Detailed Requirements

Functional Requirements

Stakeholder Roles and Access

User

The system enables individual users to manage their time through the following capabilities:
- Account creation and management with secure authentication
- Weekly and daily schedule management supporting fixed, flexible, and fluid events
- Real-time activity tracking integrated with scheduled events
- Access to personal analytics and reports about time usage patterns
- Customization options for event categories, colors, and preferred day off
- Profile management including preferences and notification settings

Administrator

System administrators maintain and oversee the platform through:
- User account management and access control
- System performance monitoring and metrics analysis
- Access to comprehensive system logs and error reports
- Database maintenance and backup management
- System-wide configuration and settings management

Schedule Management System

Weekly View Features

The weekly calendar view serves as the primary planning interface, offering:

A comprehensive 7-day grid starting from Sunday that displays all time slots. Users can interact with events in multiple ways:
1. Direct creation through the '+' button, empty slot clicking, or time period dragging
2. Event categorization into three types:
    - Fixed events with specific day and time (e.g., lectures)
    - Flexible events with fixed day but adjustable time (e.g., workouts)
    - Fluid events that can move within the week

The system supports event management through:
    - Drag-and-drop functionality for easy rescheduling
    - Week-to-week navigation
    - Recurring event creation with daily, weekly, or custom patterns
    - Visual distinction between event types through color coding
    - Conflict detection and resolution assistance

Daily View Features

The daily view provides detailed schedule management through:

A chronological display of events that enables:
1. Detailed time slot visualization
2. Quick event editing through direct clicking
3. Drag-and-drop time adjustments
4. Clear conflict and overlap indication
5. Easy navigation between days within the current week

Time Tracking System

Timer Interface

The time tracking interface provides real-time activity monitoring through:

A robust tracking system that offers:
- Intuitive start/stop controls for activity tracking
- Prominent display of current activity
- Integration with planned events from the schedule
- Support for manual entry of unplanned activities
- Real-time editing capabilities
- Retroactive adjustment options

Activity Management

The activity management system creates a seamless connection between scheduled events and tracked activities through:

Schedule Integration

The system maintains continuity between planning and tracking by:
1. Detecting and suggesting current scheduled events for tracking
2. Maintaining consistent naming and categorization across systems
3. Managing activity states (planned, in progress, completed)

Unplanned Activities

The system handles unexpected activities by:
1. Supporting immediate tracking of unplanned work
2. Offering category creation and future scheduling options

Historical Data Management

The system maintains comprehensive activity records by:
1. Supporting analysis and reporting
2. Enabling pattern recognition for future scheduling
3. Providing accessible historical data

Analytics and Reporting

Data Visualization

The system provides insight through multiple visualization types:
1. Time distribution pie charts
2. Planned versus actual comparison charts
3. Trend analysis over time
4. Daily and weekly statistics

Report Generation

The system creates comprehensive reports including:
1. Detailed activity analysis
2. Efficiency metrics
3. Time allocation summaries
4. Data exports in standard formats

Non-Functional Requirements

Performance

The system maintains responsive operation through:
1. Page loads within 2 seconds
2. Calendar operations completed within 1 second
3. Real-time tracking updates within 1 second
4. Support for 1000 concurrent users
5. Database query completion within 500ms

Reliability

The system ensures dependable operation through:
1. 99.9% uptime maintenance
2. Daily data backups
3. One-year backup retention
4. 30-second crash recovery
5. Zero data loss guarantee

Security

The system protects user data through:
1. HTTPS communication
2. Password hashing
3. Login attempt limiting

Usability

The system ensures accessibility through:
1. Responsive design implementation
2. Cross-browser compatibility
3. Three-click access to major functions
4. Clear error messaging

Maintainability

The system supports efficient maintenance through:
1. Clean code principles
2. Modular architecture
3. Comperhansive documentation
4. Containerized development environment