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Research Paper

ONLINE BUG TRACKING SYSTEM

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ABSTRACT

In modern software development, managing and resolving software defects efficiently is critical for maintaining product quality and timely project delivery. An **Online Bug Tracking System** is a web-based application designed to streamline the process of reporting, tracking, and resolving software bugs. This system allows developers, testers, and project managers to collaborate in real-time, ensuring that every reported issue is logged, categorized, prioritized, and assigned for resolution systematically. The platform provides features such as user authentication, bug status tracking, automated notifications, and reporting tools that help monitor progress and identify recurring problems. By centralizing bug management, the system reduces communication gaps, prevents issue duplication, and improves overall software reliability. The implementation of an online bug tracking system not only enhances team productivity but also contributes to faster problem resolution, leading to higher-quality software products and improved user satisfaction.

Keywords: The system focuses on **bug tracking, issue management, and software defect resolution** through an **online collaboration platform**. It supports **project management** by enabling **real-time monitoring, task assignment, and automated notifications**, thereby improving **software quality assurance** and ensuring efficient **issue resolution**.

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1.INTRODUCTION

In software development, managing bugs efficiently is essential to ensure high-quality and reliable applications. Software defects, if not addressed promptly, can lead to project delays, increased costs, and poor user experience. An **Online Bug Tracking System** provides a centralized platform for reporting, monitoring, and resolving software issues. It enables developers, testers, and project managers to collaborate effectively in real-time, allowing for better communication and faster decision-making.

The system allows bugs to be logged with detailed information such as severity, priority, description, and screenshots, which helps in accurately identifying and reproducing issues. Tasks can be assigned to appropriate team members, and the progress of each issue can be tracked through various status stages like "New," "In Progress," "Resolved," and "Closed." Automated notifications keep the team informed about updates, ensuring no bug is overlooked.

By providing a structured workflow for handling defects, the online system reduces duplication of effort, minimizes human errors, and maintains a comprehensive history of all issues for future reference. It supports project management by generating reports and analytics that help identify recurring problems, assess team performance, and make informed decisions.

Overall, implementing an **Online Bug Tracking System** enhances productivity, improves software quality, and ensures that applications are delivered on time with minimal errors. Popular tools like **JIRA, Bugzilla, and Redmine** exemplify the effectiveness of such systems in real-world software projects, highlighting their importance in modern development practices.

2.LITERATURE REVIEW

Bug tracking systems have been widely studied and implemented to improve software development efficiency. Traditional manual methods of bug tracking were often time-consuming and prone to errors, leading to delayed resolutions and increased project costs. With the growth of web-based applications, **online bug tracking systems** have become essential tools for managing software defects efficiently.

Researchers have explored various approaches to bug management. For instance, **Bugzilla**, one of the earliest bug tracking tools, provides detailed issue logging, categorization, and workflow management. Similarly, **JIRA** introduced advanced features such as real-time collaboration, customizable workflows, and integration with development tools, enabling agile project management. Studies indicate that automated notifications, priority-based assignment, and status tracking significantly reduce the turnaround time for bug resolution and enhance overall software quality.

Recent research emphasizes the importance of integrating **analytics and reporting** features within bug tracking systems. These features help identify recurring issues, monitor team performance, and support data-driven decision-making. Furthermore, hybrid systems combining bug tracking with version control and project management tools are gaining popularity, as they offer a unified platform for development and defect management.

3. EXISTING SYSTEM

In many organizations, software defects were traditionally managed using **manual methods** like spreadsheets, emails, or offline logs. These approaches often lead to communication gaps, duplication of reported bugs, and delays in resolving critical issues. Tracking the status of bugs manually makes it difficult to monitor progress, assign tasks efficiently, and generate reports for analysis.

Some organizations use **desktop-based bug tracking tools** like Bugzilla or older versions of Redmine. While these tools provide basic functionalities such as bug logging and status updates, they often lack real-time collaboration features, easy accessibility from multiple locations, and integration with modern development environments.

The existing systems, therefore, face challenges like limited scalability, inefficient collaboration between team members, and delayed notifications. These limitations highlight the need for a **web-based, online bug tracking system** that can offer centralized access, automated updates, and seamless communication among developers, testers, and project managers.

