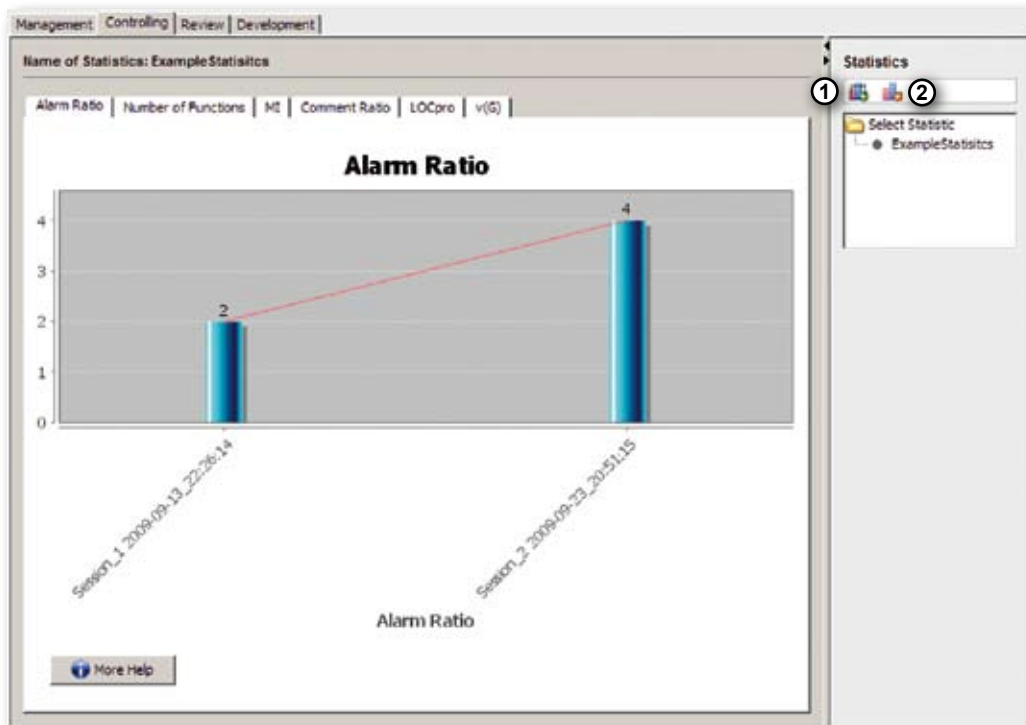


Figure 3.9: Comparison of alarm ratios (summary) of two reporting sessions.

3.4.2.1 Creating PDF Reports from Statistics

- Select the statistic you want to create a PDF report from within the *Statistics* panel on the right hand side within the *Controlling* view.
- Click the PDF icon in the tool sidebar on the left hand side of Verybench to create the PDF report.

3.4.2.2 Creating Statistics

- Create a statistic by clicking on the left icon (① figure 3.9) within the *Statistics* tool bar on the right hand side of the *Controlling View*. Do the same action if you want to delete an existing statistic, only select the statistic you want to delete and click the right icon within the *Statistics*

Views of Verybench



tool bar on the right hand side of the [Controlling View](#) (📌 figure 3.9).

➤ Enter a name for the new statistic in the up coming dialog and choose a basis for this statistic from the three possibilities offered at the bottom of the dialog:

- ▶ *Summary (sums up each metrics individually)*
 - ▶ Amount of alarms per session
 - ▶ Number of functions per session
 - ▶ Number of functions involved in
 - ▶ MI, Comment Ratio, LOCpro, v(G)
- ▶ *Average (averages each reporting session individually)*

Shows the averaged number of functions involved in:

 - ▶ MI, LOCprom, LOCpro, Comment Ratio, v(G)
- ▶ *Specific function*

Shows a specific file's complexity's behavior over time.

➤ Choose all the sessions that should be part of the new statistic.

3.4.2.3 Exporting Diagrams to Images

If a specific diagram needs to be exported e.g. to be used in another documentation it needs to be converted to an image format first.

