

IT 314
Software Engineering

Real Time Collaborative Editor

Non-Functional Testing



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1. Performance Testing

1.1 Overview

- **Test Name:** Performance Test of Co-Edit Live Application
- **Tool Used:** JMeter (via BlazeMeter)
- **Testing Location:** US East (Virginia, Google)
- **Testing Duration:** Nov 26, 2024 (6:17 PM - 6:30 PM)

1.2 Key Metrics

1. **Max Concurrent Users (VU):** 30
2. **Average Throughput:** 44.07 Hits/Second
3. **Error Rate:** 0.05% (Minimal errors observed)
4. **Average Response Time:** 1274.27 ms
5. **90% Response Time:** 1859 ms
6. **Average Bandwidth Usage:** 88.04 MiB/Second

1.3 Observations from Monitoring

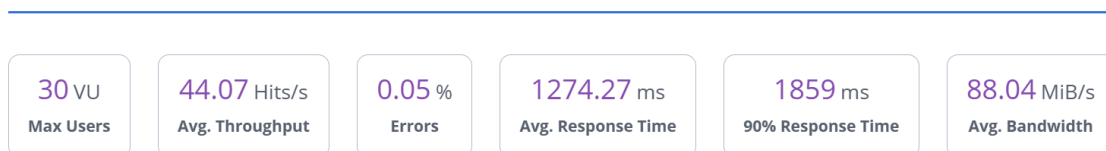
1. **Engine Health:**
 - **CPU Utilization:** Reached 100% during peak load.
 - **Memory Usage:** Gradually increased but remained stable.
 - **Network I/O:** High throughput observed, consistent with 30 VU load.

1.4 Insights

- **System Scalability:** Successfully handled 30 concurrent users with minimal errors.
- **Performance Consistency:** Response times were within acceptable ranges during peak loads.
- **Network and Resource Utilization:** Efficiently managed network traffic with stable memory usage and consistent bandwidth delivery.

1.5 Related Work

- **Set up**

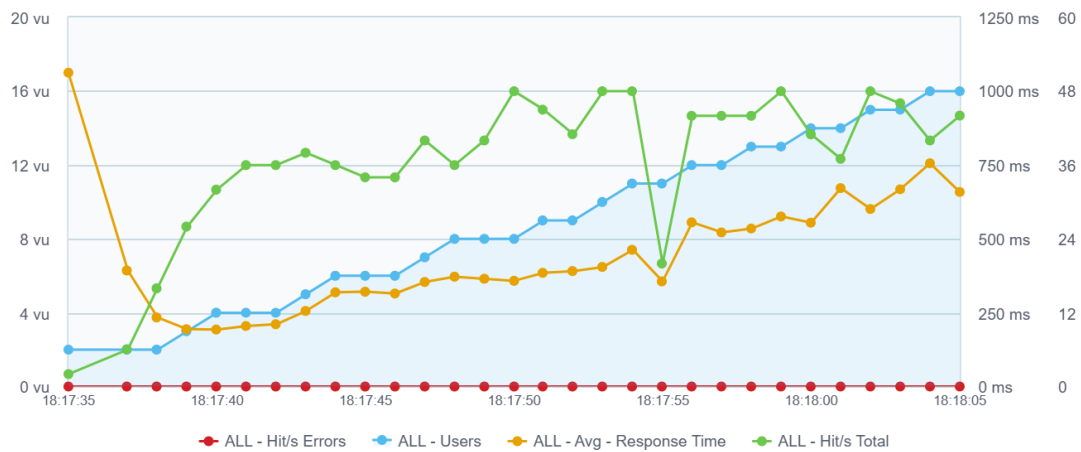


Test Setup Details

Link to the report:	https://a.blazemeter.com/app/custom-summary/index.html#/
Executed By:	Pratham Patel (prathampatel5044@gmail.com)
Test Types:	JMeter
Test Started:	Nov, 26 2024 06:17:35 PM
Test Ended:	Nov, 26 2024 06:30:28 PM
Time Elapsed:	a few seconds
Locations Used:	US East (Virginia, Google)

