****

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

**AMRITA VISHWA VIDYAPEETHAM**Amritapuri Campus (INDIA)

**DISTRIBUTED CALENDER**

**AND**

**EVENT SCHEDULER**

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**Project Abstract**

Managing events and scheduling across multiple users in a distributed environment presents significant challenges, including synchronization issues, data consistency, and real-time updates. The Distributed Calendar & Event Scheduler aims to address these challenges by providing a decentralized, fault-tolerant, and scalable solution for event management.

This study explores the development of a distributed system that allows multiple users to schedule, modify, and track events in real time while ensuring consistency across nodes. The system leverages distributed databases for data storage, consensus mechanisms for conflict resolution, and event-driven architectures for asynchronous updates. A hybrid approach combining vector clocks and Lamport timestamps is implemented to maintain event ordering and prevent conflicts. Additionally, load balancing techniques are applied to optimize performance across distributed nodes.

The evaluation focuses on system reliability, response time, and fault tolerance. Simulations and real-world testing demonstrate that the proposed system minimizes conflicts, ensures high availability, and efficiently synchronizes events across multiple devices. The solution is expected to enhance collaborative scheduling by providing seamless integration with third-party services while maintaining low latency and high fault tolerance.

This research contributes to the field of distributed computing and event scheduling by presenting a robust model that addresses the key limitations of traditional centralized calendar systems, making it ideal for enterprise use and large-scale distributed teams.