➤ Right click on the diagram you want to reuse as an image later on and select [Save as PNG](#).

➤ Follow the file chooser dialog for the image's final destination to save.



3.4.3 Review View

The review view only shows files that exceeded a set alarm value by one or more metrics. Every line of the tree table shown in figure 3.10 contains important information that can be reviewed.

The Tree Table in Detail

Click one of the listed files within the tree table to see all its functions and its source code in a scroll panel below the tree table.

- ① Selected source files
- ② Corresponding functions
- ③ Corresponding source code

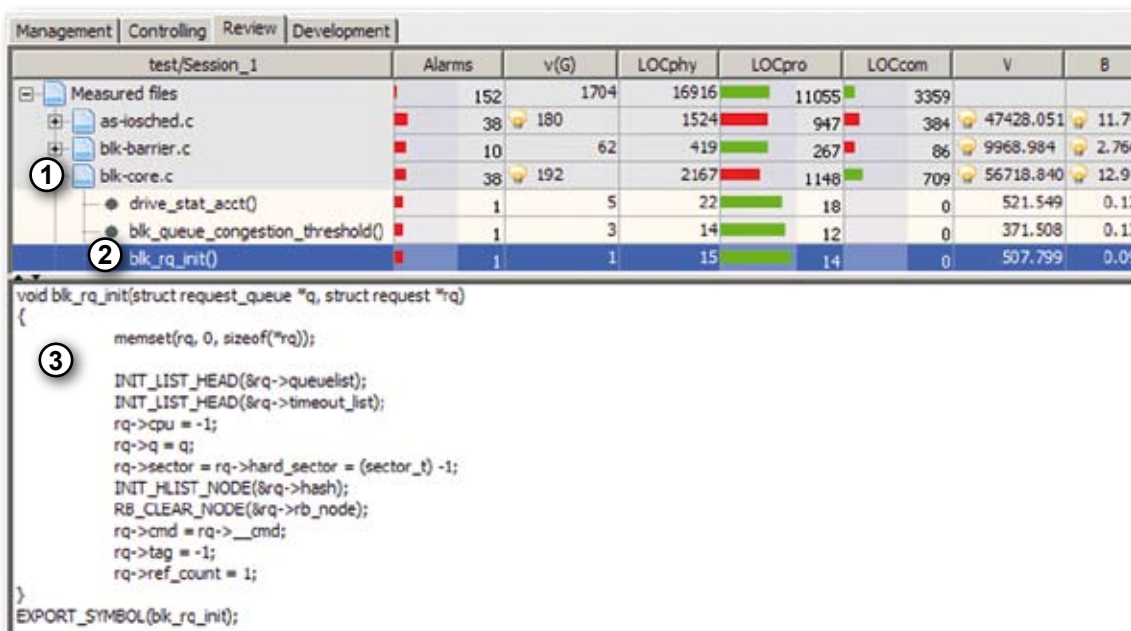


Figure 3.10: Degrees of detail within the tree table.

