created three key components for performance monitoring and optimization:

1. **performance-dashboard.js**:
   * Real-time metrics visualization
   * WebSocket-based updates
   * System, application, and database metrics
   * Alert management
   * Threshold configuration
2. **performance-optimizer.js**:
   * Rule-based optimization engine
   * Query optimization
   * Cache strategy optimization
   * Memory usage optimization
   * Optimization history tracking
3. **real-time-monitor.js**:
   * Event-based real-time monitoring
   * Comprehensive metrics collection
   * Automated issue detection
   * Resource usage tracking
   * Performance analysis

Key features:

1. Real-time Monitoring:
   * CPU and memory usage
   * Network metrics
   * Application performance
   * Database query performance
   * Cache hit rates
2. Performance Dashboard:
   * Real-time metrics visualization
   * Alert management
   * Threshold configuration
   * Historical data viewing
   * WebSocket updates
3. Optimization Engine:
   * Query optimization rules
   * Cache strategy optimization
   * Memory usage optimization
   * Automated optimization triggers
   * Optimization history tracking
4. Alert System:
   * Performance thresholds
   * Resource usage alerts
   * Error rate monitoring
   * Queue size monitoring
   * Real-time notifications