



## **TITLE- BUG TRACKER**

A Report of Evaluation 3 of project 2

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### BONAFIDE CERTIFICATE

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## **Abstract**

Bug Tracking for Improving Software Reliability (BTS) is an automated system that can be useful to employees and the managers in any functional organization. Bug Tracking System gives the facility to define the tasks in the organization and also allows the managers to track the bugs spent by the employee for that particular task. A report generation facility is supported in BTS that allows the managers to analyze which are those skills by employee are utilized and those which are not utilized. This tool can help managers for Bug estimation per project or application. This tool helps employees to document their Bugs and analyze

This project aims at creation of a Bug Tracking System. This project will be accessible to all developers and its facility allows developers to focus on creating the database schema and while letting the application server define table based on the fields in JSP and relationships between them. This system provides the following facilities.

The objectives of this system are:

- To keep track of employee skills and based on the skills assigning of the task is done to an employee.
- Employee does bugs capturing. It can be done on daily basis.

Various Reports are generated by this System for an employee and as well as to a manager.

## **2.INTRODUCTION**

### **2.1 Project Overview**

Bug tracking is the process of reporting and tracking the progress of bugs from discovery through to resolution, where a bug is defined as a deviation from requirements. Other terminology frequently used to describe this process include

- problem tracking
- change management
- fault management
- trouble tickets

Bug tracking systems are most commonly used in the coding and testing phases of the software development process. However, tracking systems can in fact be used for many other purposes such as general issue tracking, simple task lists, help desk situations or contact management, where the focus is on the tracking aspect rather than what is being tracked. Even in software development, tracking systems are quite often not limited to simply tracking bugs, but extended to track feature requests or enhancements as well as enquiries.

### **2.2 Purpose**

The purpose of Bug Tracking for improving software reliability is to provide better service to the administrator or useful for applications developed in an organization.

- To reduce the time constraint involved.
- To centralize all the data needed.
- To generate various reports as required
- To maintain the user rights.

### **2.3 Vision**

The purpose of Bug Tracking for improving software reliability is to provide better service to the administrator or useful for applications developed in an organization

### **2.4 Scope**

The Bug Tracking for Improving Software Reliability is a web based application that can be accessed throughout the organization. This system can be used for logging bugs against an application/module, assigning bugs to team members and tracking the bugs to resolution. There are features like email notifications, user maintenance, user access control, report generators etc in this system.

### **2.5 Definition, Acronyms, Abbreviations**

Bug - A software bug (or just "bug") is an error, flaw, mistake, failure, or fault in a computer program that prevents it from behaving as intended (e.g., producing an incorrect result). Most bugs arise from mistakes and errors made by people in either a program's source code or its design, and a few are caused by compilers producing incorrect code.

### **2.6 Technical feasibility**

Evaluating the technical feasibility is the trickiest part of a feasibility study. This is because, .at this point in time, not too many detailed design of the system, making it difficult to access issues like performance, costs on (on account of the kind of technology to be deployed) etc. A number of issues have to be considered while doing a technical analysis.

Understand the different technologies involved in the proposed system before commencing the project we have to be very clear about what are the technologies that are to be required for the development of the new system. Find out whether the organization currently possesses the required technologies. Is the required technology available with the organization.

## **2.7 Operational Feasibility**

Proposed project is beneficial only if it can be turned into information systems that will meet the organizations operating requirements. Simply stated, this test of feasibility asks if the system will work when it is developed and installed. Are there major barriers to Implementation? Here are questions that will help test the operational feasibility of a project. Are the current business methods acceptable to the user? If they are not, Users may welcome a change that will bring about a more operational and useful systems.

Have the user been involved in the planning and development of the project?

Early involvement reduces the chances of resistance to the system and in general and increases the likelihood of successful project.

Since the proposed system was to help reduce the hardships encountered. In the existing manual system, the new system was considered to be operational feasible.

## **2.8 Economic Feasibility**

Economic feasibility attempts to weigh the costs of developing and implementing a new system, against the benefits that would accrue from having the new system in place. This feasibility study gives the top management the economic justification for the new system.

A simple economic analysis which gives the actual comparison of costs and benefits are much more meaningful in this case. In addition, this proves to be a useful point of reference to compare actual costs as the project progresses. There could be various types of intangible benefits on account of automation. These could include increased customer satisfaction, improvement in product quality better decision making timeliness of information, expediting activities, improved accuracy of operations, better documentation and record keeping, faster retrieval of information, better employee morale.

## **3.Existing System**

The existing system consists of entering the details in the Microsoft Excel Sheets for the storing of the data. When a manager needs information of the employee he searches for the specified file in the file system. He opens the file and takes the information. Report Generation done manually by copying the content of the different files into another file. The Manually generated report was then printed.

