Unit 4. Testing Tools-2

4.1 Testing tool for Black box testing:

Black Box Testing, which is a critical testing technique, is performed to validate the functionality of the software product, based on the specifications provided by the client before the commencement of the project.

Black box Testing is a software testing type, wherein the testers have no knowledge of the internal structure, design, and code of the software. The sole focus during this type of testing is to test the functionality of the software and ensure its conformance with the specified requirements.

Automated testing tools for black box testing simplify the process and enhance its accuracy.

Generally, Recording and Playback tools are preferred with Java, Visual Basic and Perl rather than scripted testing tools when it comes to black box testing.

4.1.1 Test recording and playback using Selenium:

Switching from manual testing to automation, you would want a testing tool that's not only easy to adopt but also scales with your testing requirements.

Record and playback testing tools are most convenient as they don't require really good coding skills.

They are most preferable especially, when you plan to incorporate automated testing quickly.

Record and playback, otherwise known as codeless automation, is a way to run tests without programming knowledge.

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The way they work is that the tester clicks a record button, does some actions, and then clicks stop. When replaying the recording, the same actions should be performed.

Selenium IDE:

It is a browser extension that allows you to record, edit, and debug tests.

Selenium runs on Windows, Linux, and macOS. It is open-source software released under the Apache License 2.0.

Selenium IDE contains the whole Selenium Core to record and playback tests in the actual environment that they will run.

When ‘recording’, code is being automatically generated. This code runs when the user ‘plays back’ the recording.

Changes can be made to the code to make the test run differently.

This allows the test developer to update, maintain and make improvements to the tests.

This is done using a tool, like Selenium, that allows you to manually perform actions in the browser and save them as a test. You can then take this test and rerun it with a click, making regression and browser testing infinitely faster.

This means that manual testers or testers that are still new to Selenium can easily create automated tests.

In addition, this allows other roles such as product managers, developers, designers, and even marketers participate in testing without having to learn an entirely new tool.

Through the use of the run command, you can re-use one test case inside of another (e.g., allowing you to re-use your login logic in multiple places throughout a suite).

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It also provides Selenium client API which allows you to write your own tests scripts in various languages such as Java, C#, Ruby, JavaScript, R and Python.

4.2 Testing tool for Bug tracking and Bug reporting- BugZilla

Bug tracking is the process of logging and monitoring bugs or errors during software testing.

Large systems may have hundreds or thousands of defects. Each needs to be evaluated, monitored and prioritized for debugging. In some cases, bugs may need to be tracked over a long period of time.

A bug tracking tool can help record, report, assign and track the bugs in a software development project. There are many defect tracking tools available.

Better is the bug tracking tool, better the quality of the product.

Bugzilla:

It is an open source tool for bug tracking and written in Perl and uses MYSQL database.

Features:

- E-mail notification for change in code
- Reports and Charts
- List of bugs can be generated in different formats
- Schedule daily, monthly and weekly reports
- This bug tracking tool detect duplicate bug automatically
- Setting bug priorities by involving customers
- Predict the time a bug may get fixed

BugZilla is currently in use by Mozilla, Open Office, Apache, Eclipse, Red Hat, and many more.

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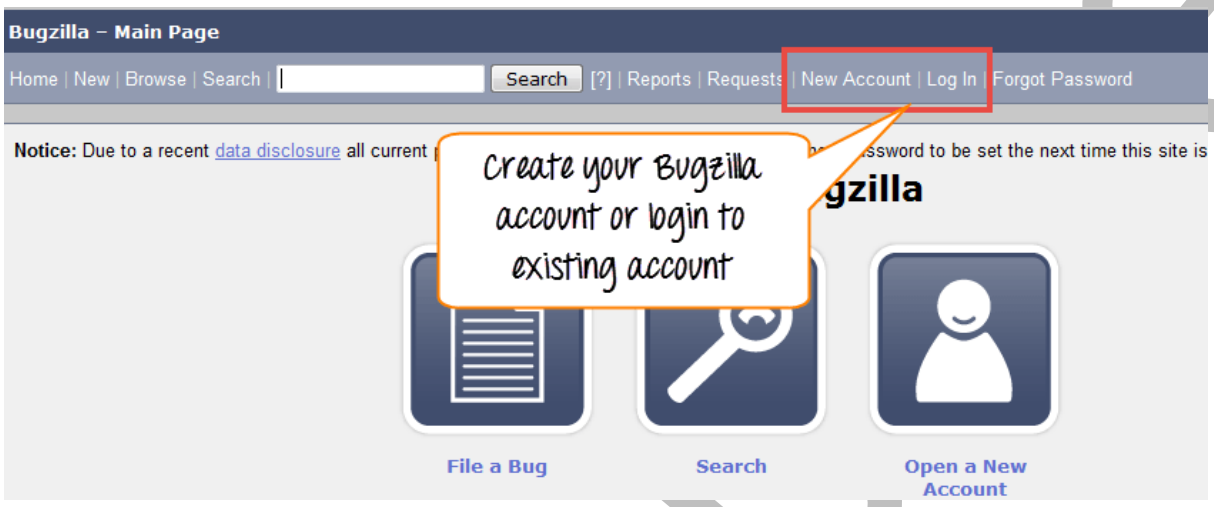
How to log-in to Bugzilla

Step 1) To create an account in Bugzilla tool or to login into the existing account go to New Account or Log in option in the main menu.

