

An Analysis on Quality Assurance using Bug Tracking Tools

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Abstract— Quality assurance (QA) is a way of precluding blunders or blemishes in manmade products and escaping problems when delivering results or facilities to customers [1]. It depends upon the customer belief and satisfaction and it's easy to sustain & upgrade over time. Bug tracking is a procedure used by quality assurance workers and systems analyst to preserve path of software difficulties and purposes. A bug tracking system is usually in residence to collection data about reported bugs [4]. One of the major requirements for a bug tracking tool would be attributing the comments (or updates) on the bug and preserving those comments and updates for everyone using the tool to see [2]. There are free and open source bug tracking tools that work as well as most profitable bug tracking tools and can be used with minimum effort.

Key words: Bug Tracking Tools, Bugzilla, Bug Zero, JIRA, Mantis Bug Tracker

I. INTRODUCTION

Bug tracking tools are observed as a kind of problem tracing system [6]. It is sympathetic of a computer database, used by the group of submission maintenance professionals, to preserve Path of different problems that software developers aspect. It's discloses the most important bug tracing and project management tools and speak about their helpful or beneficial aspects. Bug Tracking Tools are Redmine, JIRA, Mantis Bug Tracker, Bugzilla, Base Camp, On Time, Light House [5]. These tools are used to unconcerned bugs or defects and the bugs are reported and documented[7]. There are several types of bug tracking tools are available, but mostly three tools are used. That tools are namely, JIRA, Trac, Bugzilla. There are free and open source and web based bug tracking tools that work as well as most commercial bug tracking tools and can be used with minimum effort[5]. These tools are protected, defect tracking and project management solution. Developers can obligate the source encryption. The look and feel is good and it is useful and easy to use.

II. BUG TRACKING TOOLS USED IN THE IT SECTORS

In IT industries, Analyses the records qualitatively and quantitatively through a questionnaire survey, with an inflection on existing observes to require an outline on the partialities of bug tracking systems [1]. It particularly emphases on the indifferences of the bug tracking systems categorized by respondents. From the records analysis, we had mostly used & liked bug tracking tools namely Mantis Bug Tracker, Trac and JIRA.

A. Mantis BT

Mantis Bug Tracker is not built up basis, allowed bug tracking system. It is collective open-source Software a group ware intended to sustenance persons elaborate in a common mission[2]. Apart from being an issue tracking system, it can also manage documents shared among users. Manipulators

can use its integrated arranging system in order to consolidate work apportionment and obligation for their personnel[3]. Being manageable over the system provides Mantis BT flexibility over its convention in office or on site. Restrictions are common for Mantis BT. Several reasons have been mentioned behind this problem[5]. Following are some main reasons found during enquiry: communications sent are treated as junk mail or junk by the recipient's communication provider, sometimes communications sent are rejected by the recipient's communication provider and upon ineffective transmission of communications, Mantis Bug Tracker frequently saves unsent communications in a heap for future transmission, thus origins postponement.

B. TRAC

Trac is an allowed, web-based, project management and bug tracing system. It is stated that Trac has more than 450 main installations internationally. Trac is an advanced wiki which brings broadcasting features for software developments. It allows informal bug tracking with supplementary functionalities [2]. The tool has a timeline showing the overall project actions (current and past) in order, summary of each project and advancement information [5]. Limitations are much & more strong suit such as, it is free, extensible, and accessible on the cloud through some providers and version resistor integration among many other, it has some limitations. Its two main feebleness are, it requires a Wiki learning for unfamiliar team members and it is much unsophisticated for very large projects.

C. JIRA

JIRA is very generally used for bug tracing and project management. In this way, its cost depends on its capacity of manipulators. Approximation have it that it may charge around \$50 per user[4]. Moreover, Atlassian provides JIRA for allowed to organizations which happen convinced principles. JIRA has a web interface which makes it calm to deal with and report bugs[8].

It is also probable to collect keep informed via email, chat, or RSS. Limitations are, Being a profitable tool Some of the major boundaries of JIRA include: a context-based values in tradition fields & issue deletion is not supported. There is no accomplishment allowing the deletion of a problem[10]. Any problem is transferred if it is removed on the server and it remains on the JIRA Client. User gradients are populated based on issues copied which restrictions the users counter and the JIRA Client search functionality is very short as it support only exact matches.

III. EXISTING BUG TRACKING TOOLS & THEIR DRAWBACKS

The clarification of existing bug following tools and that we disapprove the current results from the persistence of their usability [5]. All bug tracing tools are allowed and open source. The tool has a timeline showing the overall project

actions (current and past) in order, summary of each project and advancement information [7].

A. Bugzilla

Bugzilla has been very important & web based built-up basis bug tracking tools extensively used by several organizations to retain path of the problem occur in the product or software applications[8]. It has all the features of essence, accessibility and guarantee. Bugzilla helps us to grip the software development process smoothly. Bugzilla helps us to grip the software development process smoothly in bug[9].