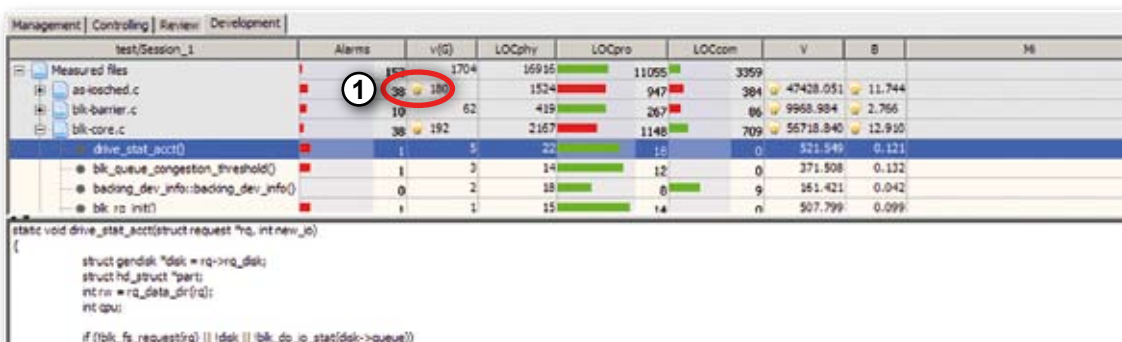
Views of Verybench



3.4.4 Development View

The development view shows all files and their functions of the current reporting session, metrics included. Whereas on the one hand all other views filter the data gathered and set a focus on a specific aspect on the received information, the development view widely shows all data that Verybench obtains from Testwell CMT++/CMTJava. On the other hand the development view is identical to the review view. Developers have detailed knowledge about their source code and want to measure the quality of their work to perform improvements when needed. Often developers also even need detailed knowledge about source code from other developers to extend it or to evaluate third party source code before adding it to a project of already high quality. To do this, metrics to analyze single files and functions are needed as well as a view on the related source code.

Therefore the development view has like the review view a tree table built in which shows all analyzed files and functions of a reporting session as well as all corresponding results of used metrics within its columns. Figure 3.11 shows Verybench with the **Development** tab page selected. The tree table of the development view highlights all measured values which are not within set limits with a glowing bulb icon (①). The columns **Alarm**, **LOCpro** and **LOCcom** are highlighted additionally by vertical bars also shown in figure 3.11.



test/Session_1	Alarms	v(G)	LOCphy	LOCpro	LOCcom	V	B	M
Measured files	157	1704	16915	11055	3359			
blk-locked.c	38	180	1524	947	384	47428.051	11.744	
blk-barrier.c	10	62	415	267	86	9968.584	2.766	
blk-core.c	38	192	2167	1148	709	56718.840	12.910	
drive_stat_ioctl()	1	5	22	15	0	521.549	0.121	
blk_queue_congestion_threshold()	1	3	14	12	0	371.508	0.132	
bading_dev_info(bading_dev_info())	0	2	18	8	9	161.421	0.042	
blk_rq_init()	1	1	15	14	n	507.799	0.099	

```
static void drive_stat_ioctl(struct request *rq, int new_io)
{
    structgendisk *disk = rq->rd_dsk;
    structhd_struct *part;
    int ra = rq_data_dir(rq);
    int op;


    if (!blk_fs_request(rq) || !disk || !blk_do_io_stat(disk->queue))
```

Figure 3.11: Tree table in Verybench review view.



The Columns of the Development View explained

- ▶ **Columns** All names of measured files (head of column is variable)
- ▶ **Alarms** Amount of measured values within a function or file which lie beyond a certain set limit.
- ▶ **LOCpro** The number of actual program lines (LOCpro) where pure comments and blank lines are ignored.
- ▶ **LOCcom** The number of lines with comments (these lines may also contain program code).
- ▶ **LOCphy** The number of physical lines.
- ▶ **v(G)** The cyclomatic number ($v(G)$), which measures the number of conditional branches in the flow of control.
- ▶ **V** The program volume (V), which is a measure of the information contents of a program.
- ▶ **B** Estimation of a number of programming errors (B).
- ▶ **MI** Maintainability Index
- ▶ **MaxND** MaxND is a measure on how deep the maximum `{}` nesting in a function is.

 For more information about metrics supported by [Verybench for C/C++](#) or [Verybench for Java](#) see the CMT++/CMTJava user guide within your CMT++/CMTJava installation.



4. Projects in Verybench

4.1 Creating A New Project

Users can create projects to manage their reporting activities. These projects respectively comprise all current and future reporting sessions, charts and reports. When creating a new project the user must specify three steps shown in figure 4.1. After a project has been created always a reporting session is created too.