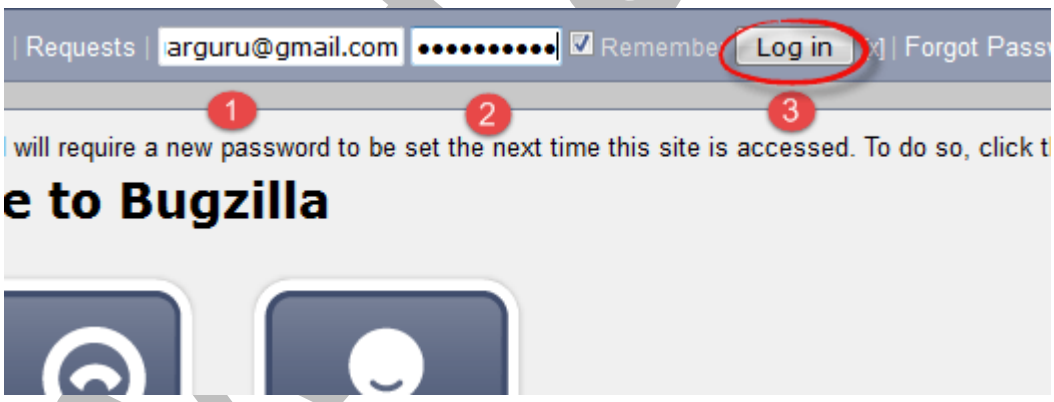


Step 2) Now, enter your personal details to log into Bugzilla

User ID

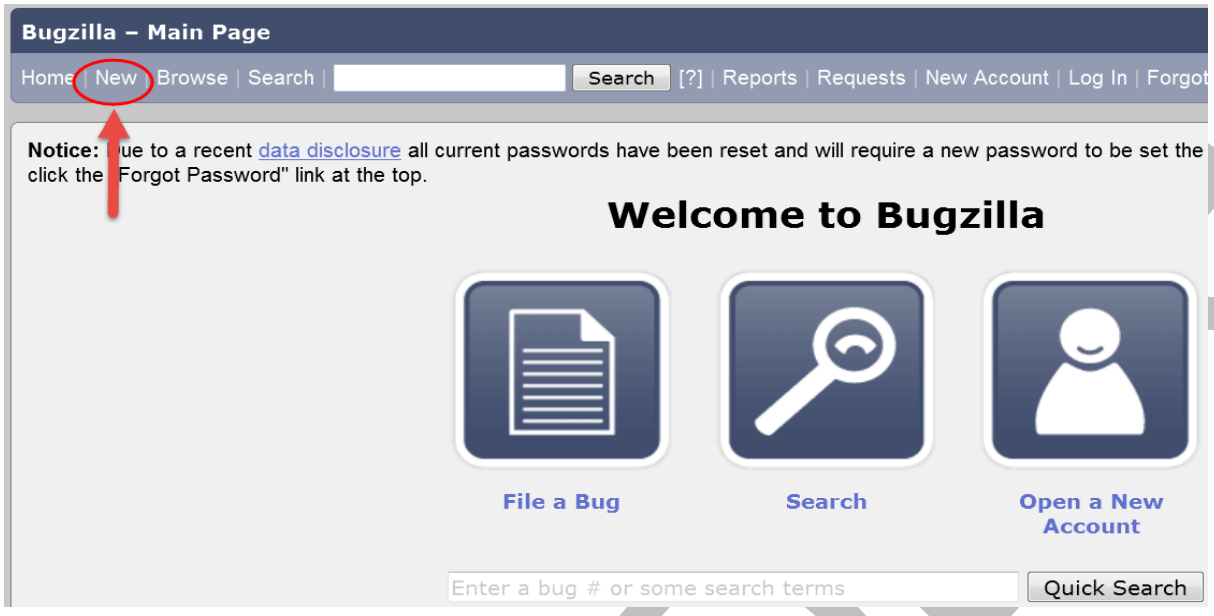
Password

And then click on "Log in"



Creating a Bug-report in Bugzilla

Step 1) To create a new bug in Bugzilla, visit the home-page of Bugzilla and click on NEW tab from the main menu.



Step 2) In the next window

1. Enter Product
2. Enter Component
3. Give Component description
4. Select version,
5. Select severity
6. Select Hardware
7. Select OS
8. Enter Summary
9. Enter Description
10. Attach Attachment
11. Submit