### **Limitations in Existing System**

- Information retrieval is a very big process.
- Lack of organization of the files may porm to information loss due to accidental deletion of files.
- No security because the files are visible to the users.
- Report generation will be a big task.

## **4.Proposed System**

The Proposed system is a browser which is completely related to online system, which provides the centralized database. It stores bugs data and description of the particular bug data. It can also create Excel reports and PDF documents based on the information in its database.

### **Advantages over Existing System**

- The performance is increased due to well designed database.
- Security is increased
- Time saving in report generation
- Easy to update the details



# 5-IMPLEMENTATION AND ARCHITECTURE

## FUNCTIONAL OR SPECIFIC REQUIREMENTS

Required software is for conducting online thesis management and provides upload and download function. The system should satisfy the following requirements:

- **Administrator Aspect**

To upload thesis, documents, presentation by providing the title and description.

To approve users to access the system.

To maintain the details of members and thesis.

To view all the members and thesis.

To Upload thesis, documents, presentations

To change password.

Scheduling the work.

- **Student Aspect**

To view / update their profile.

To update their password.

To download thesis, documents, presentations.

To search thesis by name, title, authors etc.

- **Analysis**

Authenticating users based on username and password.

Keeping session track of user activity.

Only registered candidate can download thesis.

Only administrator can upload thesis.

## **External Interface Requirements**

### **Software Requirements**

Operating System	:	Windows XP/ Windows 7/8
User Interface	:	HTML, CSS
Client-side Scripting	:	JavaScript
Programming Language	:	Java
Web Applications	:	JDBC Servlets, JSP
Database	:	Oracle/Access

### **Hardware Requirements**

Processor	:	intel core 3
Hard Disk	:	2TB
RAM	:	4 GB

### **Database**

Oracle Server

### **Non-Functional Requirements**

- System should be able handle multiple users
- Database updating should follow transaction processing to avoid data inconsistency.

### **Security**

- Administrator has the highest authority to edit/delete/create database
- Administrator have the authority to add/expel students
- Students can view and download thesis

## Reliability

Data validation and verification needs to be done at every stage of activity.

- Validating user input
- Use of locking mechanism while updating database like transaction processing
- Recovering the transaction using rollback.

## Portability

- The web application will be built using JSP which has support to run on any platform provided the required compilers are available.
- For database SQL Server would be used, that too has extensive support over many popular architectures and operating systems.

## Performance

The system would be used by multiple users at a time and may grow as time passes; the system would need to implement multithreading to achieve acceptable performance. Further a database connection pool may also be required for assigning faster database connection.

## Database Requirements

The overall objective in the development of the database technology has been to treat data as an organizational resource and as an integrated whole. Database management system allows data to be protected and organize separately from other resources. Database is an integrated collection of data. The most significant of data as seen by the programs and data as stored on the direct storage access storage devices.

## Technologies

This section lists all the technologies for the web based system.

- **Core Java:** Java is a set of computer software and specifications developed by Sun Microsystems, later acquired by Oracle Corporation that provides a system for

developing application software and deploying it in a cross-platform computing environment.

- **JSP:** JavaServer Pages (JSP) is a technology that helps software developers create dynamically generated web pages based on HTML, XML, or other document types. To deploy and run JavaServer Pages, a compatible web server with a servlet container, such as Apache Tomcat or Jetty, is required.
- **Servlet:** Java Servlets are programs that run on a Web or Application server and act as a middle layer between requests coming from a Web browser or other HTTP client and databases or applications on the HTTP server.
- **NetBeans IDE:** NetBeans is a software development platform written in Java. The NetBeans Platform allows applications to be developed from a set of modular software components called modules. Applications based on the NetBeans Platform, including the NetBeans integrated development environment (IDE), can be extended by third development party.
- **HTML:** HTML is a markup language for describing web documents (web pages). HTML stands for Hyper Text Markup Language. A markup language is a set of markup tags. HTML documents are described by HTML tags. Each HTML tag describes different document content.
- **JavaScript:** JavaScript is a high-level, dynamic, untyped, and interpreted programming language.
- **SQL:** SQL is a fast, easy-to-use RDBMS being used for many small and big businesses. SQL is becoming so popular because of many good reasons like SQL is released under an open-source license. So we have nothing to pay to use

## **Hardware**

The recommended hardware specified by the respective software would suffice the needs. The memory and processing power needed would increase as the number of users increase. The estimated hardware requirements are as specified.

