

Code Collaborator

Peer Code Review Software

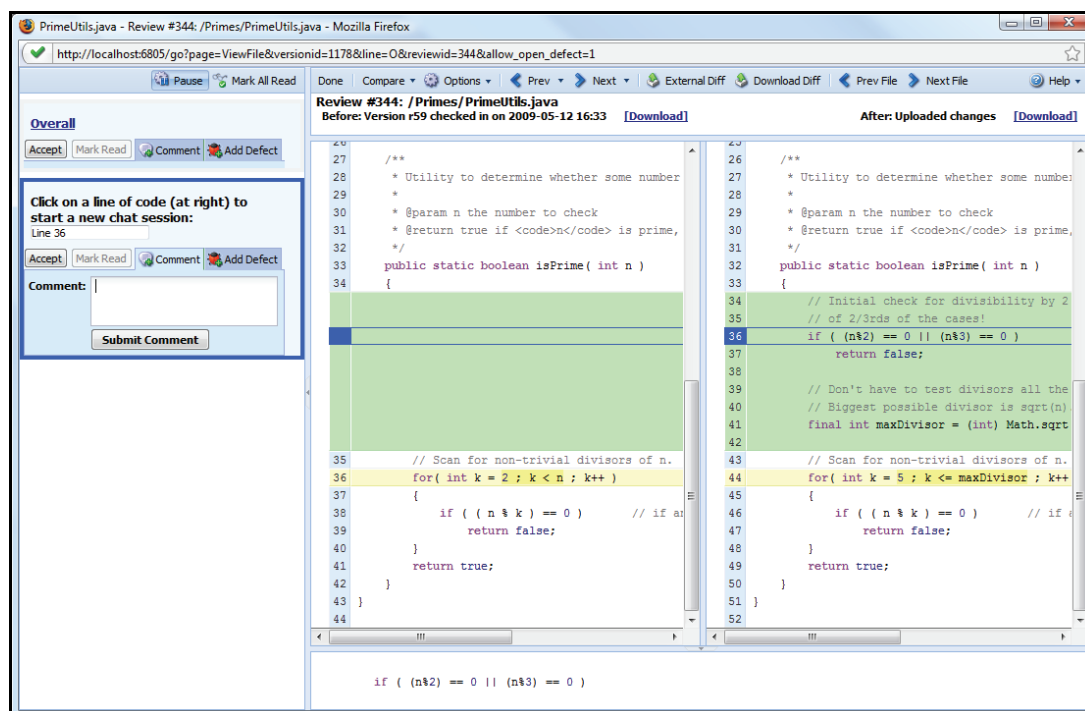
If you could do fast and effective code review, without the usual hassle... why wouldn't you? Introducing lightweight, tool-assisted code review with Smart Bear's Code Collaborator software!

Code review is a long-proven method for finding bugs and mentoring new hires, but developers often reject it because it involves painful meetings and boring busy-work in collecting materials and metrics.

Code Collaborator, a peer code review tool from Smart Bear Software, is changing the way developers write code. Code Collaborator lets your team review code in a fifth of the time needed with formal reviews – without meetings, code print-outs, manually-generated “diffs,” or other painful tasks developers hate. The tool integrates with your development environment to simplify and expedite code review for your team. You'll find bugs early in the product lifecycle (before the product reaches customers or even QA), while the bugs are the least expensive to fix.

With Code Collaborator:

- You don't waste time collecting materials and managing the conversations.
- You can carry on conversations directly on the code.
- The tool's automated audit trails and metrics reports give managers the tools necessary to measure and control the development process.



“Our team balked at doing code reviews at first. Now, we can't imagine programming without Code Collaborator.”

– Brian Toombs,
Software Developer,
Cisco

“The benefits of inspections are so profound that even the smallest outfits must take advantage of the technique.”