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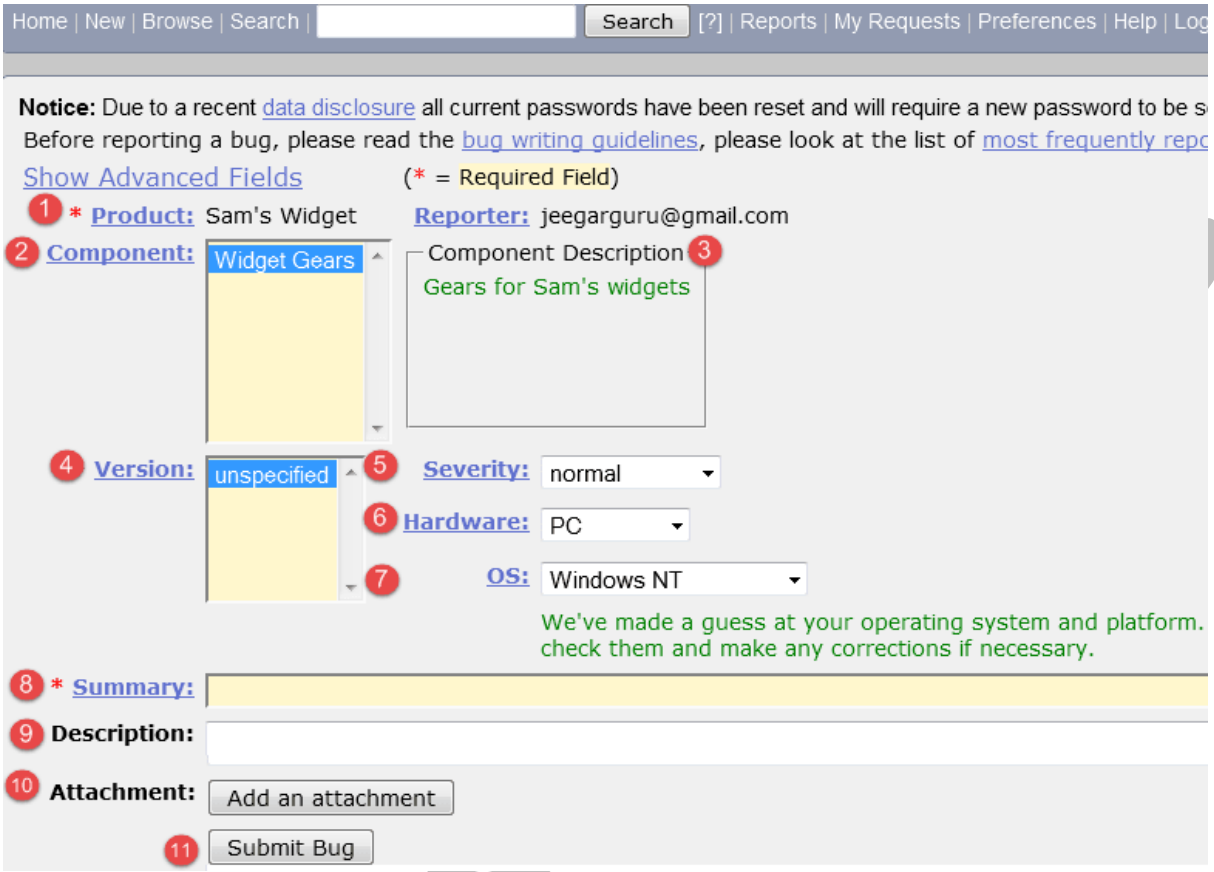

Step 3) Bug is created ID# 26320 is assigned to our Bug. You can also add additional information to the assigned bug like URL, keywords, whiteboard, tags, etc. This extra-information is helpful to give more detail about the Bug you have created.

1. Large text box
2. URL
3. Whiteboard
4. Keywords
5. Tags
6. Depends on
7. Blocks
8. Attachments

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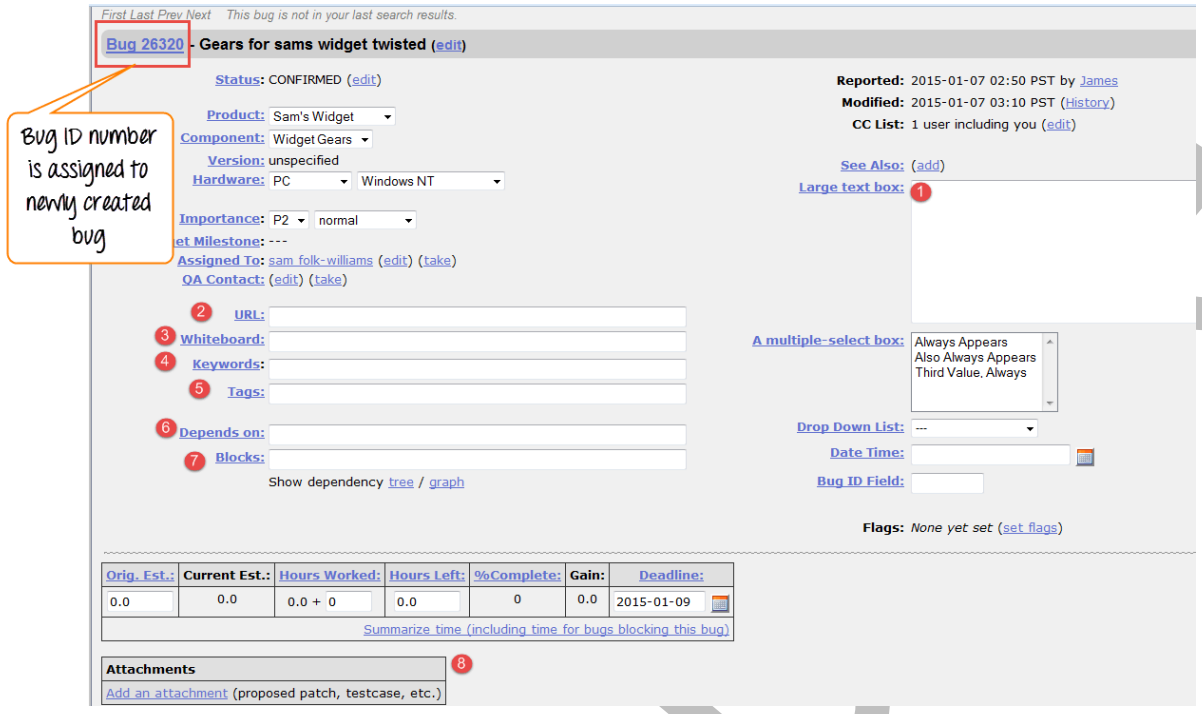
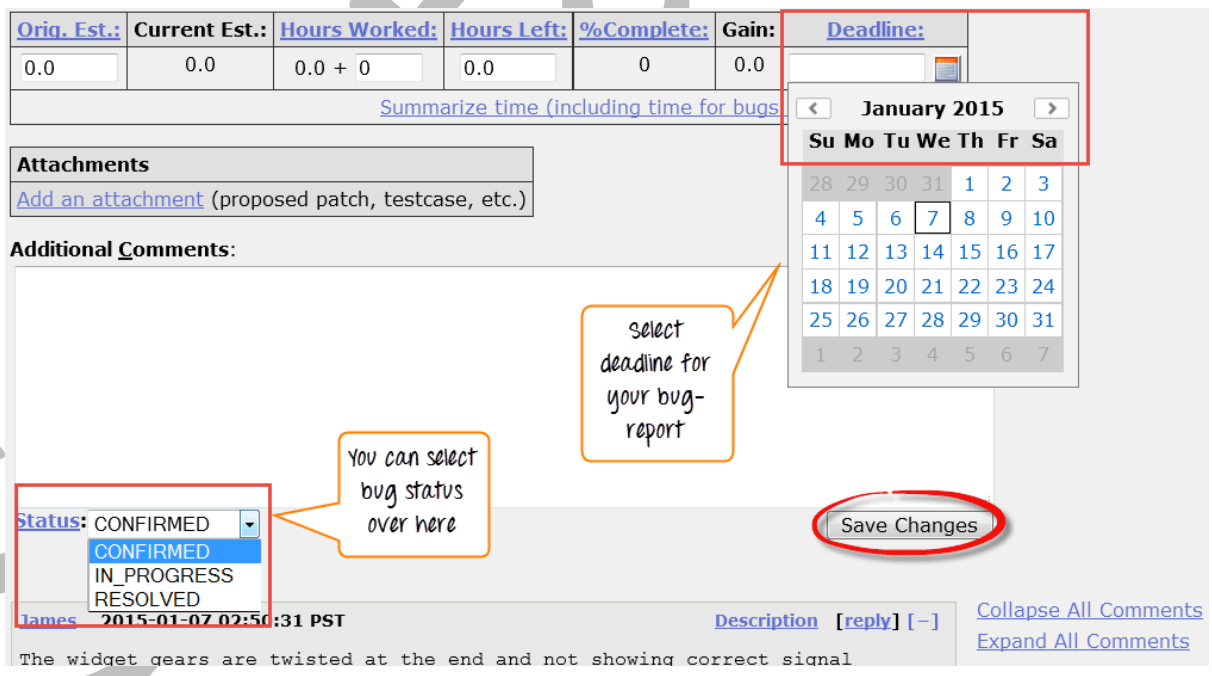