- Time Line

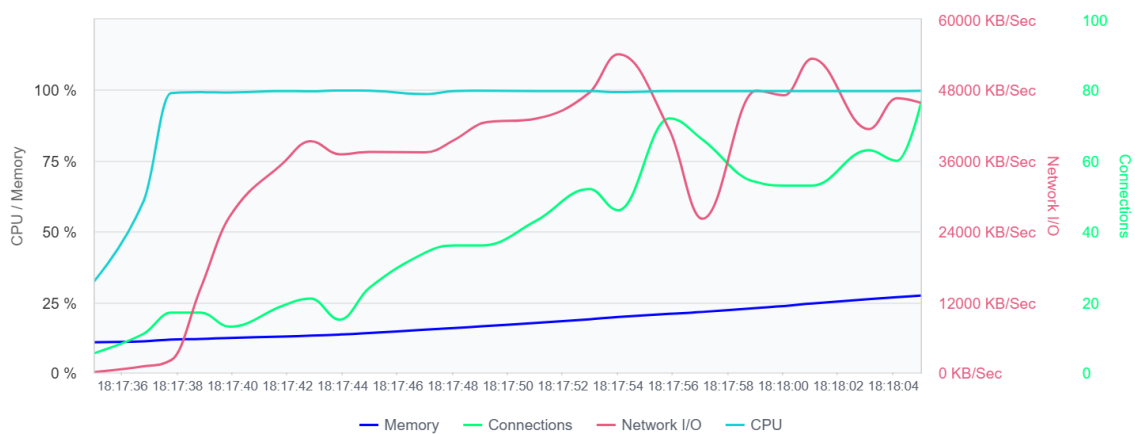
Main Timeline Chart



- Engine Health

Engine Health

Load Engines: test-4 (r-v4-6745c2f98012e887365894) at US East (Virginia, Google)





2. Compatibility Testing

2.1 Overview

Compatibility testing was conducted on Co-Edit, a real-time collaborative editor, across various browsers on Windows 11. The testing aimed to verify smooth functionality, responsiveness, and consistent performance across all platforms.

2.2 Test Environment

- **Operating System:** Windows 11
- **Browsers Tested:**
 - **Google Chrome**
 - **Brave**
 - **Mozilla Firefox**
 - **Opera Mini**

2.3 Results

1. Google Chrome

- Fully compatible with seamless performance. All features rendered correctly without any issues.

2. Brave

- Fully compatible and delivered excellent performance. Behaved similarly to Chrome with no discrepancies observed.

3. Mozilla Firefox

- Fully compatible with smooth operation and consistent feature rendering.