## Server

The minimum hardware as recommended by all of the software required on server side say web server, operating system and development software

- Processing speed of 1.6 GHz
- 4 GB of RAM
- Network interface

## Client

The minimum hardware as recommended by all of the software required on client side say web browser, operating system

- Minimum hardware depending on the operating system used
- True color visual display unit
- User peripherals for better interaction

# ARCHITECTURE DESIGN

## **Data Flow Diagram**

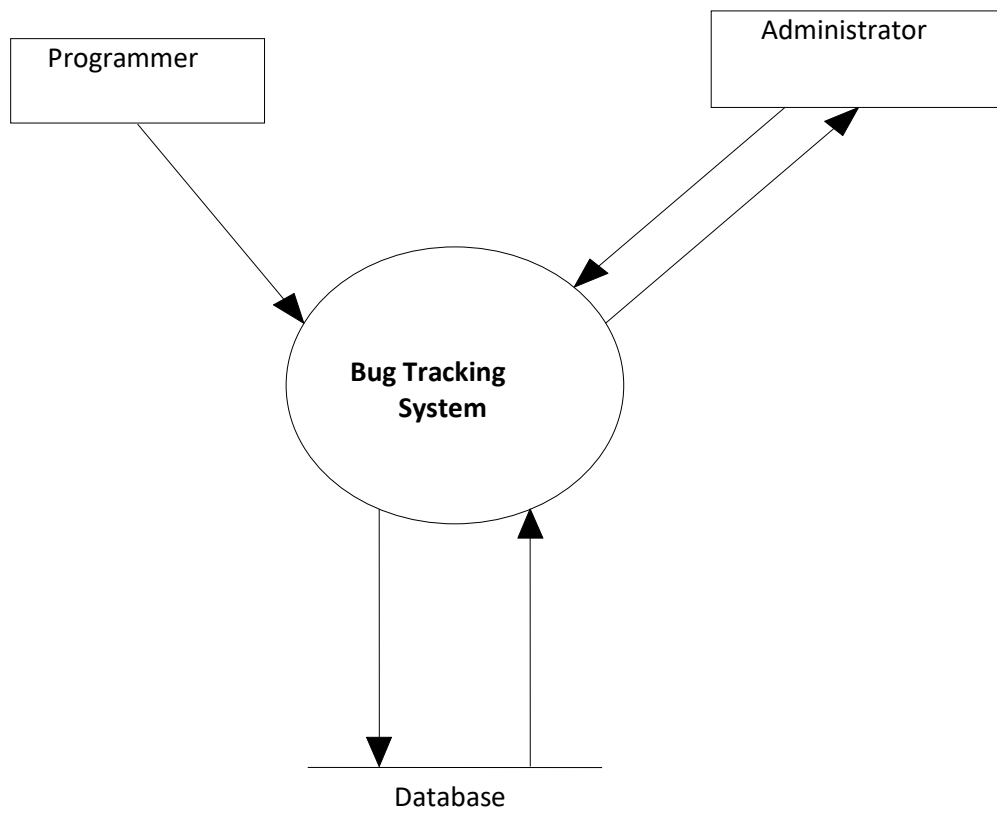
In our DFD, we give names to data flows, processes, and data stores. Although the names are descriptive of the data, they do not give details. So the following the DFD, our interest is to build some structured place to keep details of the contents of data flow, processes, and data store. A data dictionary is a structured repository of data about data. It is a set of rigorous definition of all DFD data element and data structure