Step 4) In the same window if you scroll down further. You can select deadline date and also status of the bug. Deadline in Bugzilla usually gives the time-limit to resolve the bug in given time frame.



Create Graphical Reports:

Graphical reports are one way to view the current state of the bug database. You can run reports either through an HTML table or graphical line/pie/bar-chart-based one.

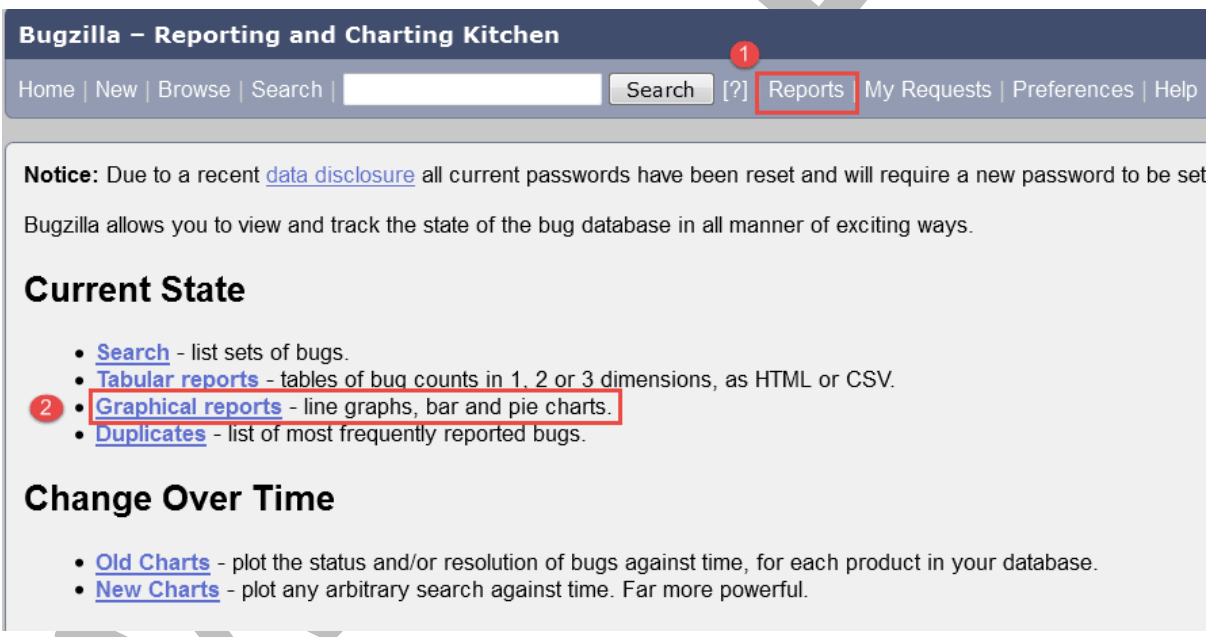
If you want to know which component has the largest number of bad bugs reported against it.

In order to represent that in the graph, you can select severity on X-axis and component on Y-axis, and then click on generate a report. It will generate a report with crucial information.

Step 1) To view your report in a graphical presentation,

Click on Report from Main Menu

Click on the Graphical reports from the given option



Step 2) Let's create a graph of % Complete Vs Deadline

In here on the vertical axis we chose % Complete and on our horizontal axis we chose Deadline. This will give the graph of amount of work done in percentage against the set-deadline.

