A Monitoring Framework of Tracking Bug to Upsurge Software Quality

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ABSTRACT
Decisions are the main factors that has to be made during every SDLC. Whether it is a software coding bug or any organizational problem which include any department in an organization, Employees needs to take decisions and a way to ensure these decisions are feasible and accessible ones the coding phase starts. This paper makes this process easier by proposing some useful structures i.e. the users report their bugs to the admin that they faced during SDLC. The admin further assign this bugs to experts who resolve them and update user which maintains the workflow of project development. It also generates graphs and reports for documentation process and to keep records.

Keywords
Bug Tracking System (BTS), Bug Update, Software development lifecycle (SDLC).

1. INTRODUCTION
Great maintenance and caring is required for proper resolving of bugs faced during SDLC. In the Existing systems bugs are not properly organized and they are simply depend on shared lists and emailing to monitor the bugs. In this type of system it becomes hard to track a bug, if a bug is observed again & again then it may cause tremendous defects in the coming phases and can improve the costing of project. Whatever necessary effort spent on the bug maintenance may not be worthy. So bug lifecycle has to be maintained properly. And there is no efficient search technique. One has to search the whole database for the details of particular bug which might have occurred sometime earlier. It is both time consuming and error prone. BTS is the process of reporting and tracking the progress of bugs from discovery through to resolution, where a bug is defined as an unwanted defect or requirements deviation. This is a tool which can be used by any company or organization. This tool is used for updating and resolving bugs details with in any application. In this bug assigned by admin to experts and tracking the bugs to resolution. There are features like emailing information, report & graphs generated etc. in this system.[1] The purpose of BTS is to upsurge software quality and to provide enhanced service to the admin and to develop useful software in an software development company. So that it could bring satisfaction to clients of that organization.

2. LITATURE REVIEW
There are many tools available in the market like bugzilla, Jira etc. in the market in today’s era. But they do have some demerits like:
- They fail to generate reports.
- They do not provide mailing system.
- They are complex in nature, over-sized, hard to update, and very costly.

Advantages over existing system:
- They do not provide graphs generation.[5]

3. METHODOLOGY
The working of proposed framework is basically based on four modules. These modules are only responsible for working of BTS as they are the key factors of the BTS. These modules are User, Admin, Expert and reports. These modules are interconnected to each other and they work according to work assigned to one another and by one another. The user only add a bug to the application when it feels deviation in requirements then the admin assigns its priority and assign the specific bug to other experts where experts can resolve the bug and can add special comments and review points.

3.1 Proposed work
In the proposed bug tracking and monitoring framework to upsurge software quality there are 4 modules who play different roles.

This modules are as follows:

a) User:
- The working of user is that user will add a bug or problem faced during SDLC.
- User can also view the details and current status of the bug he added.
- User can also add special comments and can set the severity of his bug.
b) Administrator:
- The working of administrator in this project is that this admin can entirely access to all other modules.
- For the bugs added by the user, Admin add experts. Priority of the bug is also assigned by admin to expert. [8]
- Admin update the user. Experts and can see the project report. Generating reports based on the users report submission. Admin can set the bug review condition.

c) Expert:
- The working of expert is that the expert access the bugs assigned by the admin.
- It will resolve the bugs and can send the bug back to the user or admin.
- Expert will login to the system and access the assigned bugs list that he has to resolve provided by admin.
- Expert can easily assign review and add special comments to the projects.

d) Reports:
- The Database Report keeps all the information of bugs and its details like type of bug, bug id, date assigned, expert assigned, and most important priority and severity of the bug in the SDLC.
- It keep all the records and modifications done in a bug life cycle.
- It also generates Graphs and charts.
- Reports are also generated in Database which is used to keep the records for future and Documentation & mailing purposes.

OS Required
- Microsoft Windows XP / higher version of Windows OS required.

Some used Codes functions:
```java
String prodid=(String)request.getParameter("prodid");
String prodname="";
String env=(String)request.getParameter("env");
String type=(String)request.getParameter("type");
String description=(String)request.getParameter("description");
String authorid=(String)request.getParameter("authorid");
String author=(String)request.getParameter("author");
if("".equals(description))
{
    RequestDispatcher rd=request.getRequestDispatcher("reportbug.jsp?msg=error").forward(request, response);
}
```

Report Bug Code

4. RESULTS & SCREENSHOTS

Proposed system is tested on various software projects and it gives a accessible and feasible results. Some of the tables entries and their details are shown below:

<table>
<thead>
<tr>
<th>Table 1: Bug Description Table</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entries</strong></td>
</tr>
<tr>
<td>Bug Id</td>
</tr>
<tr>
<td>Product</td>
</tr>
<tr>
<td>Environment</td>
</tr>
<tr>
<td>Comments</td>
</tr>
<tr>
<td>Severity</td>
</tr>
<tr>
<td>Type</td>
</tr>
</tbody>
</table>

Step Down Process of BTS

Facilities Required
- Web paged are developed using CSS and HTML technology
- Java script is being used as coding phase of the project.
- At server side database being used is oracle.

PDF document report .
- Graphs & charts based on the bugs faced.
- Users can also mail there information.

1. Increment in performance by using well managed Database.

The performance of our proposed system is increased due to formation of a well-managed databases which includes bug details type of bug, environment on which it occurred, severity, product, synopsis, status and important of all bug id.
2. Advanced Security
Security is the main topic and factor which was kept on mind during development of this project. Security is important to keep the dignity of project and users information.

3. Updating bug details.
Details of the bugs are easy to update and modify using this system as it provides a very effective framework for editing and updating purposes. It includes priority, status, responsible, Bug Id, environment etc.

4. Graphs

5. CONCLUSION
Facing bugs during coding and testing phase are the base unit of SDLC. So to continuing the development phase, bugs faced have to be resolve ASAP. BTS needs basic information of bugs to make it run faster. There are some effective bug trackers in market. However, certain improvement can be made so as to make them more effective. This improvements are mentioned in this paper. The system we propose have four modules that helps us to fix bugs in BTS. They are tools oriented, data oriented, steps oriented and user based in nature. By following these steps, ideal BTS can be built.

There are step by step process of modules which while following make the BTS perfect. The more interactions followed while building a BTS, the more efficiently it works.

To prove the efficiency of the proposed framework, some specific answers have been added. Thus it boosts the bug resolving process taking very lesser time to fix bugs. The system proposed in this paper can be further enhanced by making it more dynamically active, robust and communicative and acclimate to all kinds of software projects in future.

Advantages are:
- Better communication between employees of organization.
- Client satisfaction having Defect free Project.
- Increment in organization’s productivity.
- Generates reports& Graphs for Documentation.

6. REFERENCES