## **DFD Symbols**

In the DFD, there are five symbols,

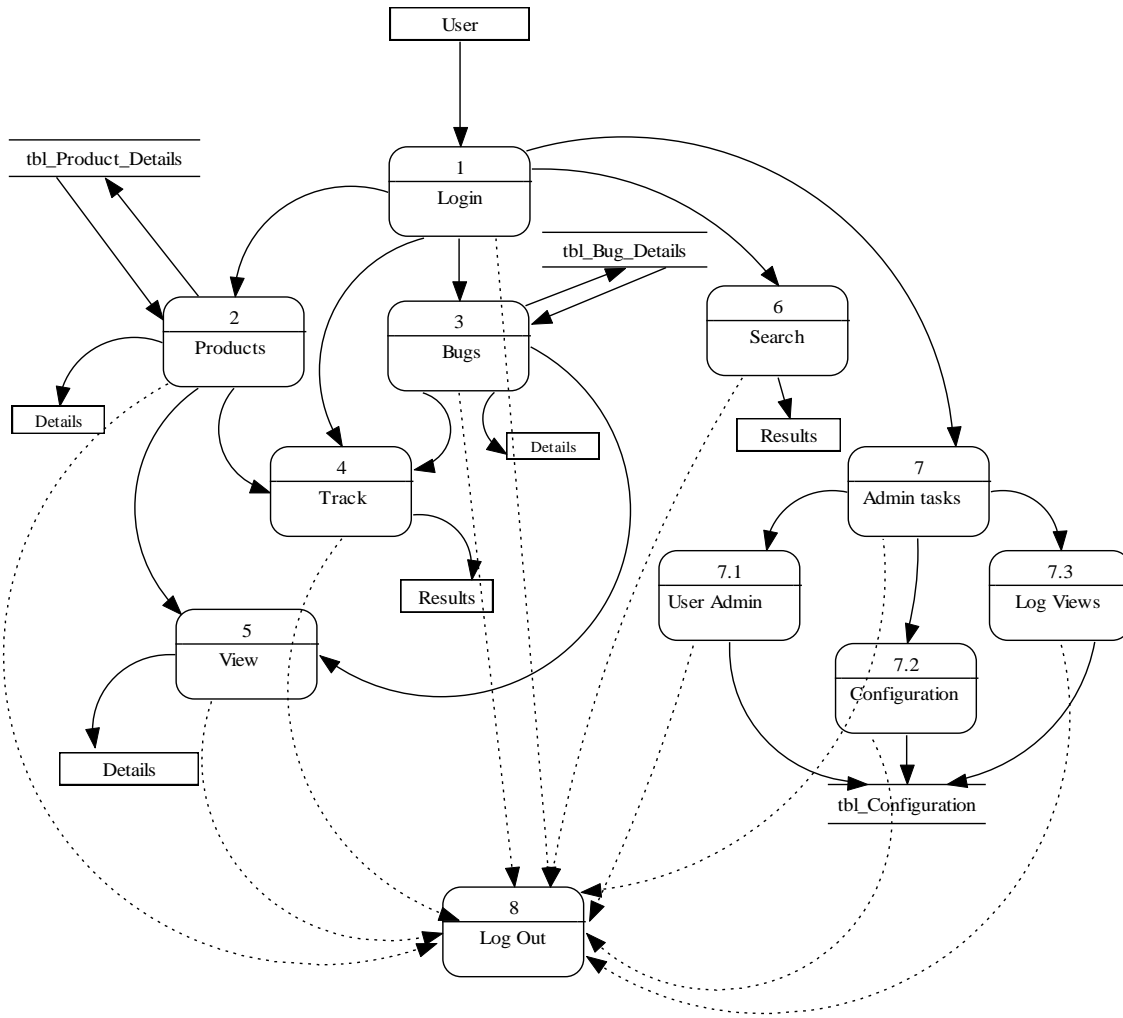
- 1 A Square defines a source (originator) or destination of system data.
- 2 An Arrow identifies data flow- data in motion .It is pipeline through which information flows.
- 3 A circle or a bubble (or a oval bubble) represents a process that transforms incoming data flow(s) into outgoing data flow(s)
- 4 An Open rectangle is a data store-data at rest, or temporary repository of data.