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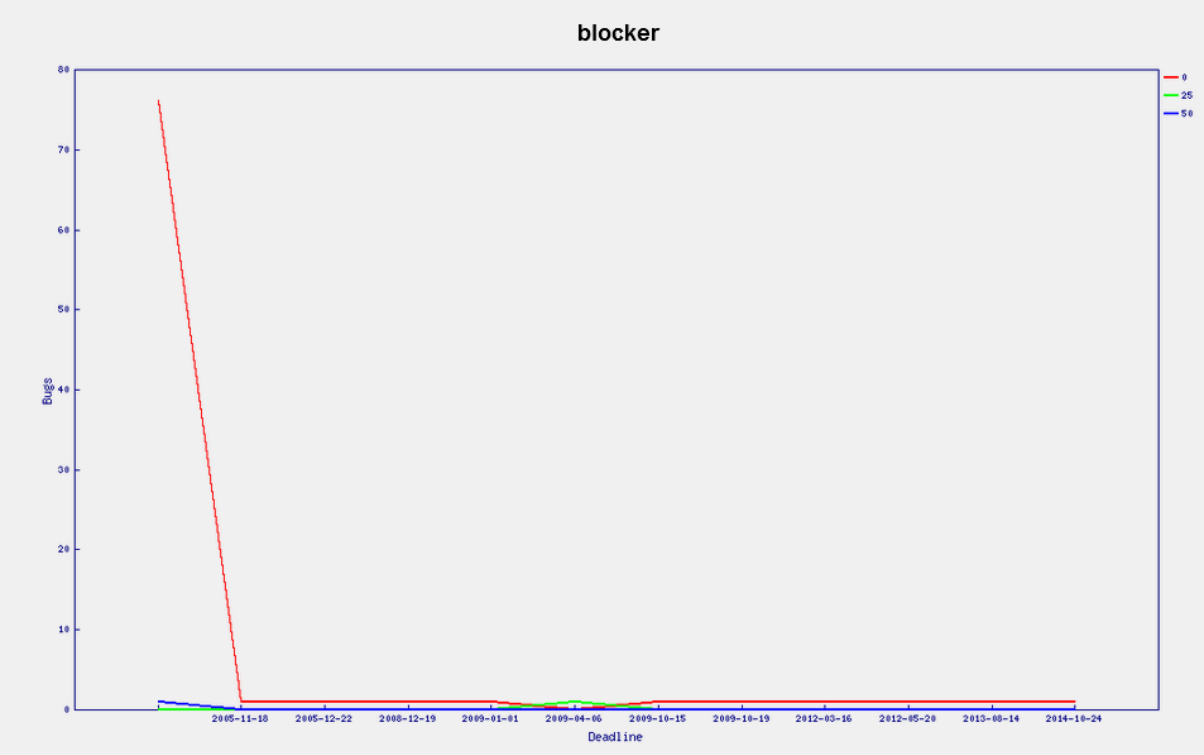


4.3 Testing tool for Test Management: Case study of TestLink

Whether it is about capturing requirements, designing test cases, test execution reports, informing other team-members about Testing progress etc. a test management tool is mandatory.

Even small error in recording these details may lead to failure of the project. So, to manage all these details some test management tools can come very handy and useful.

TestLink:

Test-link is most widely used web based open source test management tool. It synchronizes both requirements specification and test specification together.

With Test-Link you can create an account for multiple users and assign different user roles. Admin user can manage test cases assignment task.

The testers can generate Test Plan and Test Report in a fraction of the time with this tool.

User can create test project and document test cases using this tool.

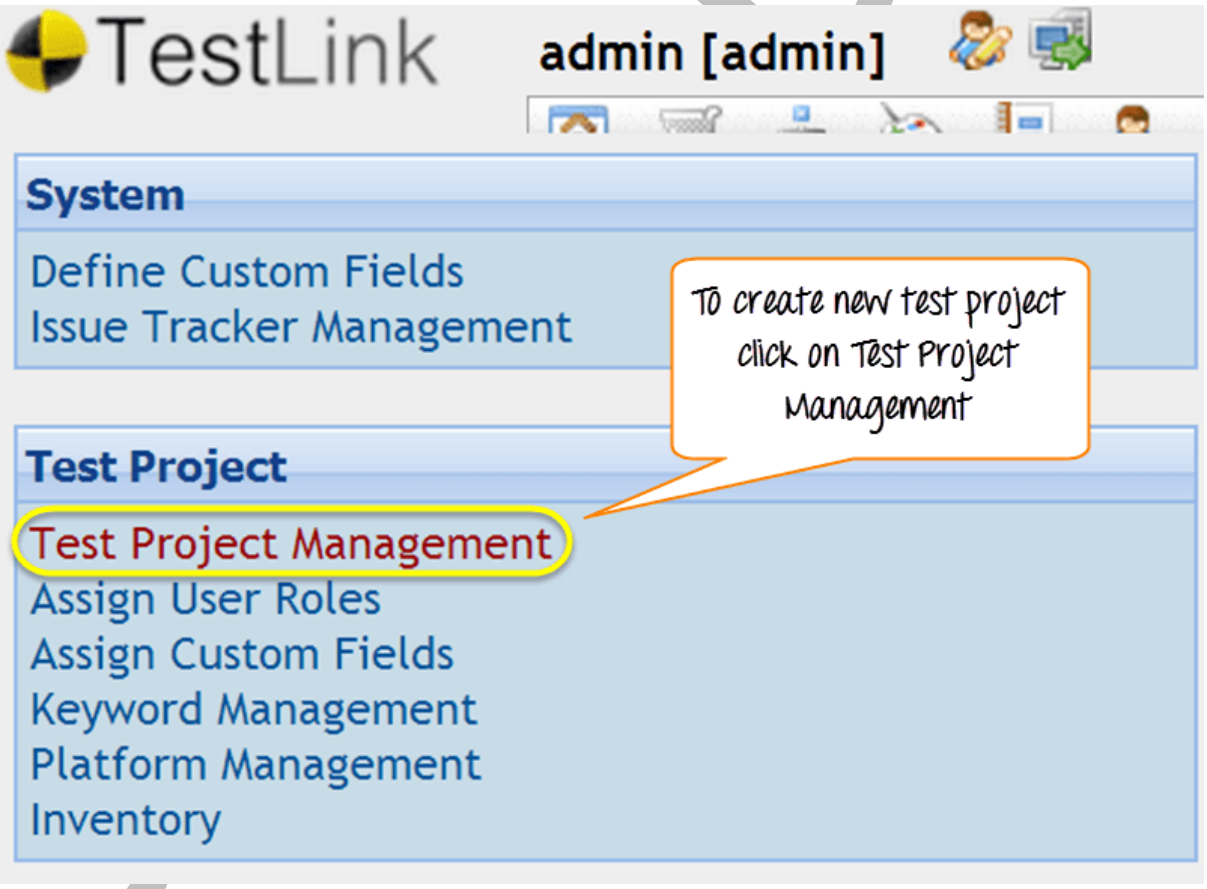
It supports test reports in various formats like Excel, MS word, and HTML formats.