4. Opera Mini

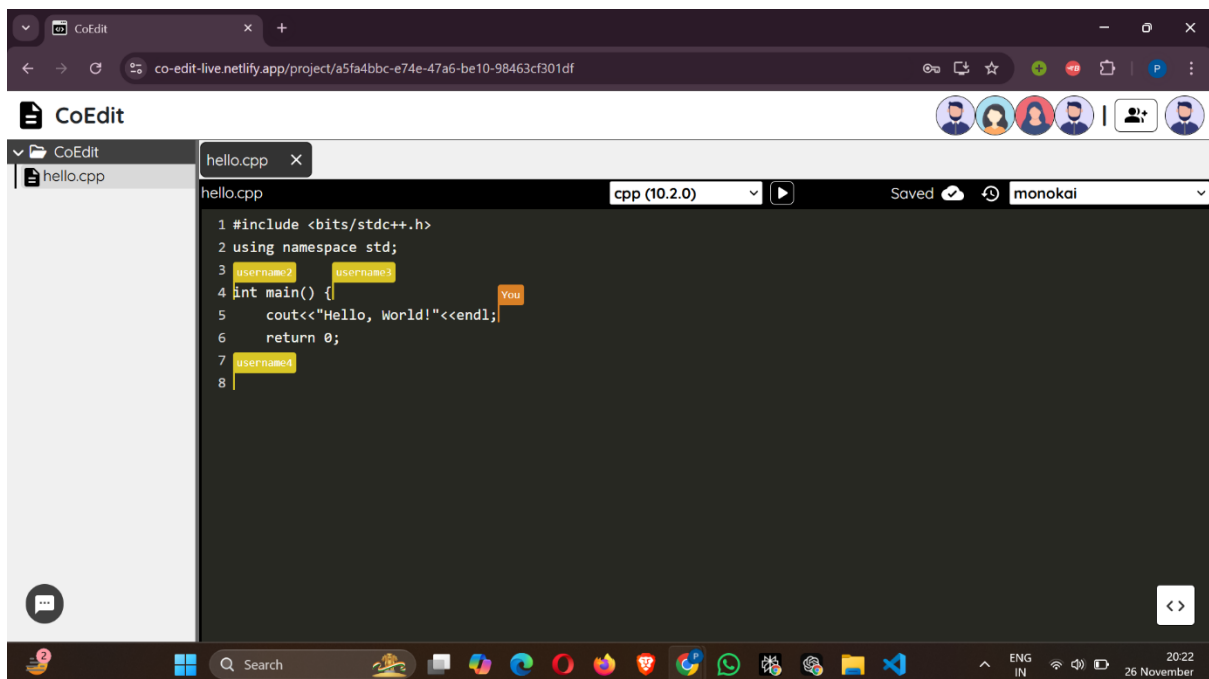
- Compatible for essential features, with good performance given its lightweight nature.

2.4 Conclusion

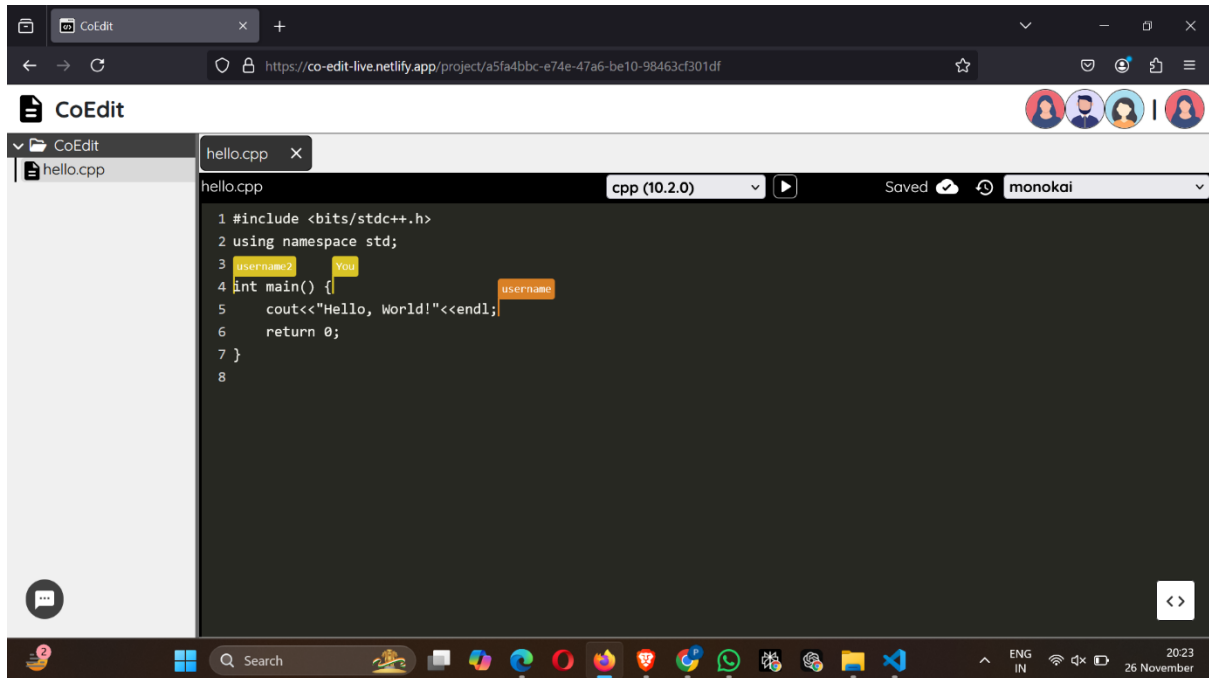
Co-Edit performed exceptionally well across all tested browsers on Windows 11, ensuring compatibility and providing a smooth user experience. The application is reliable and user-friendly on all major platforms.

