**Movie Ticket Booking System CLI Summary**

**Overview:**

The CLI is designed to simulate a real-time movie ticket booking system. It handles ticket creation by vendors, ticket purchases by customers, and real-time monitoring of the system's activities. Key features include input validation, thread-based simulation, logging, and monitoring.

**Key Features and Components**

1. **System Configuration:**
   * Prompts the user for configuration settings such as:
     + Total number of tickets.
     + Ticket release rate.
     + Customer retrieval rate.
     + Number of vendors and customers.
   * Validates input to ensure correctness.
2. **Command Execution:**
   * Users can start the simulation by typing start.
   * The system actively runs vendor and customer threads to simulate real-time ticket booking.
3. **Real-Time Monitoring:**
   * Monitors log files for updates using a readFile method.
   * Displays ticket creation, ticket purchase, and system updates in real-time.
4. **Producer-Consumer Pattern:**
   * Vendors act as producers, adding tickets to a shared pool (ticketPool).
   * Customers act as consumers, purchasing tickets from the pool.
   * Proper synchronization (wait/notify) ensures smooth thread interaction.
5. **Thread Management:**
   * Vendor and customer threads dynamically update the shared ticket pool.
   * Threads gracefully terminate once all tickets are sold or the simulation ends.
6. **Logging:**
   * All actions (ticket creation, ticket purchase, and system messages) are logged to a file.
   * Logs include:
     + Tickets created by vendors.
     + Tickets purchased by customers.
     + Notifications when tickets are unavailable or all tickets are sold.
7. **Error Handling:**
   * Handles interruptions and ensures threads exit gracefully.
   * Ensures log file existence and proper cleanup after simulation.

**Demonstration Workflow**

1. **Start the Program:**
   * Run the CLI program, which prompts you for system configuration.
2. **Input Configuration:**
   * Enter valid inputs for total tickets, release rates, and number of participants.
3. **Start Simulation:**
   * Type start to begin the simulation.
   * Vendors and customers operate concurrently, with tickets being added and purchased dynamically.
4. **Monitor Logs:**
   * The readFile method continuously monitors the log file and displays updates.
   * Outputs include:
     + Tickets created and added by vendors.
     + Tickets bought by customers.
     + Notifications when no tickets are available or all tickets are sold.
5. **End Simulation:**
   * Once all tickets are sold, the system displays a summary and exits gracefully.

**Sample Log Output**

=== Configuration Summary ===

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Total tickets: 100

Ticket release rate: 2

Customer retrieval rate: 1

Number of vendors: 3

Number of customers: 10

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Total tickets created: 1

[Vendor 1] added: Ticket{ticketId='12345', movieTitle='Test Movie', date=2024-12-11, time=23:11:53, price=1500}

Available tickets: 1

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[Customer 5] bought: Ticket{ticketId='12345', movieTitle='Test Movie', date=2024-12-11, time=23:11:53, price=1500}

Available tickets: 0

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No Tickets available. Waiting ...

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// Have a code between this //

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Total tickets created: 100

[Vendor 3] added: Ticket{ticketId='0ea92614-f42c-4d07-8072-d24e19ab950c', movieTitle='Test Movie', date=2024-12-15, time=11:35:47.588701100, price=2836}

Available tickets: 2

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[Customer 1] bought: Ticket{ticketId='2a1c5339-3a80-40fc-ad19-4365f60f5ed6', movieTitle='Test Movie', date=2024-12-15, time=11:35:47.581362200, price=932}

Available tickets: 1

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[Customer 2] bought: Ticket{ticketId='0ea92614-f42c-4d07-8072-d24e19ab950c', movieTitle='Test Movie', date=2024-12-15, time=11:35:47.588701100, price=2836}

Available tickets: 0

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All tickets have been sold.

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