4.PROPOSED SYSTEM

The proposed system is an **Online Bug Tracking System** designed to overcome the limitations of traditional and desktop-based bug management methods. It is a **web-based platform** that allows developers, testers, and project managers to report, track, and resolve software defects efficiently from any location.

Key features of the proposed system include **real-time bug reporting, status tracking, priority-based task assignment, automated notifications, and comprehensive reporting**. Each bug is logged with details such as severity, description, screenshots, and assigned personnel, ensuring clear communication and accountability. The system supports multiple users with role-based access, enhancing collaboration and preventing unauthorized modifications.

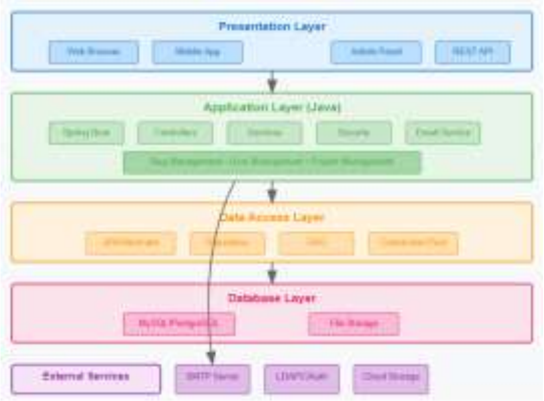
The platform also includes **analytics and dashboards** that provide insights into recurring issues, team performance, and project progress. By centralizing bug management, the system reduces duplication of effort, minimizes errors, and ensures faster resolution of critical issues. Additionally, it can be integrated with other project management and version control tools to create a unified development environment.

5.METHODOLOGY

The development of the **Online Bug Tracking System** follows a structured approach to ensure efficiency and reliability. It begins with **requirement analysis** to understand the needs of developers, testers, and project managers, defining key features such as bug reporting, tracking, notifications, and reporting. Next, the **system design** phase establishes the architecture, including user roles, database structure, and bug management workflows. During **implementation**, the system is developed using web technologies and a database to store bug and user information. **Testing** is performed at multiple levels—unit, integration, and user acceptance—to ensure proper functionality. After successful testing, the system is **deployed** on a web server for online access by authorized users. Finally, **maintenance** ensures continuous monitoring, updates, and issue resolution. This methodology provides a systematic and collaborative approach, enabling faster bug resolution, improved team productivity, and higher software quality.

6.System Model

SYSTEM ARCHITECTURE



7..Results and Discussions

PassWord.Java (Sender Side)

Welcome to Bug Tracking System!

8. CONCLUSION

The **Online Bug Tracking System** provides an efficient and centralized platform for managing software defects, enabling developers, testers, and project managers to collaborate effectively. By automating bug reporting, status tracking, task assignment, and notifications, the system reduces communication gaps, prevents duplication of issues, and ensures timely resolution of critical problems. The inclusion of analytics and reporting features allows teams to monitor progress, identify recurring issues, and improve overall software quality. Implementing this system enhances productivity, streamlines the development process, and contributes to delivering reliable and high-quality software products. In today's fast-paced software environment, such a system is indispensable for maintaining project efficiency and achieving user satisfaction.

The **Online Bug Tracking System** plays a vital role in modern software development by providing an organized and efficient way to manage software defects throughout the project lifecycle. It simplifies the process of reporting, tracking, and resolving bugs, ensuring better coordination among developers, testers, and project managers. Through its web-based interface, the system allows users to access and update information from any location, promoting collaboration and transparency within the team.

The automation of notifications, status updates, and task assignments significantly reduces manual effort and the chances of human error. Detailed bug histories and reports help in analyzing trends, identifying recurring issues, and improving future development practices. The system also enhances accountability by maintaining logs of user actions and bug status changes.

By implementing this system, organizations can achieve faster problem resolution, improved software quality, and increased customer satisfaction. It not only streamlines the debugging process but also strengthens project management and communication within the team. In conclusion, the **Online Bug Tracking System** is an essential tool for efficient software maintenance, ensuring that projects are delivered on time, within budget, and with superior quality.

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