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BSD 3107

SOFTWARE TESTING AND TOOLS

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Software Application: Google Chrome

Function: Google Chrome is a well-known web browser that it created. Users are able to connect to the internet, view websites, and engage with web-based apps. Chrome provides a number of capabilities, including bookmarks, extensions, developer tools, and cross-device synchronization.

Specific Defect: High Memory Usage

Defect Description: One unique issue with Google Chrome is that it has a tendency to use up a lot of system memory. High memory consumption as a result of this might make the browser slow, unresponsive, or even crash. Numerous Chrome users from various platforms have complained about the excessive memory utilization issue.

Root Cause Analysis:

1. What: Google Chrome is using a lot of memory.
2. Where: occurs within the memory management and coding of the browser.
3. When: When Chrome is running, especially when multiple tabs or extensions are open.
4. Who: The developers involved in designing and implementing Chrome's memory management.
5. How: The memory usage issue occurs due to several factors, including:
    - Algorithms for managing memory in Chrome may not be effective in releasing or recycling memory resources, which can result in a needless use of memory.
    - Memory leaks: Some Chrome code or processes may have memory leaks, which result in memory allocation but improper memory release.
    - Extensions and plugins: Depending on how well they are optimized or whether they have memory leaks, some extensions or plugins installed in Chrome may result in higher memory usage.
6. Why: Inadequate memory management methods, memory leaks in the browser's code or extensions, and insufficient extension and plugin optimization are some of the main causes of Google Chrome's excessive memory utilization.

The Google Chrome development team would need to:

1) Identify and optimize memory management algorithms to effectively release unused memory in order to fix the excessive memory use problem.
2) Find and fix any memory leaks in the extensions or the browser code.
3) Encourage developers to reduce memory utilization in their extensions and plugins.

4) Make that memory use is within acceptable bounds for typical browsing activity by performing extensive testing.

Regular updates and bug fixes released by Google aim to address and improve the memory management issue, striving to provide users with a more optimized and efficient browsing experience.