PRACTICAL: - 8

AIM: List at least 5 online or offline Software Maintenance tools & prepare the detailcase study on "JOBHUNT" Maintenance document as a JOBHUNT.

Software maintenance is a part of the Software Development Life Cycle. Its primary goal is to modify andupdate software application after delivery to correct errors and to improve performance. Software is a modelof the real world. When the real world changes, the software require alteration wherever possible.

Software Maintenance is an inclusive activity that includes error corrections, enhancement of capabilities, deletion of obsolete capabilities, and optimization.

What is the need for Software Maintenance?

Software Maintenance is needed for:-

> ➢ Correct errors
> ➢ Change in user requirement with time
> ➢ Changing hardware/software requirements
> ➢ To improve system efficiency
> ➢ To optimize the code to run faster
> ➢ To modify the components
> ➢ To reduce any unwanted side effects.

Thus, the maintenance is required to ensure that the system continues to satisfy user requirements.

Why we need Software Maintenance?

You need to carry out maintenance to ensure the workplace structure, equipment, machinery, fixtures and fittings and facilities are in good working order. Inadequate maintenance can lead to dangerous situations, accidents and health problems.

Table 8.1 Tools of software maintenance

Sr. No	Tools
1.	HP Quality Center
2.	IBM Rational Quality Manager
3.	Micro Focus SkillPerformer
4.	Panorama
5.	Bugzilla

1. HP Quality Center:

This Web-based application helps software engineers put their programs through the ringer by testing them for various bugs and errors. HP Quality Center has the ability to plan and schedule tests, analyze results and manage issues and defects. There are three versions of the program, the most extensive of which has the ability to deal with hundreds of applications at the same time with management teams distributed throughout the world. The starter edition is available with a free download from the HP website.
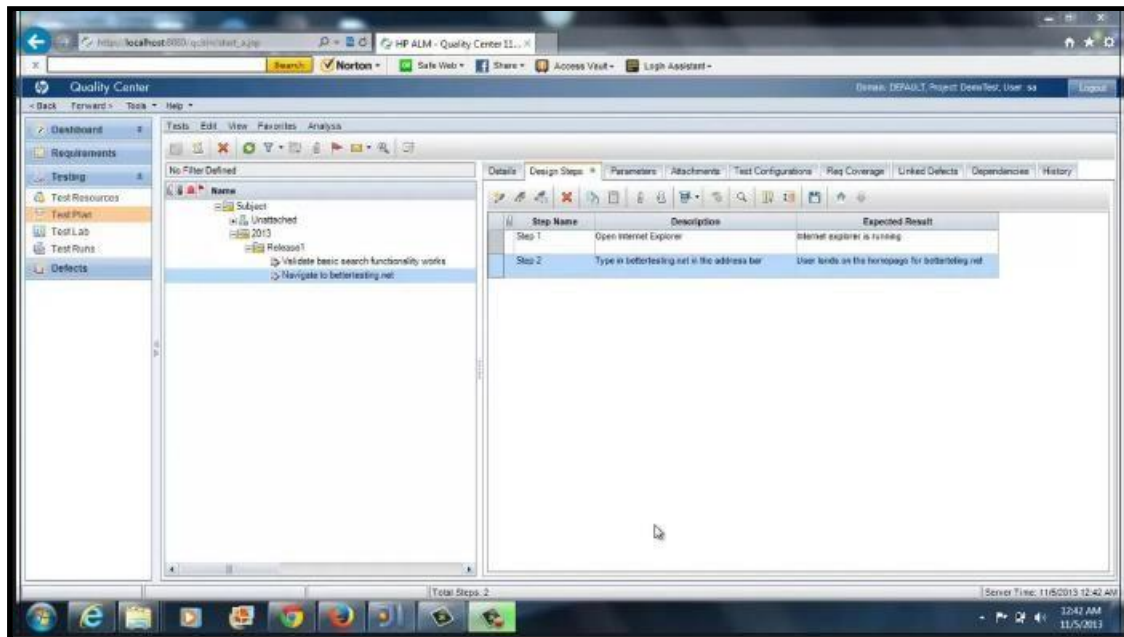
Fig 8.1 HP Quality Centre[1]