– Jack Ganssle, Principal,
Ganssle Group, columnist
for Embedded.com

Learn more:
www.CodeCollaborator.com

Figure 1 (left): Code Collaborator's side-by-side view of code and the chat interface

System Requirements & Integrations

- Browser: IE 6, 7, 8; Firefox 1.x, 2.x, 3.x
- Platform: Windows, Mac OS X, Linux, Solaris, BSD
- Version Control: CVS, Git, Mercurial, Perforce, Subversion, Vault, AccuRev, ClearCase, CMVC, MKS, StarTeam, Surround, Team Foundation Server, and Visual Source Safe.
- Database: MySQL v4.0.18 and higher, MS SQL Server 2000 and higher, Oracle 10 and higher
- Eclipse Plug-In: Eclipse v3.1 and higher
- Server Requirements: At least 3.5GHz processor, 2GB of RAM, 10,000 RPM hard drives (preferably SCSI) and 100GB of hard drive space on a dedicated server. Database may be installed on the same machine as the web server or requires high speed connection (at least 100mbps LAN).

Smart Bear is constantly adding support for additional environments. Contact us at info@smartbear.com to find out what's coming soon.

Code Collaborator's structured "IM-style" framework ties comments directly to the code so that developers can communicate in a way that's natural to them. This environment encourages discussions about how to improve the code and ultimately results in better team communication. For every hour of inspection using Code Collaborator, development teams can save about 20 hours of testing and Q&A.

Saves Time and Improves Productivity

Code Collaborator's click-and-comment, chat-style interface makes code reviews fast, efficient, and even fun! Code authors can package code for review and upload files from version control with a single click. With another few clicks, reviewers are selected and notified.

Reviewers get before/after views of the code juxtaposed for easy comparison. The tool highlights changes between new and existing code, and keeps code differences and conversations matched and correlated – even when line numbers change. Just click to comment directly on the code and conduct multi-threaded conversations at your convenience.

Encourages Collaboration and Builds Teams

Code Collaborator works equally well whether the participants are separated by an ocean or by just a few offices. With a tool to facilitate discussion and learning, your team works together instead of in isolation, learning from each other, finding bugs, and designing the best possible solutions to challenging issues.

```
27 * Utility to determine whether some number
28 *
29 * @param n the number to check
30 * @return true if <code>n</code> is prime,
31 */
32 public static boolean isPrime( int n )
33 {
34     // Initial check for divisibility by 2
35     // of 2/3rds of the cases!
36     if ( (n%2) == 0 || (n%3) == 0 )
37         return false;
38
39     // Don't have to test divisors all the
40     // Biggest possible divisor is sqrt(n).
41     final int maxDivisor = (int) Math.sqrt(n)
```

Figure 2: It's easy to carry on a conversation about a specific line of code.

Code Collaborator provides a safe environment where new team members can begin to contribute immediately, secure in the knowledge that their code will be reviewed and they won't break anything. This structure is ideal for both same-office and multi-continental teams, and it helps bridge the communication gap with off-shore development sites.

Supports Best Practices and Company Processes

Smart Bear Software has spent years researching code review and gathering feedback from customers. Our software embodies and encourages development best practices so that your team can reap the benefits without extensive study and training. Code Collaborator works well for all types of development methodologies – waterfall, agile, or other – and it works with all types of code. It also fits into *your* process, rather than requiring you to change your process to accommodate it.

“Code Collaborator is an excellent tool. By making it possible for reviewers to fit their reviews into time they have available (late at night, early in the morning, etc.), reviewers are able to do a thorough and contemplative job. The integration with Perforce is seamless. It is very easy to create and manage reviews. And [Smart Bear] has been extremely responsive to feedback.”

- Jim Showalter, Software Developer, Intuit

- To keep your team focused on the code and off of process tedium, Code Collaborator automatically captures review metrics. No stopwatches or line-counters are required to capture key process details.
- The tool creates an audit trail of all conversations and metrics, including bugs found, amount of time spent in the review per person, speed of review, speed of finding defects, and number of defects per 1000 lines of code (defect density) – all without any effort from developers. And it creates both standard and custom reports on the code review process.
- Code Collaborator's built-in structure and workflow automatically direct your team towards best practices for code review. System administrators can customize the workflow, rules, and fields. The tool's audit trail and reporting features allow development groups to comply with regulations such as Sarbanes-Oxley, security audits, the FDA's General Principles of Software Validation, and with corporate initiatives such as CMM/CMMI and PSP/TSP that require code review.