Apart from these, it also supports integration with many popular Defect tracking systems like JIRA, MANTIS, BUGZILLA, TRAC, etc.

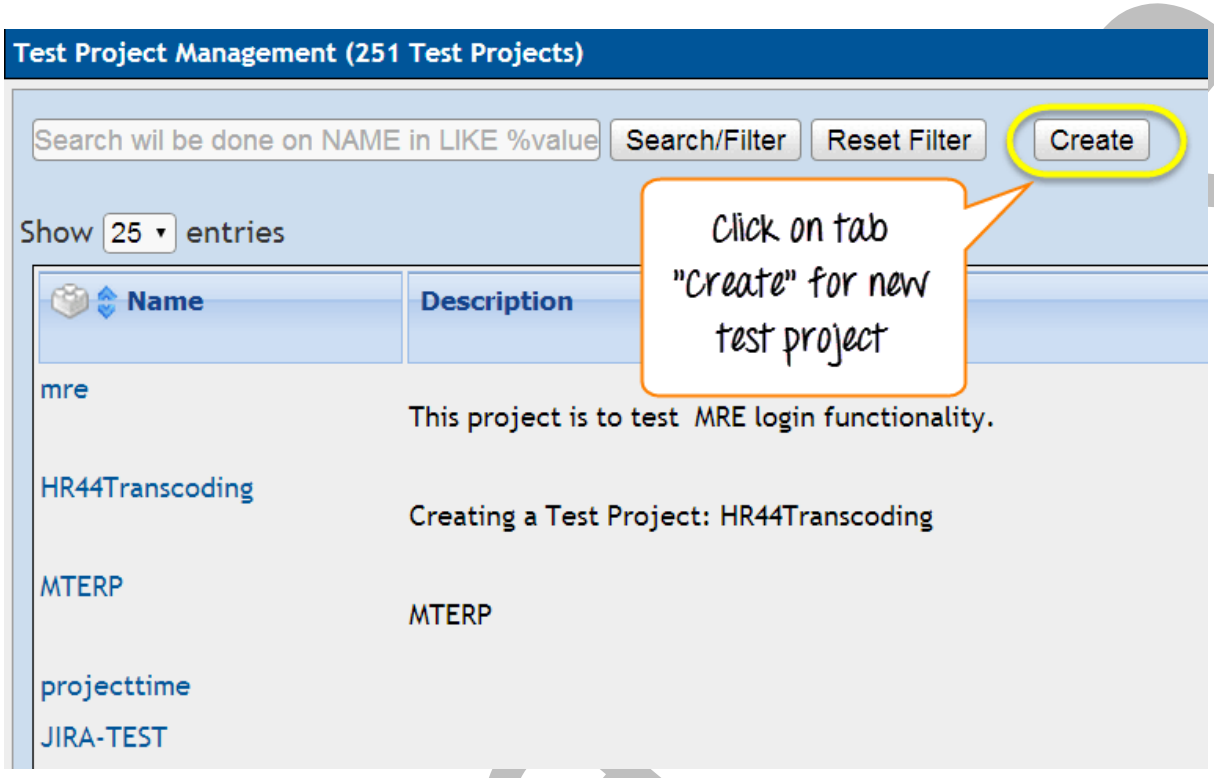
Since it is a web based tool, multiple users can access its functionality at the same time with their credentials and assigned roles.

Creating a Test Project:

Step 1: In the main window click on Test Project Management, it will open another window



Step 2: Click on the tab "create" to create a new project.



Step 3: Enter all the required fields in the window like a category for a test project, name of the project, prefix, description, etc. After filling all necessary details, click on tab "Create" at the end of the window.