- Create a new project by clicking [Create New Project](#) in the section [Project](#) in the main menu.
- Set up a name for the new project.
- Set the beginning and end of the this new project.
- When SVN support is selected, also:
 - ▶ Set an SVN user name
 - ▶ Set an SVN password
 - ▶ Set an URL to a repository
- ❗ **When SVN support is enabled you cannot choose any more local files. Verybench does not support measuring local and remote files at the same time. If you're not familiar with versioned code or repositories in general go and see the documentation of Subversion/SVN before you bind Verybench to a repository.**
- Choose all source files which set the basis for future reports.
- Set up all attributes for each team member such as:
 - ▶ First name
 - ▶ Last name
 - ▶ Role



- ▶ Phone number
- ▶ Email address

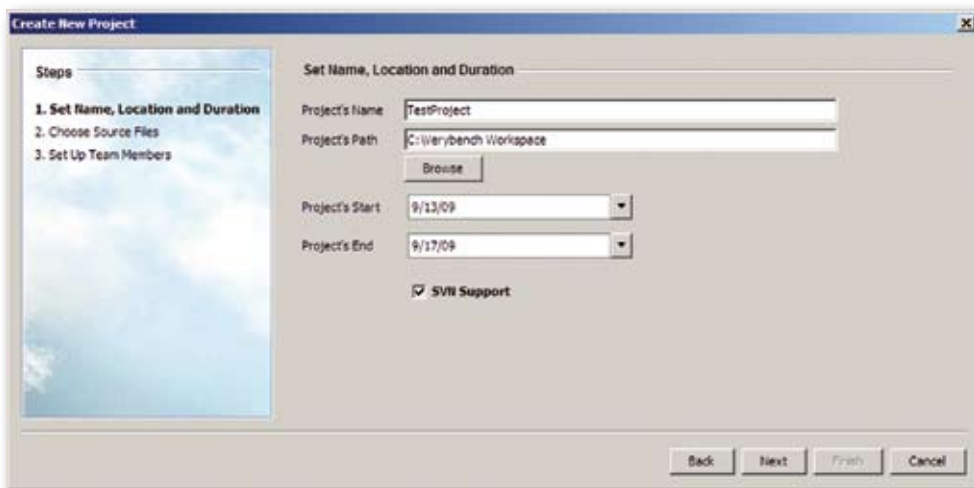


Figure 4.1: First step of the [Create New Project](#) dialog.

4.2 Projects with SVN Support

Verybench supports Subversion as version control system. With the help of Verybench files can directly be checked out of a repository and can be analyzed. When checking out always the latest revision is taken (head). Verybench checks files out into a folder within the current workspace. When updating a reporting session or when creating a new reporting session the latest revision is taken or if necessary updated before it is taken. To configure a repository's access see the sub chapter 4.1 (enabling SVN support).

- i When checking out files from a repository Verybench only checks out complete folders. Single file check-outs are not supported yet.**



5. Reporting Sessions

5.1 Creating A New Reporting Session

Actually a reporting session is a collection of several reports created within a certain period of time - therefore it can contain many reports.

i New source files cannot automatically be added during runtime after a reporting session was created. Anyway, to accomplish such an operation a new reporting session has to be created first which includes all already measured files and additionally the new source files to be measured. Unfortunately such a merge must still be done manually. Verybench does not support automatic merging of reporting sessions.

In [Verybench for Java](#) settings for metrics for [top level](#) and [second level classes](#) can be changed.

↪ Create a reporting session by either using the tool sidebar of Verybench or by clicking [New Reporting Session](#) in the section [Session](#) in the main menu.