Application:

- Project Planning and Tracking
- Risk Based Quality Management
- Test Authoring and Execution
- Cross Project Customization
- Test Configurations

2. IBM Rational Quality Manager

The IBM Rational Quality Manager is similar to the HP Quality Center in that it conducts tests using an Internet-based application. The program lets users customize the way the information is presented through custom-designed dashboards, and it lets them schedule their software tests with the various members of their team. These tests can be automated or done manually if there is a particular area of the software the engineers wish to get a closer look at. The program description states that it will accelerate project schedules and ensure that applications meet the objectives of the company. The express edition is available for download at the IBM site.
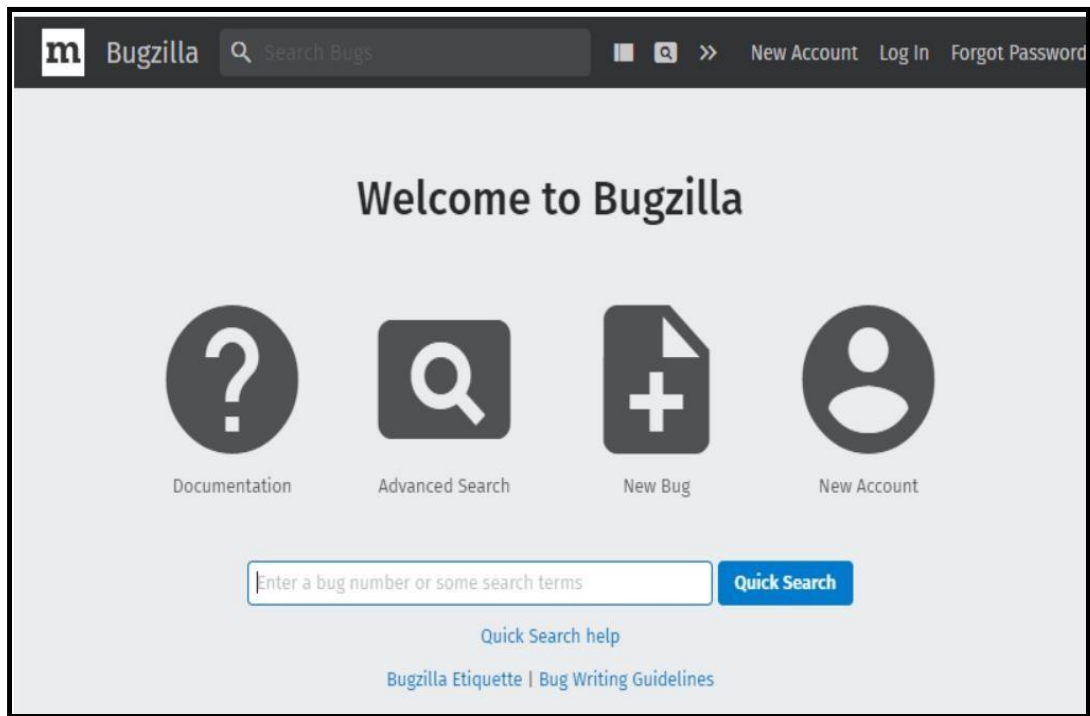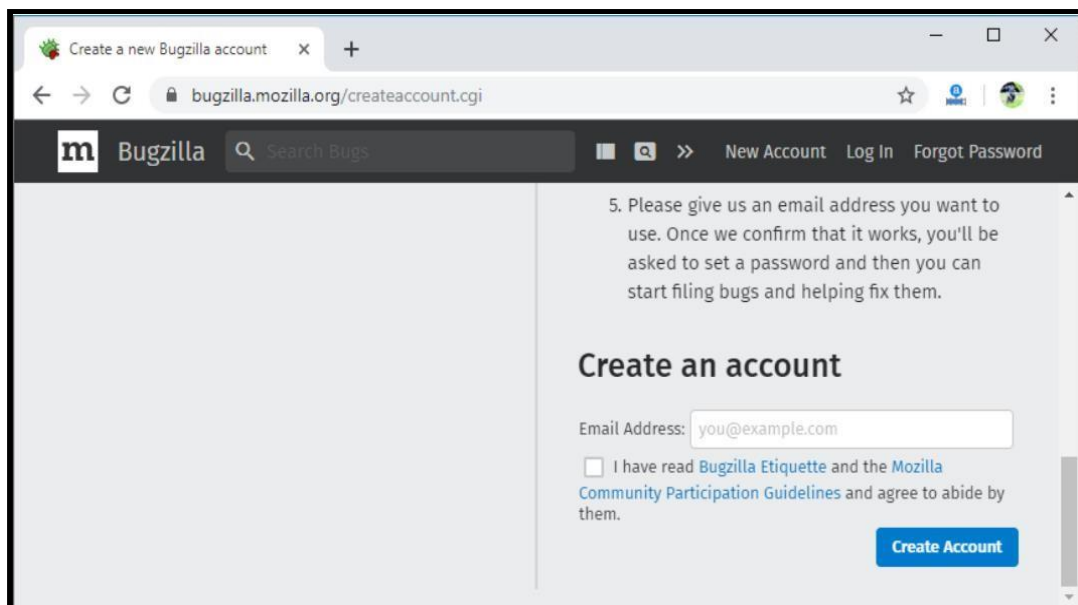
Fig 8.2 IBM Rational Quality Manager[2]

