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 anyorganizational problem which include any department in an organization.Employees needs to take decisions and a wayto ensure this decisions are feasible andaccessible ones the coding phase starts. Thispaper make this process easier by proposingsome useful structures i.e. the users report their bugs to the adminsthat 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 andreports 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 notproperly 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 thecoming 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 discoverythrough to resolution, where a bug is defined as aunwanted defect or requirements deviation. This is a tool which can be used by any company or organisation.This toolis used for updating and resolving bugs details wtth in any application, In this bugsassigned by admins to expertsand tracking the bugs to resolution. There are features like emailinginformation , report & graphs generatorsetc. in this system.[1]The purpose of BTS isto upsurge software qualityand 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. LITREATURE 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 fails to generate reports.
- They do not provide mailing system.
- They are complex in nature,over-sized ,hard to update, and very costly.
- They do not provide graphs generation.[5]

Advantages over existing system:

- This system upholds theBugs . It has advantage of maintaining bug lifecycle as it keeps all the information from bug origin to bug resolution.
- It also provides the mailing technologyfor increasing communication process.
- Our System provides the searching based on status, priority,severity and operating system.
- It provides with user and bug hierarchy , which demonstrates the relation of bug and user by which it was allotted.[2]
- It is a fully authenticated system with password encryption. And has the facility for storing attachments for a bug.
- One can keep a track of the bug in a product with much lower cost and effort.[6]
- The most advantage of this system is maintaining log records inform of reports andcan easily generate graphs showing variations and bug faced during a period of time.

3. METHODOLOGY
The working of proposed framework is basically based on four modules. This modules are only responsible for working of BTS as they are the key factors of the BTS. This modules are User, Admin ,Expert and reports. This 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 assign 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 rolls.

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:

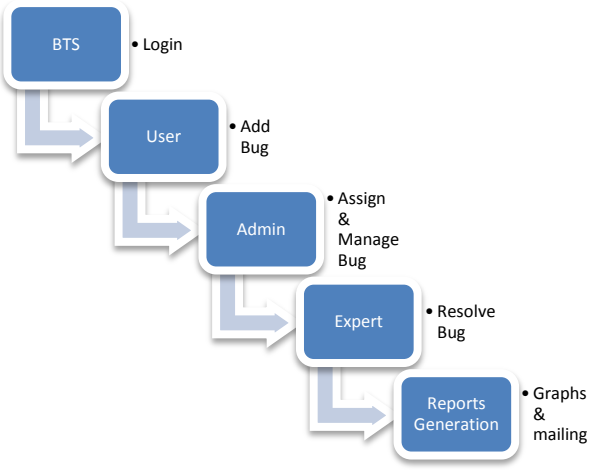
- The working of administrator in this project is that this admincan entirely access to all other modules.
- For the bugs added by the user, Admin add experts ,priority of the bug is also assigned by admin to expert. [8]
- Admin update the user, Experts and can see the project report. Generating reports 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.



Step Down Process of BTS

Facilities Required

- Web paged are developed using CSS and HTML technology
- Java script is being used ascodingphase of the project.
- At server side database being used is oracle.
- **OS Required** Microsoft Windows XP / higher version of Windows OS required.

Some usedCodes functions:

```
Stringprodid=(String)request.getParameter("prodid");

String prodname="";

String env=(String)request.getParameter("env");

String type=(String)request.getParameter("type");

Stringdescription=(String)request.getParameter("description")
;

String authorid=(String)request.getParameter("authorid");

String author=(String)request.getParameter("author");

if("".equals(description))

{

RequestDispatcherrd=request.getRequestDispatcher("reportbu
g.jsp?msg=error");rd.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 1: Bug Description Table

Entries	Data Type	Description
Bug Id	Number	Not Null
Product	Text, Number	Not Null
Environment	Text , Number	Not Null
Comments	Text ,Number	Not Null
Severity	Number	Not Null
Type	Text	Not Null

The Proposed system is a web based application which consists of browser online tool, as it gives us the integrated database. It keeps bugs synopsis and description of the particular bug data. It can also create:.

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

1. Increment in performance by using well managedDatabase.

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.

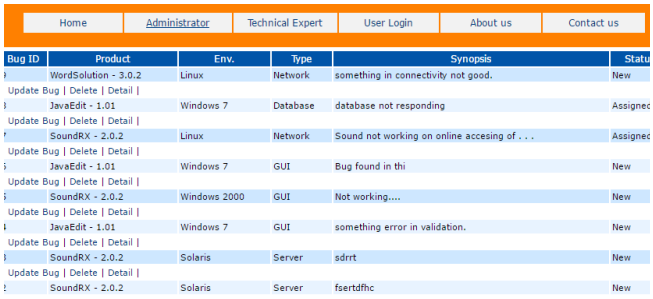


Fig 1.Bug Database

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 .

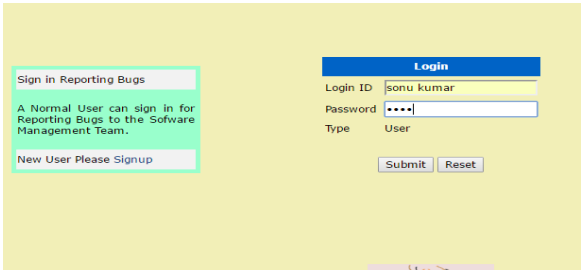


Fig 2.Secure Login

3. Updating bug details.

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

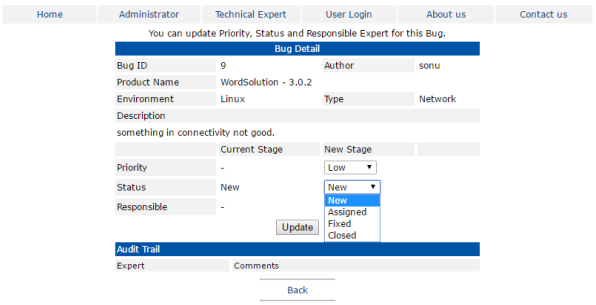


Fig 3.Bug Updation

4. Graphs

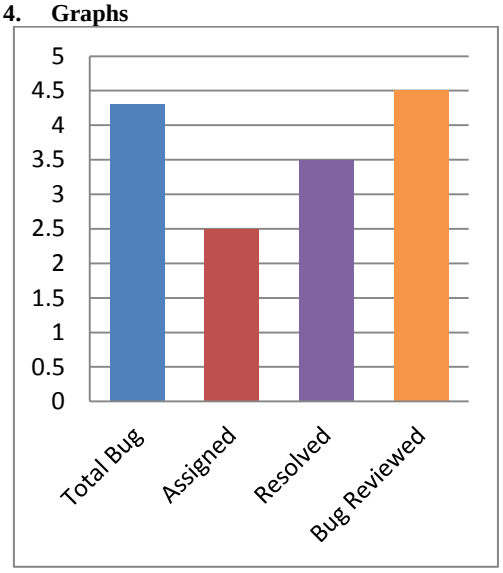


Fig 4.Graphs of Bugs

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. [7]

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.
- Gives accountability Report &bug detail during software development.
- Increment in organization's productivity.
- Generates reports& Graphs for Documentation.

6. REFERENCES

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