Follow the six steps to set up a reporting session:

- ↪ Set up a name for the new reporting session**
- ↪ Set up an author (team member)**
- ↪ Set up all source files that are basis later reports**
- ↪ Set up general settings for Testwell CMT++/CMTJava reports**
- ↪ Set alarm limits for files**
- ↪ Set alarm limits for functions**

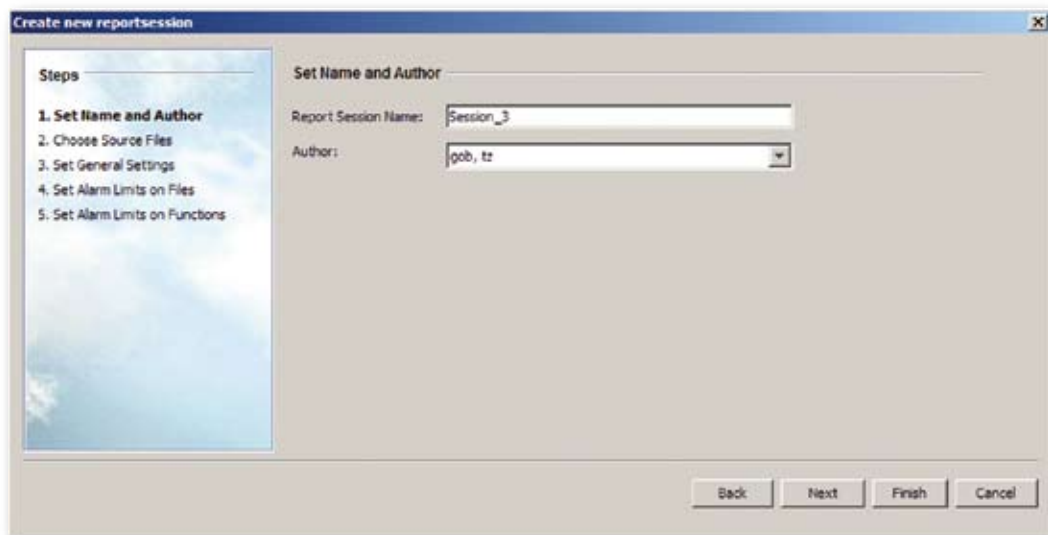


Figure 5.1: Creating a reporting session in Verybench.

5.2 Reporting Sessions with SVN Support

In case SVN support had been activated within Verybench when creating a new reporting session all chosen source files will be updated automatically with source files from the latest revision from the repository, if necessary. Therefore Verybench always works with the latest version committed.



6. Reports

6.1 Creating A New Report

Several different reports can be generated from measured source code files. For this purpose Verybenches tool sidebar is used (see chapter 3.3.2, figure 3.5). Figure 6.1 shows the mechanism of reporting in Verybench in contrast to the mechanism of Testwell CMT++/CMTJava. HTML, XML, TXT and CSV reports are natively generated reports by Testwell CMT++/CMTJava. However generating a PDF report goes along a special track as also shown in figure 6.1. The content of a PDF report strongly depends on the view that is currently active when generating the report. Therefore there is more than just one type of a PDF report.