Application:

- iteration planning
- build automation
- records test execution and results,
- maps testing onto requirements
- tracks defects.

3. Micro Focus SkillPerformer

Micro Focus SilkPerformer is a program that can be used by large enterprise-class companies to develop software applications through extensive testing. The Micro Focus site states that the program can accelerate the resolution of problems by finding them early in development cycles. SilkPerformer has full support for all Web 2.0 applications and efficient test cycles and test creation. The program performs load tests that can be viewed across many environments in an effort to quickly determine if there are conditions that cause it to crash. A trial version of the program is available from the Micro Focus site.
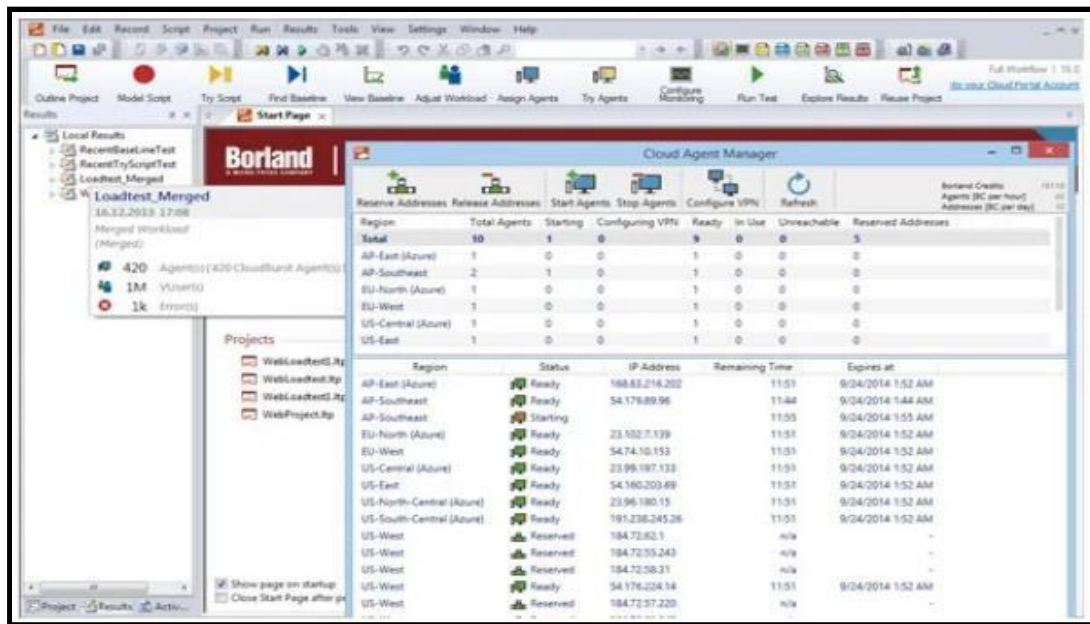
Fig 8.3 Micro Focus Skill Performer [3]