**Data Flow Diagram: Level 0**



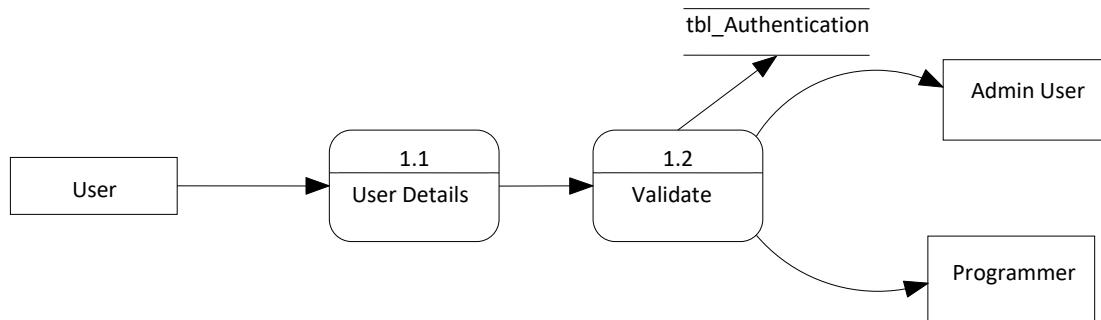
# Data Flow Diagram: Level 1

BTS - TOP LEVEL DIAGRAM



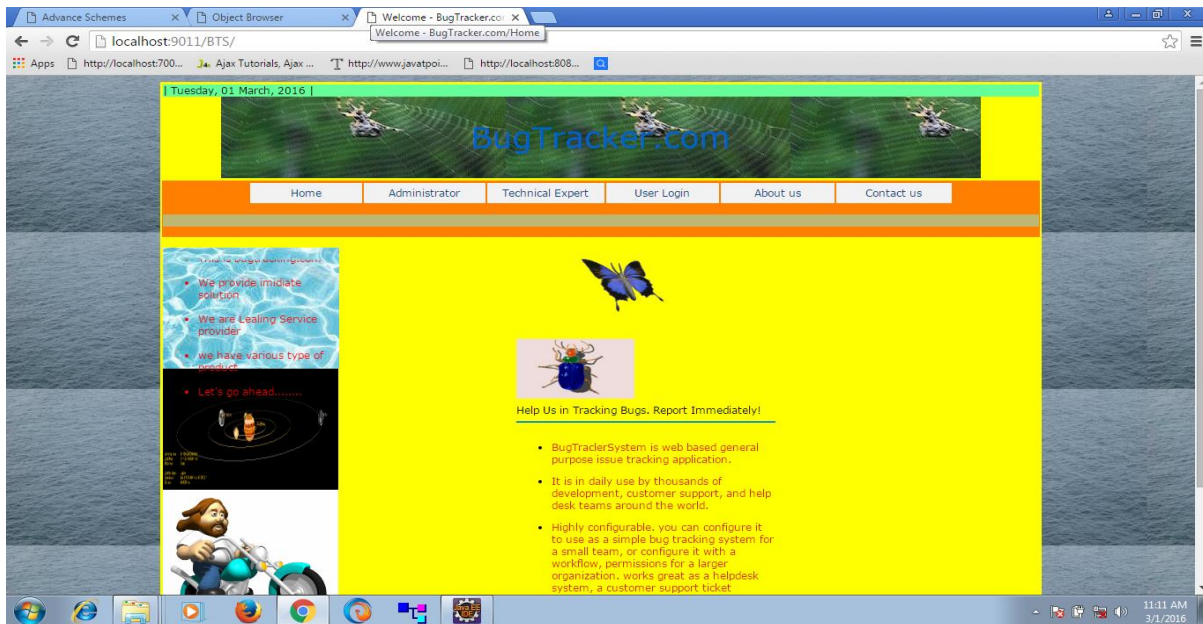


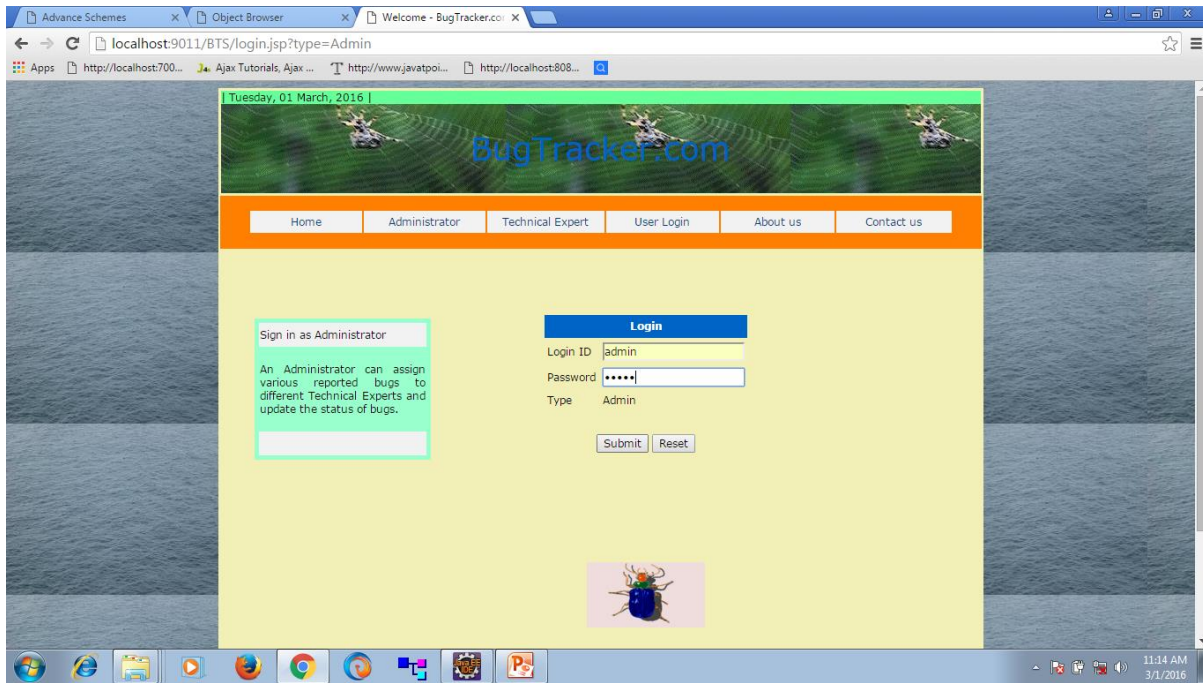
**Diagram which shows the working of the BTS**