Key Features

- Automated file gathering and packaging for reviews
- Lets you review source code files and other file types too (PDF, images, and URLs)
- Side-by-side or over/under “diff” viewer highlights before/after changes and ties review comments to code
- Combined real-time chat and newsgroup-style interface makes it easy to point out defects, discuss code, and follow conversation threads
- Allows upload of multiple versions of a file to a single review; correctly tracks comments and defects even if the line numbers change
- Captures code review metrics, generates customizable reports and provides an audit trail to document code changes
- Customizable, enforceable workflow supports team processes and facilitates everything from informal, small reviews to formal, multi-reviewer inspections
- Reviewers can verify fixes before declaring review complete
- Integrated with development tools and includes multiple clients (web browser, command line, cross-platform GUI, and Eclipse). Also integrated with more than a dozen version control tools as well as bug-tracking servers and other software management systems.
- Easy to extend with pre-configured triggers and a full-featured command line utility




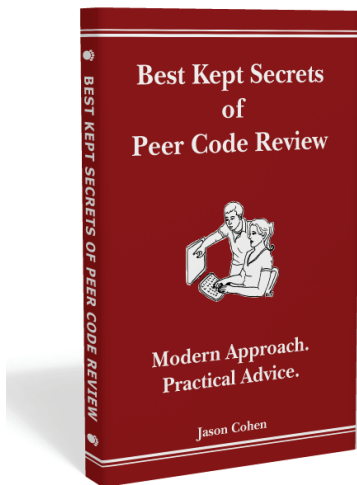
Defect Log					
	ID	Creator	Severity	Type	Description
 [Mark Fixed] [Delete]	D64	BF	Major	Algorithm	handle cases n==2,3 /Primes/PrimeUtils.java (Line 36)
 [Mark Open]	D65	BF	Major	Algorithm	Round up instead of down /Primes/PrimeUtils.java (Line 41)
 [Delete]	D66	GS	Minor	Documentation	add javadoc comments /Primes/Prime.java (Line 4) Tracked externally as case 1234

Figure 3: Code Collaborator tracks all defects and ensures that reviewers verify all fixes before they complete the code review.

FREE BOOK

Best Kept Secrets of Peer Code Review



We Wrote the Book on Code Review

In 2006, to further expand our knowledge of code review best practices, Smart Bear enlisted the help of Cisco Systems to conduct the world's largest study of peer code review ever published, encompassing 2500 code reviews, 50 programmers, and 3.2 million lines of code. It took a whole book to share our many findings with the world: *Best Kept Secrets of Peer Code Review*. Written to help development teams implement best practices for code reviews, the book describes not only the Cisco study details, but Smart Bear's years of code review study and input from thousands of programmers in the field.

The Cisco study investigated the effectiveness of lightweight code review, which uses a more abbreviated process than formal and time-consuming Fagan-style inspections. We found lightweight code review to be equally effective at finding bugs, but substantially more efficient, with reviews taking one-fifth the time of their heavyweight counterparts.

Lightweight code review is more efficient when assisted by tools. Code Collaborator was the first code review tool available, and it remains the most advanced. The software fundamentally changes the way developers write code and interact with each other. Now, with this tool at their disposal, programmers can write better code with fewer bugs. Code Collaborator helps make sure that cell phones work, pacemakers never stop, and your John Madden NFL game doesn't glitch.

Request your free copy at:
www.CodeReviewBook.com

When code review is easy and fun, it actually gets done.

For more information on how it can help improve your software quality, contact Smart Bear Software:

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www.CodeCollaborator.com

www.SmartBear.com

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Smart Bear Software -- the experts in peer code review.