B. Bug Tracker

Bug-Track is web-based defect software platform authorities you to document, accomplish & allocate all of your bugs & responsibilities & authorizes you to formulate your bugs into dissimilar comes. It will run on nearly any web-server like Microsoft[8]. Since it's Associate in Nursing business application it's expected that it's higher than alternative free merchandise. It will run on nearly any web-server like Microsoft[9].

C. Bugzero

Bugzero could be a web-based bug, issue and event following software package. Its only code base ropes each Windows and UNIX OS and cares evidence systems collected with Right of entry, MySQL, Oracle, and etc[8]. Bugzero is routine for software package bug following, hardware defect following, and simplify counter client sustenance issue and incident following. Bugzero require in-built boundary however he absences type possibilities[9].

D. Flyspray

Flyspray could be a web-based bug system written in PHP. Flyspray is allowed software platform, quitted inferior to the final Communal License[2]. This mainly indicates that you'll get Flyspray and use it unregulated from responsibility. The ASCII text file is out there, and each person part unit welcome to conversion it to costume their requirements. Its websites describe it as "unsophisticated", and therefore the list of options includes: multiple statistics support, multiple comes, 'watching' odd jobs, with announcement of deviations (via email) widespread task history, CSS teaming, file attachments, advanced search options, RSS/Atom feeds, wiki and plaintext input, voting, enslavement diagrams[10].

E. Redmine

Redmine could be a adaptable internet-based project management web application. Written discrimination Ruby on Rails framework, it's cross-platform and cross-database. Redmine is not built up amount and satisfied below the terms of the antelope Broad Public License. Redmine is multipurpose issue following system. you'll framework your own eminences and issue varieties[7]. It supports numerous comes and subprojects. every single user will have an exclusive role on every project. Interface is incredibly straightforward, intuitive and simple to traverse. Shortly, this is often outstanding product and our recommendation[8].

IV. REPORT GENERATION FACILITIES IN EXISTING AND PROPOSED SYSTEM

A report generation facility is maintained in BTS that permits the managers to examine which those worker abilities are

used or not. Using the existing system and proposed system for loading the information[5]. When a manager needs statistics of the worker he hunts for the identified case in the file system. He unlocks the case and takes the evidence. Report Generation done manually by replication the content of the changed files into alternative file[7].

V. DOCUMENT THE BUGS IN PROJECTS

Bug tracing Tools can help leaders for Bug estimation per project or Application and also aids employees to document their Bug. In this project, we have used 5 modules:

A. Admin

Admin builds the project and allocating the projects to the generated manager, adding affiliates to the managers, allocating bugs created on the significance and can apprise the manager, members & right of entry to the certain project data[1]. The administrator can path the bugs, and it is repeatedly added to the tables comprising the bugs, by order of ruthlessness and status.

B. Manager

Manager has the complete right of entry to the certain project allocated by the admin and panels the team member right to use to the bugs allocated[1].

C. Developer

Developer can right of entry the task or bug assigned by the manager, view allocated projects and undertaking the allocated bug[1].

D. Tester

Tester can right of entry to the projects or bugs allocated by the manager & can vision the allocated projects & can add a fresh bug to the slope & lead the bug rear to the manager. Tester can login to the system and right of entry the allocated projects list[1].

E. Reports

Both Admin and Manager can right of entry this module and produce the reports based on the necessities[1].

VI. IMPLEMENTATION PROCEDURE

The core point in the putting into practice is planning, training, system testing. Implementation is translating a new or go through system into an functioning one. Alteration is the core aspect of putting into practice[4]. It is the process of fluctuating from the hoary system to the new one. After system is implemented, user compartments a review of the system. It is used to gather information for the conservation of the system. The basic review method is a data collection method of inquiry form, interview[8]. Cost Estimation can be made any top-down or bottom-up. Top-down evaluation starts with classification level expenses, work out the costs of computing funds, improvement staff, conformation management, quality assurance, system integration, training and periodicals. Constructive Cost Model (COCOMO) is the most important model. Basic COCOMO is germane to large common of software project[10].

VII. FUTURE SCOPE

When a customer submits a bug report, he's asked a number of demands: what's the designation of the product? for the duration of which plugin / module? what's the Physique ID? what's the bug around? What part item the phases to imitate the bug? Some extra evidence? however, the opening information delivered thru a bug report normally | is usually| is commonly inadequate and developers often have follow-up demands: does one have ostentatious installed? Is there any screenshot? obtaining replies by users takes time (often weeks) and reduces down the progress on open bugs[10]. And this makes the complete method inactive and reduces down the method of bug pursuit. The advantages of the improved set of principles can offer user higher info regarding existing bug. This may outcome in quicker discovering of this defect and to the earlier response to it[4].

VIII. CONCLUSION

Bug Tracking Tools are free and open source and web based bug tracking tools that work as well as most commercial bug tracking tools and can be used with minimum effort[[5]. These tools are protected, defect tracking and project management solution. Developers can obligate the source encryption. The look and feel is good and it is useful and easy to use.

In this paper, from the data analysis we have mostly used three bug tracking tools Namely JIRA, Bugzilla, Trac. These three tools are mostly used to report and document the bugs in projects and also explaining how to report and document the bugs and also who report and document the bugs are also explained in that paper[6].

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