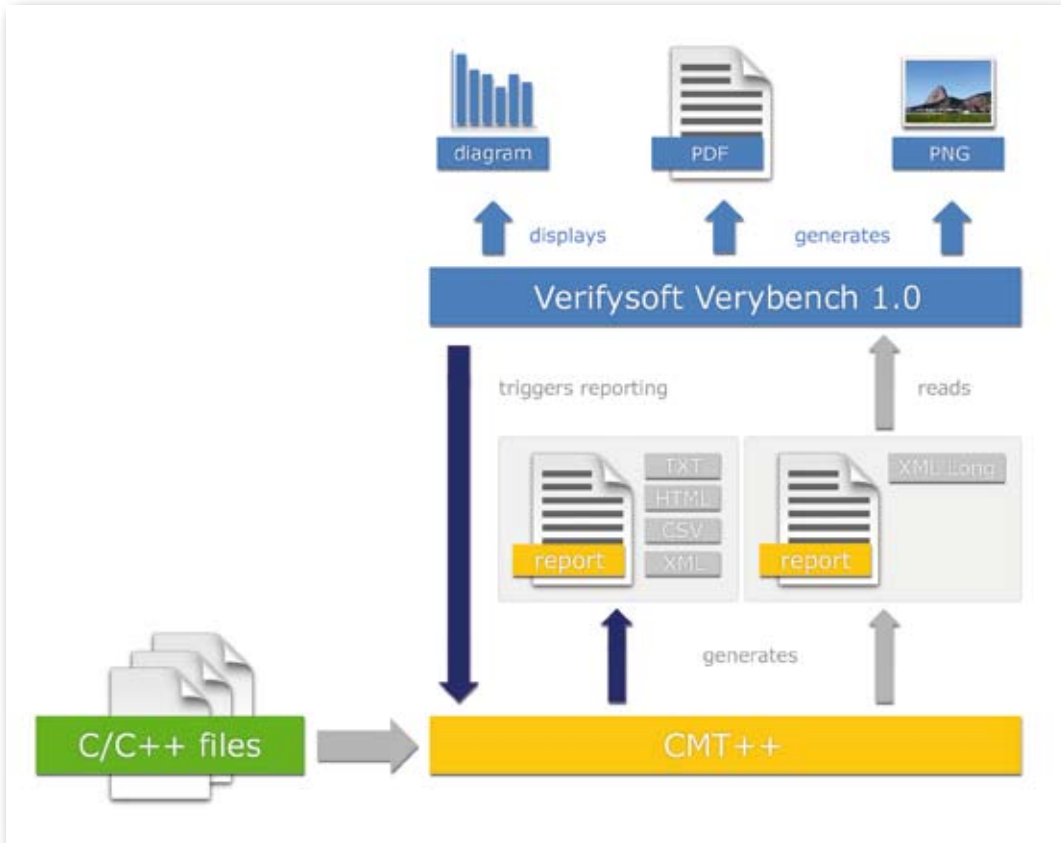


Figure 6.1: Mechanism of reporting in Verybench and Testwell CMT++/CMTJava.



Four different types of PDF reports

Manager PDF Report

- Create this type of PDF report with the [Reports](#) panel within the tool sidebar when the management view is currently active (selected).

Controller PDF Report

- Create this type of PDF report with the [Reports](#) panel within the tool sidebar when the controlling view is currently active (selected). At least one statistic must be selected.

Reviewer PDF Report

- Create this type of PDF report with the [Reports](#) panel within the tool sidebar when the review view is currently active (selected).

Developer PDF Report

- Create this type of PDF report with the [Reports](#) panel within the tool sidebar when the development view is currently active (selected).



6.2 Viewing PDF Reports

- View a PDF report by double clicking on its representation within the tree in the [Reports](#) panel. It will open in your operating system's default PDF viewer e.g. Adobe® Acrobat Reader®.

6.3 Handling Reports

Every reporting session should always perform analyses based on the latest to use source files.

- i You should not modify source files outside of Verybench without manually reloading them into a new reporting session afterwards. The application notices a change within the source file(s) and will tell you about within the output box below the tree table within the review view or the development view. Since Verybench will not refresh these file(s) automatically generating reports upon altered files will directly result into incorrect reports.**



7. Index

A

<i>About</i>	10
<i>Alarms Overview Panel</i>	13
<i>Average</i>	17

B

<i>B</i>	13
----------	----

C

<i>Change Project Settings</i>	9
<i>Change Settings</i>	10
<i>CSV Report</i>	12
<i>Comment Ratio</i>	13
<i>Controlling View</i>	15
<i>Create Project</i>	21
<i>Create Reporting Session</i>	23
<i>Create Report</i>	25

D

<i>Delete Reporting Session</i>	11
<i>Delete Report</i>	12
<i>Development View</i>	19

E

<i>Export Project to ZIP</i>	9
<i>Export Reporting Session to ZIP</i>	9
<i>Excel Report</i>	12
<i>External Requirements</i>	30