Application:

- assess the performance of Internet servers
- database servers
- distributed applications
- assess the middlewares

4. Panorama:

Panorama, a java-based Eclipse plug-in, was developed to facilitate maintenance activities by providing mechanisms to document and to view expert knowledge and relevant code in the form of a concern. Some features of Panorama are: a code tracing feature that allows the expert to quickly find (so he can document it) lines of code executed in carrying out a function, a concern management feature that allows the expert to create and organize concern information in a hierarchical manner, a concern visualization and context management feature that helps the maintainer to handle information overload by allowing him to switch between contexts, an enhanced user-interface that helps the maintainer to easily navigate between relevant contexts and codes. Panorama also provides a Javadoc -like documentation of cross-cutting concerns that supplement existing Javadoc documentation to provide comprehensive information about the software.
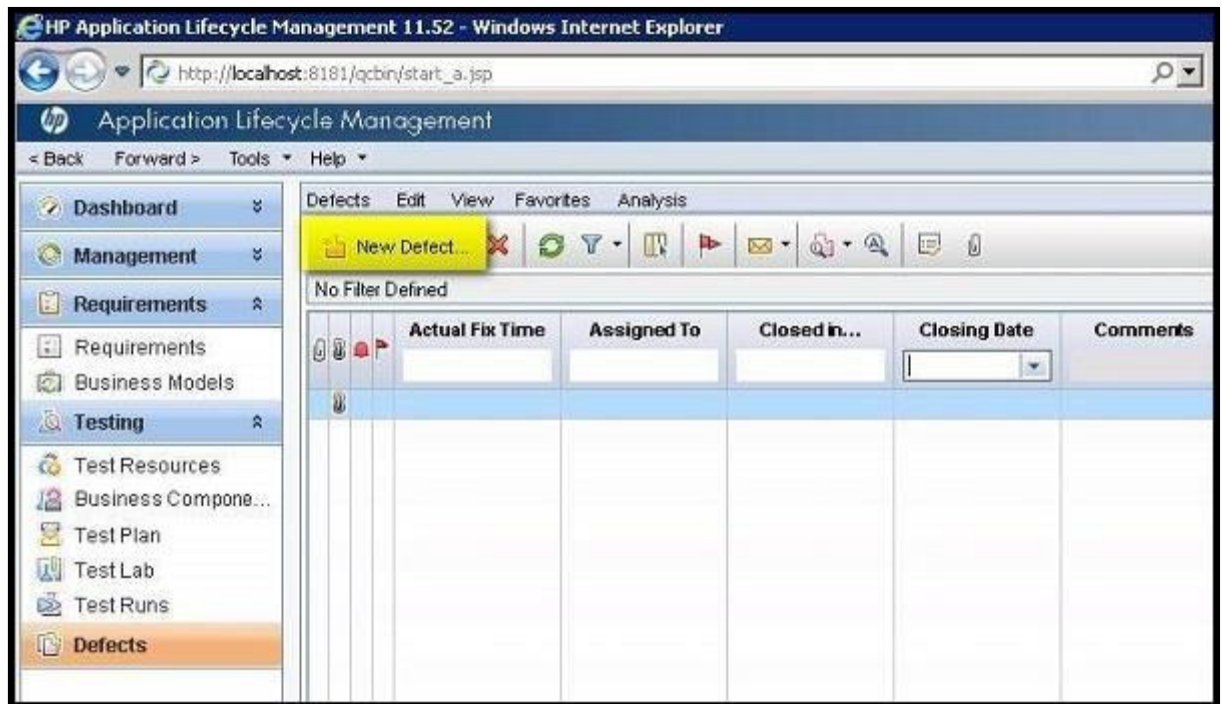
Fig 8.3 Panorama[3]