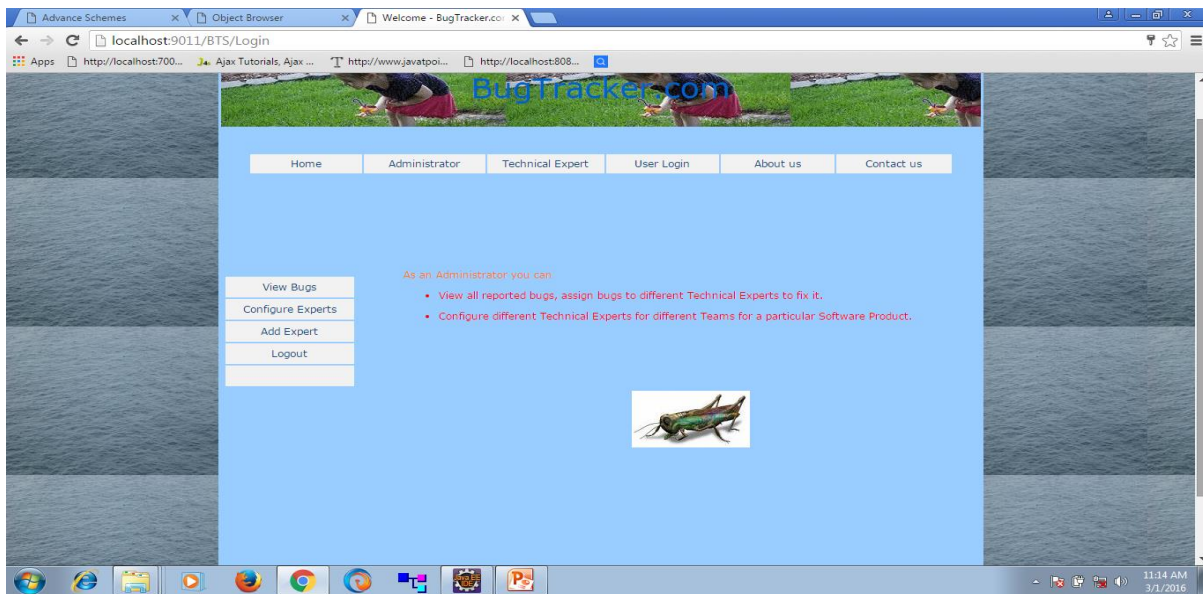
# 6 Output

## Home Page

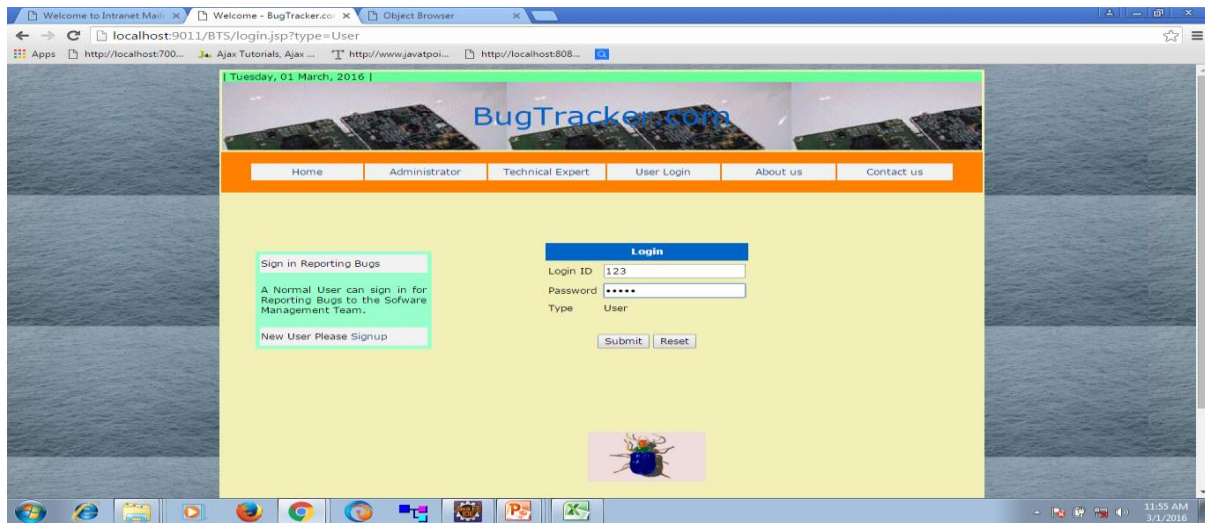




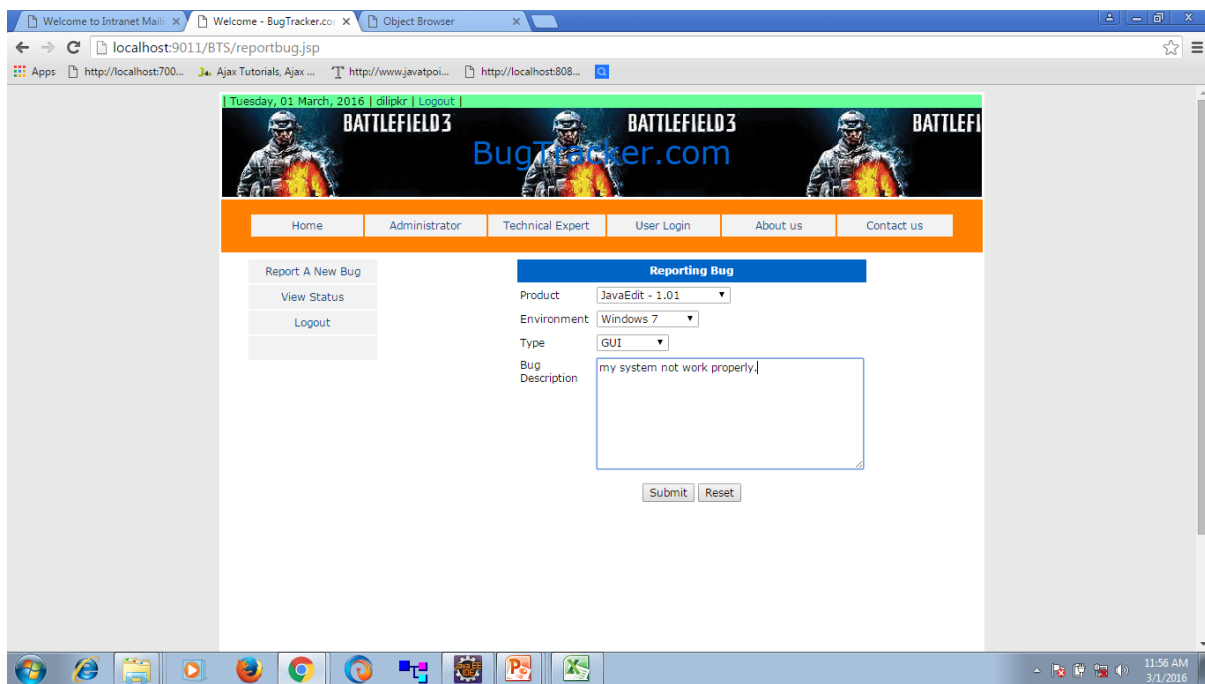
## Admin Page



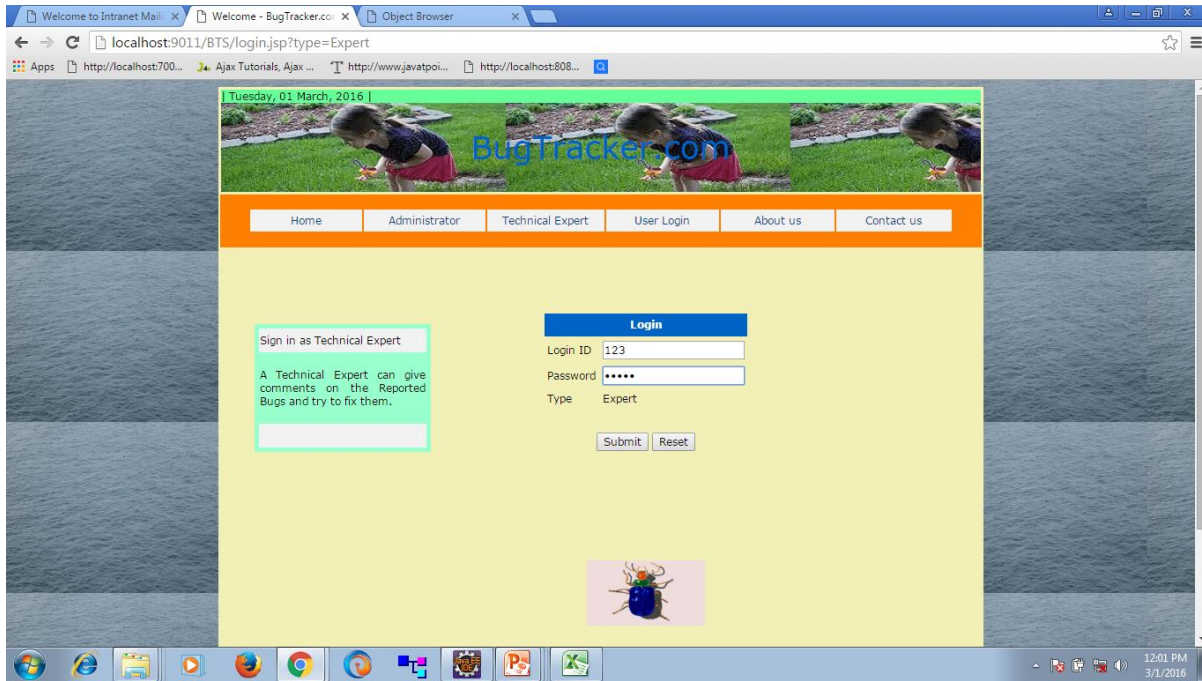
## User login



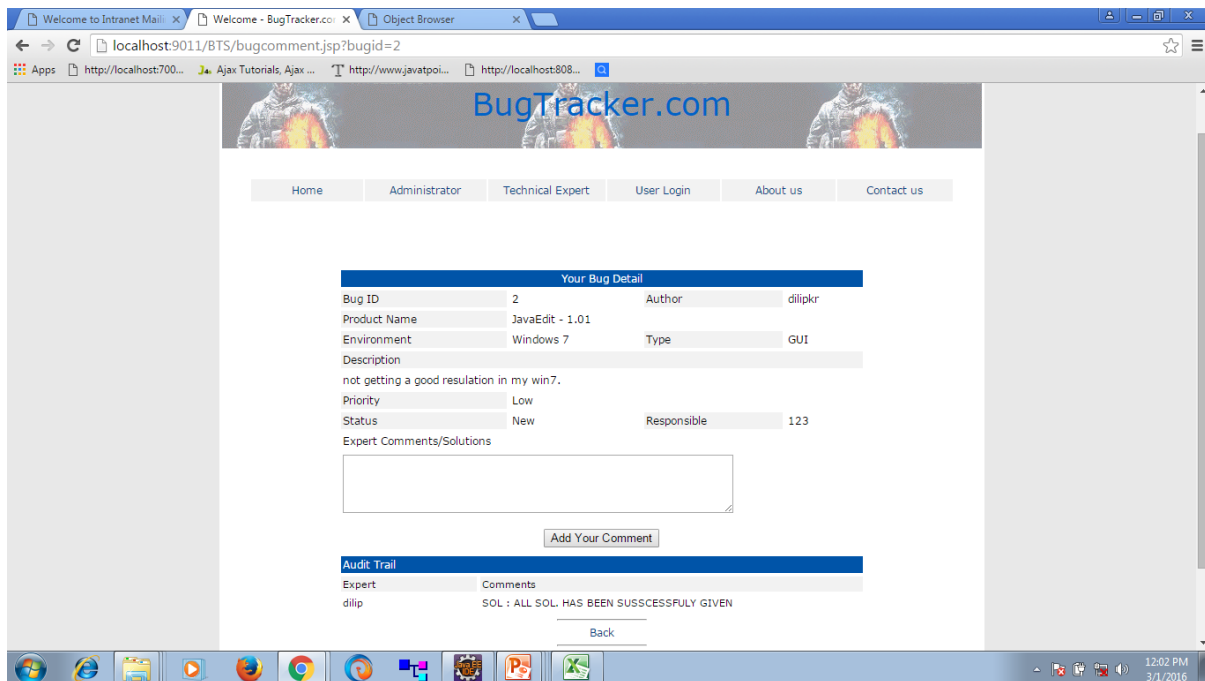
## User Page



## Expert Login



## 4.8 Expert resolve bugs



## 7 Conclusion

This project Bug Tracking for Improving Software Quality and Reliability is to keep track of employee skills and based on the skills assigning of the task is done to an employee. Employee does bugs capturing. It can be done on daily basis. Various Reports are generated by this System for an employee and as well as to a manager.

This project will be accessible to all developers and its facility allows developers to focus on creating the database schema and while letting the application server define table based on the fields in JSP and relationships between them.

This application software has been computed successfully and was also tested successfully by taking “test cases”. It is user friendly, and has required options, which can be utilized by the user to perform the desired operations.

The software is developed using Java as front end and Oracle as back end in Windows environment. The goals that are achieved by the software are:.

- ✓ Improved productivity.
- ✓ Optimum utilization of resources.
- ✓ Efficient management of records.
- ✓ Simplification of the operations.
- ✓ Less processing time and getting required information.
- ✓ User friendly.
- ✓ Portable and flexible for further enhancement.

## **Future Enhancements:**

It is not possible to develop a system that makes all the requirements of the user. User requirements keep changing as the system is being used. Some of the future enhancements that can be done to this system are:

- As the technology emerges, it is possible to upgrade the system and can be adaptable to desired environment.
- Because it is based on object-oriented design, any further changes can be easily adaptable.
- Based on the future security issues, security can be improved using emerging technologies.
- Attendance module can be added
- sub admin module can be added

## 8 REFERENCES

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