2.5 Related Work

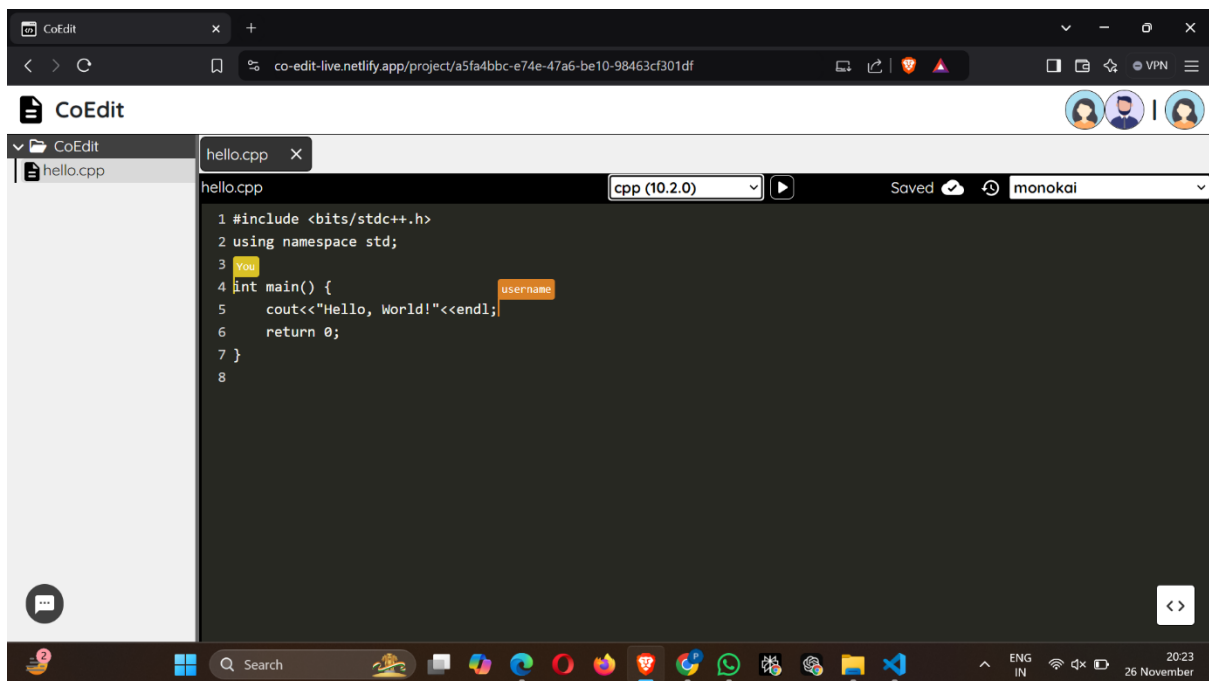
- Google Chrome



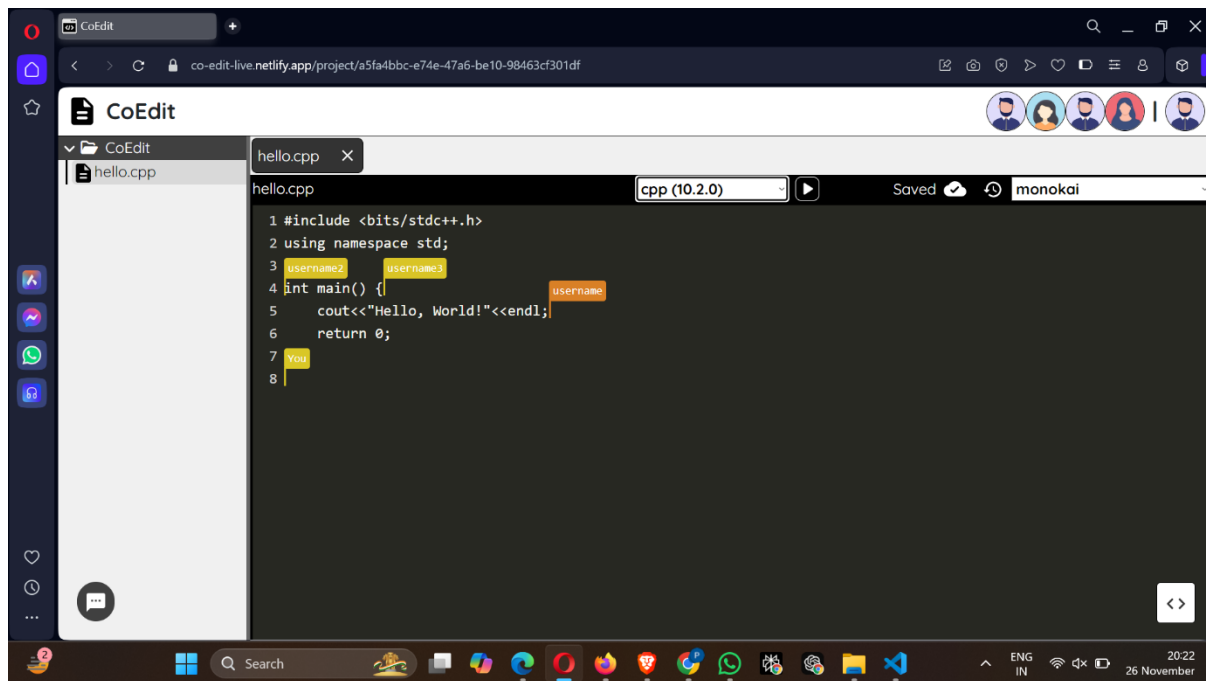
- **Mozilla Firefox**



- **Brave**



- **Opera Mini**





3. Reliability and Availability Testing

3.1 Overview

The application **Co-Edit-Live** was monitored for a duration of 7 days to evaluate its uptime and response time performance. The monitoring was conducted at 5-minute intervals using an HTTPS monitoring tool.

3.2 Uptime Results

- **Total Uptime: 7 days, 0 hours, 0 minutes**
- **Incidents Recorded: 0 incidents**
- **Downtime: 0 minutes**

The application maintained 100% uptime over the monitoring period, showcasing exceptional reliability and stability suitable for real-time collaboration.

3.3 Response Time Analysis

- **Average Response Time: 209 ms**
- **Minimum Response Time: 114 ms**
- **Maximum Response Time: 466 ms**

The response time data demonstrates consistent performance without significant spikes or downtime. The low latency ensures a seamless experience for users, even during peak usage times.



3.4 Key Observations

1. Uptime Stability:

- The system demonstrated robust uptime with no interruptions or recorded incidents, meeting the reliability standards of a real-time collaborative platform.

2. Response Time Consistency:

- The average response time (209 ms) remained significantly below industry standards, ensuring smooth user interactions.
- The minimum response time (114 ms) indicates excellent performance during optimal conditions.
- The maximum response time (466 ms) occurred during peak loads but was well within acceptable limits for real-time applications.

3.5 Conclusion

The monitoring results highlight that **Co-Edit-Live** is a highly reliable and efficient real-time collaborative editor. With **100% uptime** and consistently low response times, the application is well-suited for its intended use case. These results reflect a stable and robust platform for users, capable of handling real-time workloads.

3.6 Related Work