Application:

- iteration planning
- build automation
- records test execution and results,
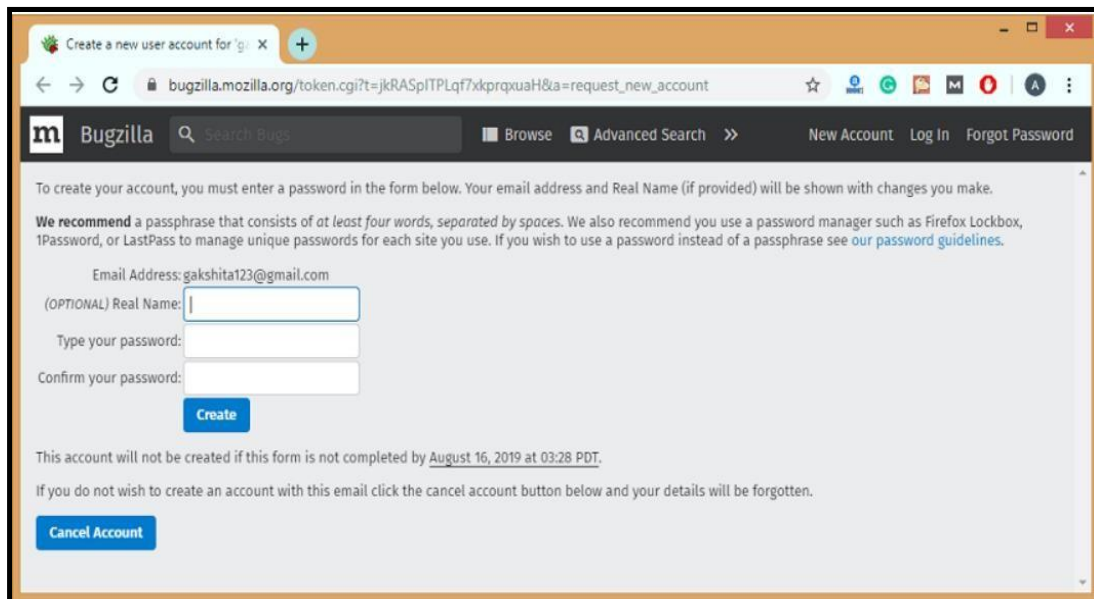- maps testing onto requirements tracks defects.

5. **Bugzilla:**

This program is used by thousands of software companies as a "defect tracking system." The program keeps track of bugs that crop up in a software product and allows individuals or groups of developers to communicate and solve the problems. Bugzilla allows software engineers to manage quality assurance, track bugs and submit bug-fixing patches to review. The program is technically free, though they charge for extensive support issues. Bugzilla is a secure program that has the ability to scan and correct database inconsistencies.