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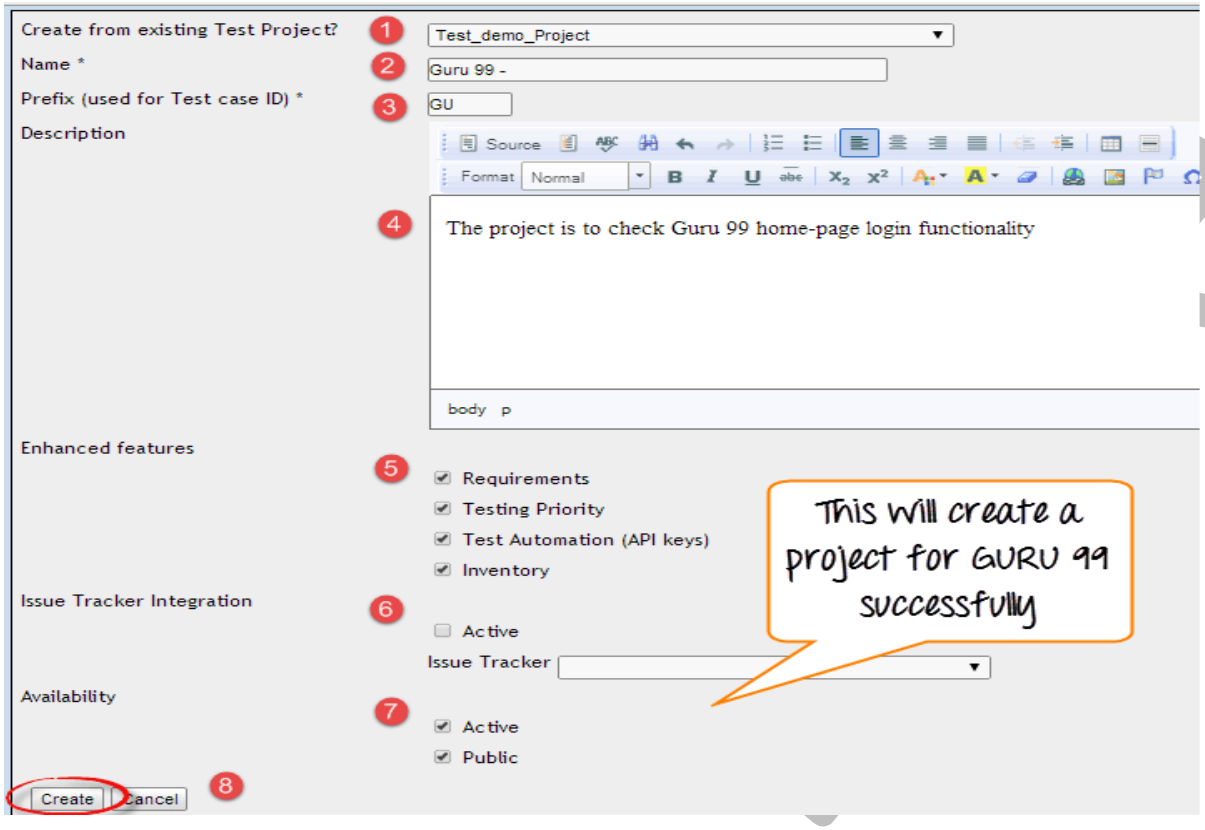


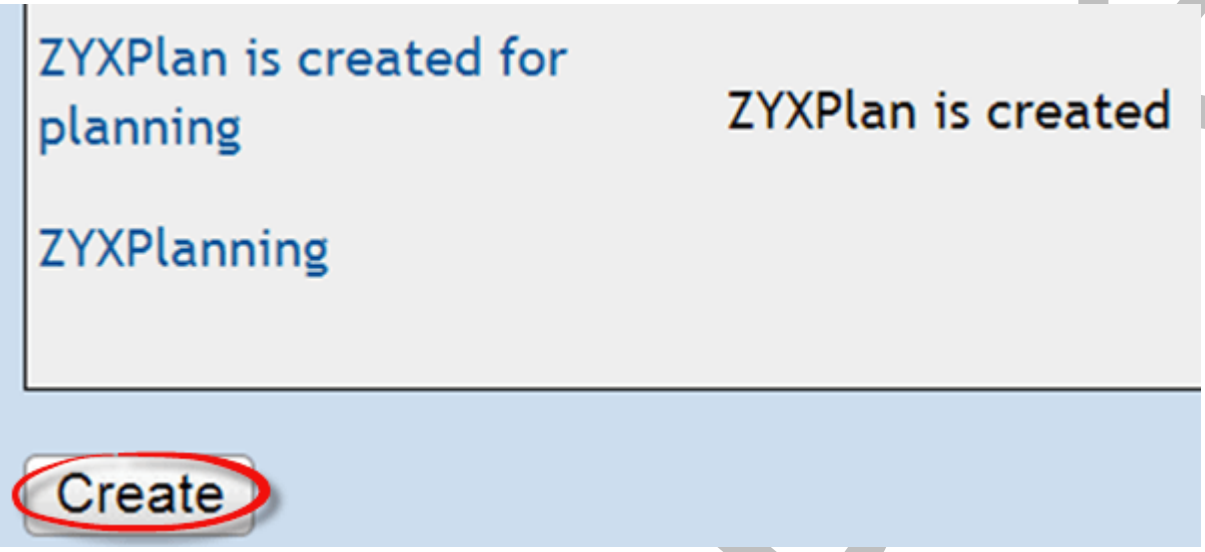
This will create your project successfully.

