graph TB  
 %% Styles  
 classDef user fill:#f9d71c,stroke:#333,stroke-width:2px  
 classDef system fill:#f8f9fa,stroke:#333,stroke-width:1px,color:#333  
 classDef usecase fill:#e9f5fe,stroke:#333,stroke-width:1px,color:#333,rx:5,ry:5  
   
 %% Actors  
 user((User)):::user  
   
 %% System boundary  
 subgraph ProMoodTracker["Pro Mood Tracker System"]  
 %% Use Cases - Authentication & User Management  
 login[Login/Authentication]:::usecase  
 register[Register Account]:::usecase  
 manageProfile[Manage User Profile]:::usecase  
   
 %% Use Cases - Core Functionality  
 recordMood[Record Mood Entry]:::usecase  
 trackFactors[Track Influencing Factors]:::usecase  
 viewHistory[View Mood History]:::usecase  
 viewInsights[View Mood Insights & Trends]:::usecase  
   
 %% Use Cases - Engagement Features  
 manageRewards[Earn & Manage Rewards]:::usecase  
 customizeApp[Customize App Theme]:::usecase  
 setReminders[Set Mood Tracking Reminders]:::usecase  
   
 %% Use Cases - Data Management  
 exportData[Export Mood Data]:::usecase  
 backupData[Backup & Restore Data]:::usecase  
 end  
   
 %% Relationships  
 user --> login  
 user --> register  
 user --> manageProfile  
 user --> recordMood  
 user --> trackFactors  
 user --> viewHistory  
 user --> viewInsights  
 user --> manageRewards  
 user --> customizeApp  
 user --> setReminders  
 user --> exportData  
 user --> backupData  
   
 %% Dependencies  
 login -.-> viewHistory  
 login -.-> viewInsights  
 login -.-> recordMood  
 login -.-> manageProfile  
 recordMood -.-> trackFactors  
 recordMood -.-> manageRewards  
 viewHistory -.-> viewInsights  
   
 %% Extended  
 customizeApp -.-> "Change Colors"  
 customizeApp -.-> "Toggle Dark Mode"  
 recordMood -.-> "Add Notes"  
 recordMood -.-> "Rate Mood"  
 recordMood -.-> "Add Activities"  
 trackFactors -.-> "Track Weather"  
 trackFactors -.-> "Track Activities"  
 viewInsights -.-> "View Correlations"  
 viewInsights -.-> "View Patterns"

## Figure 4.1: Core System Use Case Diagram

The Core System Use Case Diagram for the Pro Mood Tracker application illustrates the primary interactions between the user and the system. This diagram captures the essential functionalities that form the backbone of the application.

### Key Components

1. **User Authentication & Management**:
   * The user can register for a new account, login to an existing account, and manage their profile settings.
   * These foundational actions provide the security framework for the application.
2. **Core Mood Tracking Functionality**:
   * Users can record mood entries, which is the central feature of the application.
   * Mood entries can be enhanced with notes, activity tracking, and other influencing factors.
   * Users can view their mood history and access insights about their mood patterns.
3. **Engagement Features**:
   * The reward system encourages consistent usage by providing achievements and badges.
   * Customization options allow users to personalize the application’s appearance.
   * Reminders help users maintain a consistent mood tracking routine.
4. **Data Management**:
   * Users can export their mood data for external analysis or record-keeping.
   * Backup and restore functionality ensures data persistence across devices.

### Relationships and Dependencies

The diagram shows dependencies between use cases, indicated by dotted lines. For example: - Login is required before accessing most other features. - Recording moods enables the tracking of influencing factors and earning rewards. - Viewing history is a prerequisite for accessing deeper insights and trends.

This use case diagram serves as a blueprint for the application’s functionality, highlighting the user-centered design approach where all features are accessible to the user with clear relationships between dependent functions.