F

<i>Function</i>	17
-----------------	----

G

<i>Graphical User Interface</i>	8
---------------------------------	---

H

<i>Help</i>	10
<i>HTML Report</i>	12

I

<i>Import Project from ZIP</i>	9
--------------------------------	---

K

<i>Kiviat Diagram</i>	14
-----------------------	----

L

<i>Lines of Code</i>	20
<i>LOCcom</i>	20
<i>LOCphy</i>	20
<i>LOCpro</i>	20

M

<i>Measure Complexity</i>	4
<i>Metrics</i>	4
<i>Management View</i>	14
<i>MaxND</i>	15
<i>Maintainability Index</i>	20

N

<i>Number of Functions</i>	16
----------------------------	----

O

<i>Open Existing Project</i>	9
------------------------------	---

Index



P

<i>Prerequisites</i>	6
<i>PDF Report</i>	12

Q

<i>Quit</i>	9
-------------	---

R

<i>Reporting Sessions Panel</i>	11
<i>Reports Panel</i>	12
<i>Review View</i>	18

S

<i>Statistics</i>	16
<i>Save as PNG</i>	17
<i>Summary</i>	17
<i>Subversion Support</i>	21

T

<i>Tool Sidebar</i>	3
<i>Testwell CMT++/CMTJava</i>	4
<i>Text File Report</i>	12

U

<i>Update Reporting Session</i>	9
---------------------------------	---

V

<i>View</i>	14
<i>v(G)</i>	20
<i>V</i>	20

X

<i>XML Long</i>	12
<i>XML Report</i>	12



8. Appendix

8.1 Minimal Requirements

SUN Microsystems JAVA

- ▶ Any latest Java JDK (6 Update 13 or higher)
- OR
- ▶ Java SE Runtime Environment (JRE)

Verybench 1.0 is known to run fine on the following operating systems:

- ▶ Microsoft Windows XP Professional® with Service Pack 1 or higher
- ▶ Microsoft Windows Vista®
- ▶ Microsoft Windows 7®
- ▶ Canonical Ubuntu 9.10 (Linux)

 **See product page for more information:** <http://www.testwell.fi>

8.2 Navigation Symbols

The following symbol can be used to quickly jump to:

 Index



 Appendix

 Contact

 Go to <http://www.verifysoft.com>



8.3 Advising Symbols

-  Direct advice is given to the reader as additional information.
-  Direct advice is given to the reader as action to perform.
- ▶ This symbol implies a sub-category.
- This symbol implies a main menu entry.
- ▣ This symbol implies a sub entry of a main menu's entry.

8.4 Closing Legal Disclaimer

Verifysoft GmbH does not make any representations, warranties or guarantees, express or implied, as to completeness of this user guide. Users must be aware that updates and amendments will not be made to the user guide whatsoever. It is the user's responsibility to determine whether there have been any such updates or amendments and Verifysoft GmbH shall have no responsibility for providing notice of any such updates or amendments. Neither Verifysoft GmbH nor any of its directors, officers, employees or agents shall be liable in contract, tort or in any other manner whatsoever to any person for any loss, damage, injury, liability, cost or expense of any nature, including without limitation incidental, special, indirect or consequential damages, arising out of or in connection with the use of this user guide.



9. Appreciation

Verifysoft Technology GmbH thanks everybody involved in the development process of Verybench 1.0. Thanks goes to Eugenia Drosdezki, Konstantin Schuraev and Johannes Stoll. Special thanks goes to Prof. Dr. Daniel Fischer and Prof Dr. Klaus Dorer (University of Applied Sciences Offenburg, Germany) for their consulting and support.

Contact



10. Contact

Verifysoft Technology GmbH

Technologiepark, In der Spöck 10
D-77656 Offenburg

Tel.: (+49) 781 63 92-027

Fac.: (+49) 781 63 92-029

Email: support@verifysoft.com



Find more information on the internet:

www.verifysoft.com

Verybench is a product of Verifysoft Technology GmbH, Offenburg (Germany).

Testwell CMT++/CMTJava is either a registered trademark or trademark of Testwell Oy, Finland. Ubuntu is either a registered trademark or trademark of Canonical Ltd. Windows Vista is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.

www.verifysoft.com

© Verifysoft Technology GmbH, 2010