Creating a Test Plan:

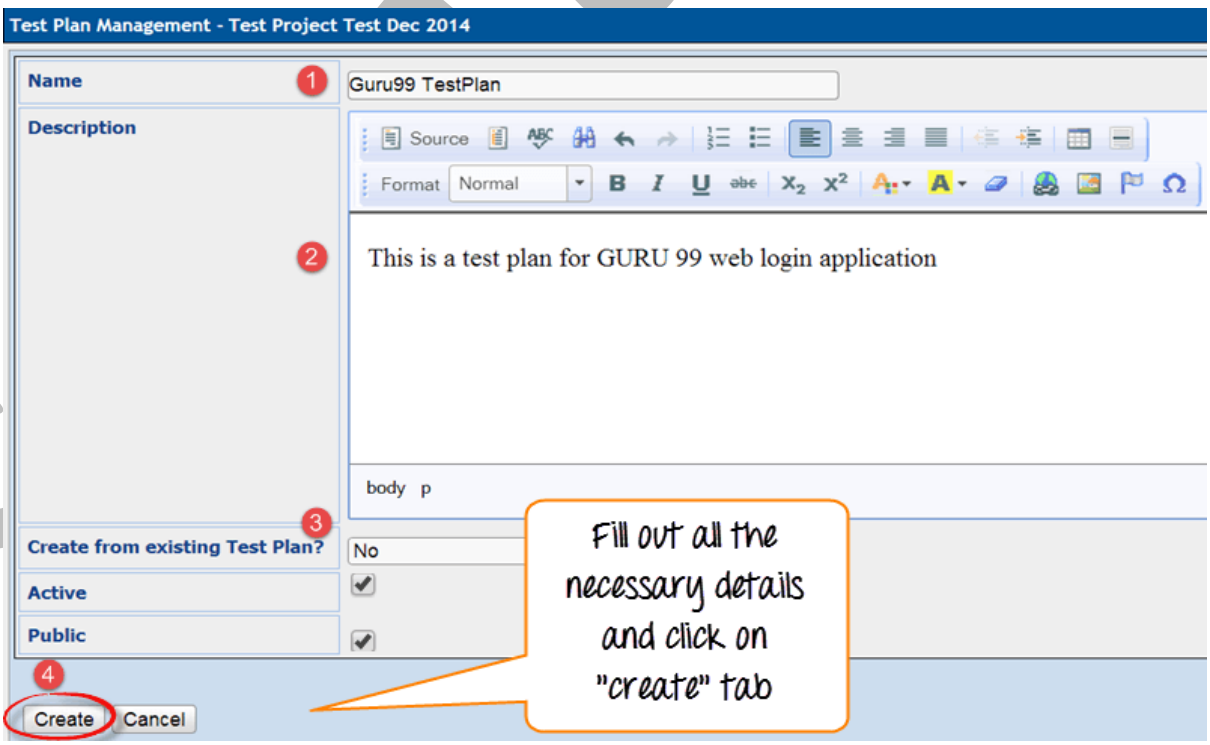
Test plan holds the complete information like the scope of Software testing, milestone, test suites and test cases. Once you have created a Test Project, next step is to create Test plan.

Step 1: From the home-page, click on Test Plan Management from home-page

Step 2: It will open another page, at the bottom of the page click on a tab "Create".

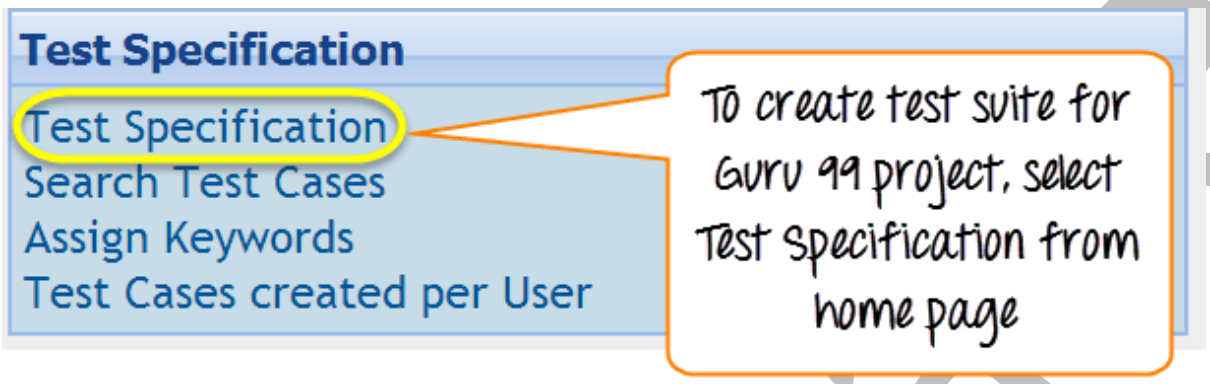


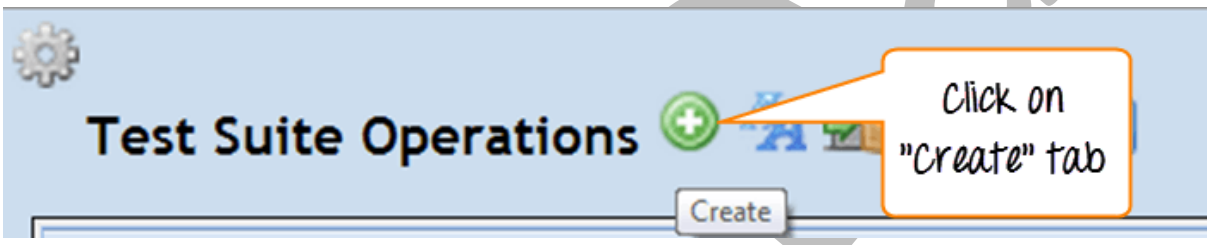
Step 3: Fill out all the necessary information like name, description, create from existing test plan, etc. in the open window, and click on "create tab".



Creating Testsuite:

Step 1: Click on test specification option from the home page.





Step 2: Fill-up all the details for test-suite and click on save it tab.

- Enter the test suite name
- Enter the details about your test suite
- Click on save button to save the details of test-suite