Application:

- attaches Bug supportive files and manage it
- security audit and runs under the Perl's taint mode
- wide range of customized, user preferences features
- provides inter bug dependency track and graphic representation.
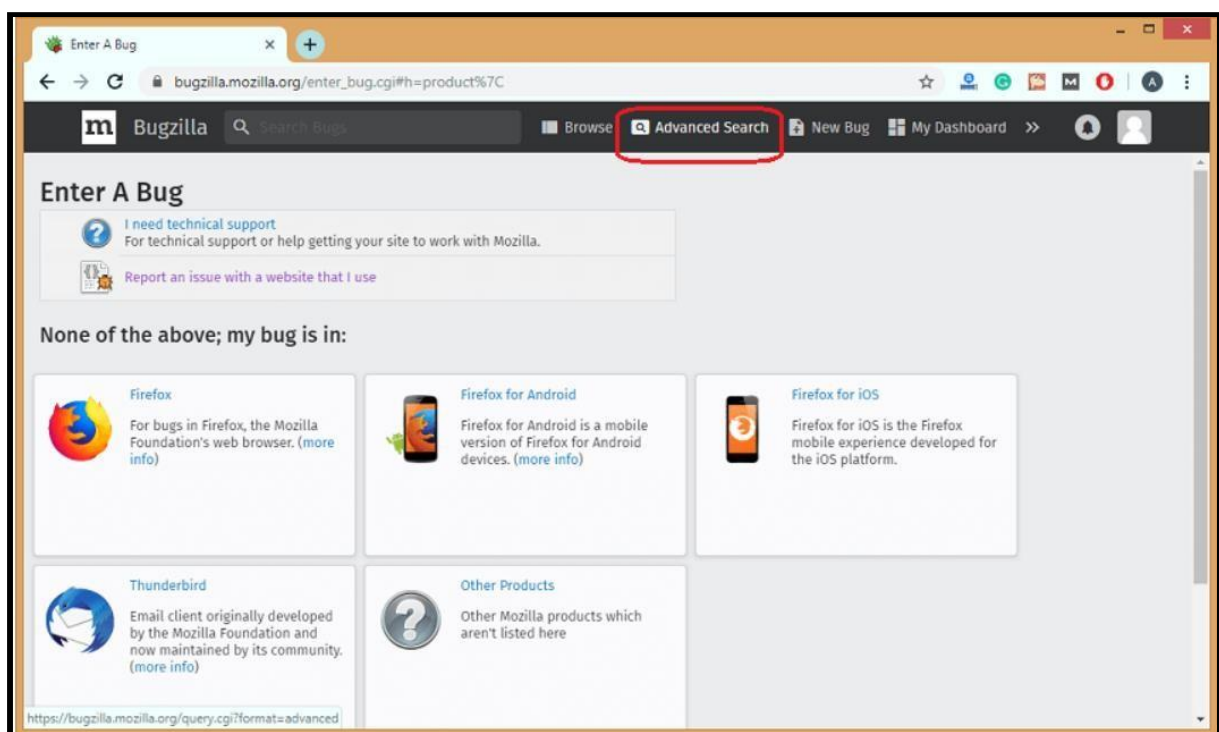
Fig 8.5 Bugzilla [5]

Fig 8.6 Bugzilla [6]

Fig 8.7 Bugzilla [7]

Fig 8.8 Bugzilla [8]

Fig 8.9 Bugzilla [9]

References:

[1] HP Quality Centre: https://www.perforce.com/resources/qac/coding-standards

[2] IBM Rational Quality Manager : https://www.geeksforgeeks.org/software-engineering/

[3]Panorama:

https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.tutorialspoint.com%2Fqc%2Fqc_

defects.htm&psig=AOvVaw1Y9UXn-

sM4pgqi60JJPUs5&ust=1664344558073000&source=images&cd=vfe&ved=0CAwQjRxqFwoTC

Pjz2OaktPoCFQAAAAAdAAAAABAJ

[4] Bugzilla: bugzilla.mozilla.org

[5] Bugzilla: bugzilla.mozilla.org

[6] Bugzilla: bugzilla.mozilla.org

[7] Bugzilla: bugzilla.mozilla.org

[8] Bugzilla: bugzilla.mozilla.org

[9] Bugzilla: bugzilla.mozilla.org

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