# REQUIREMENTS AND UML DOCUMENT

Hamza Damiel

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## Functional Requirements

1. **Login:**
    - Registered Spotify users can log in securely using their credentials.
2. **Dashboard Access:**
    - Users must have access to the dashboard upon successful login.
3. **Terms and Conditions Consent:**
    - Users must provide consent to terms and conditions before accessing the dashboard.
4. **Statistics Display:**
    - The dashboard should display statistics, including top artists, tracks, and genres over a specified time.
5. **Music Discovery and Search:**
    - Users should be able to discover music recommendations based on their listening history.
    - Recommendations should be searchable and filterable.
6. **User Profile Management:**
    - Users must be able to view and edit their profiles.
    - Profile edits should include changing profile pictures and personal information.
7. **Data Visualization:**
    - The platform should present data insights through charts and graphs.
    - Visualisations should include listening trends and favourite genres.
8. **Music Recommendations:**
    - Users should receive personalized music recommendations based on their listening history.
9. **Playlist Management:**
    - Users should be able to create, edit, and manage playlists within the platform.
    - Changes made to playlists should sync with their Spotify accounts.
10. **Settings Customization:**
    - Users must have options to customize the platform's theme.
    - Users should be able to send feedback for improvements.
    - Access to terms of service and privacy policy should be available.
    - Users should have the ability to log out from their accounts.

## Non-Functional Requirements

1. **Performance:**
    - The platform should respond quickly to user interactions.
    - Data visualizations should load efficiently.
2. **Security:**
    - User data should be stored securely and protected from unauthorized access.
    - OAuth 2.0 should be used for secure user authentication.
3. **User Experience (UX):**
    - The platform should provide an intuitive and user-friendly interface.
    - Mobile responsiveness is required for seamless access on various devices.
4. **Scalability:**
    - The system should be designed to handle an increasing number of users and data over time.
5. **Data Privacy:**
    - The platform must comply with data privacy regulations and Spotify's terms of service.
6. **Accessibility:**
    - The platform should be accessible to users with disabilities, adhering to accessibility standards
7. **Reliability:**
    - The system should be always available and reliable for users.
8. **Testing:**
    - Rigorous testing should be conducted to ensure all features operate smoothly and meet user expectations.
9. **Documentation:**
    - Comprehensive user documentation should be provided, including guides on using platform features.
10. **Data Backup and Recovery:**
    - Regular automated backups of user data should be performed.
    - A disaster recovery plan should be in place to minimize data loss in case of system failures.

## Sections

**Homepage:** The main landing page that provides an overview of the platform's features and encourages users to use the service

**User Login:** The login page where registered users of Spotify can enter their credentials to access the dashboard.

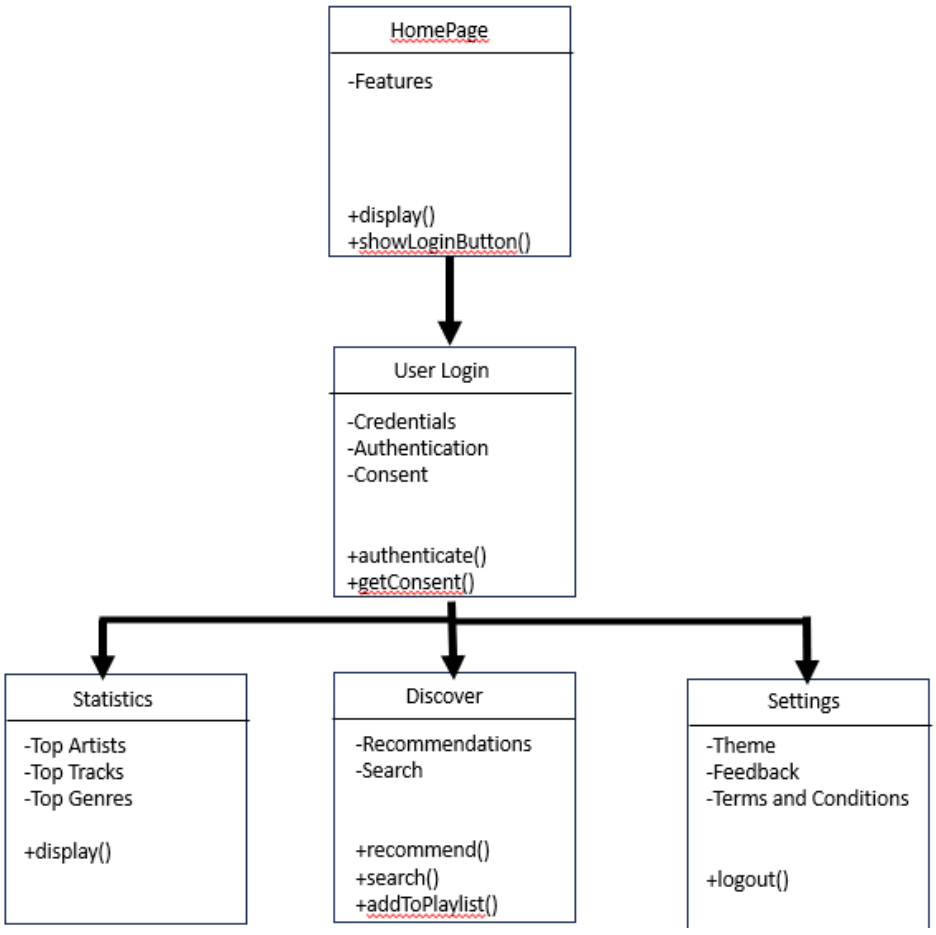
**Terms and Conditions**: Page just before user logs in where they consent to sharing data

**Statistics:** Display the main statistics (eg top artists, tracks, genres over a time period)

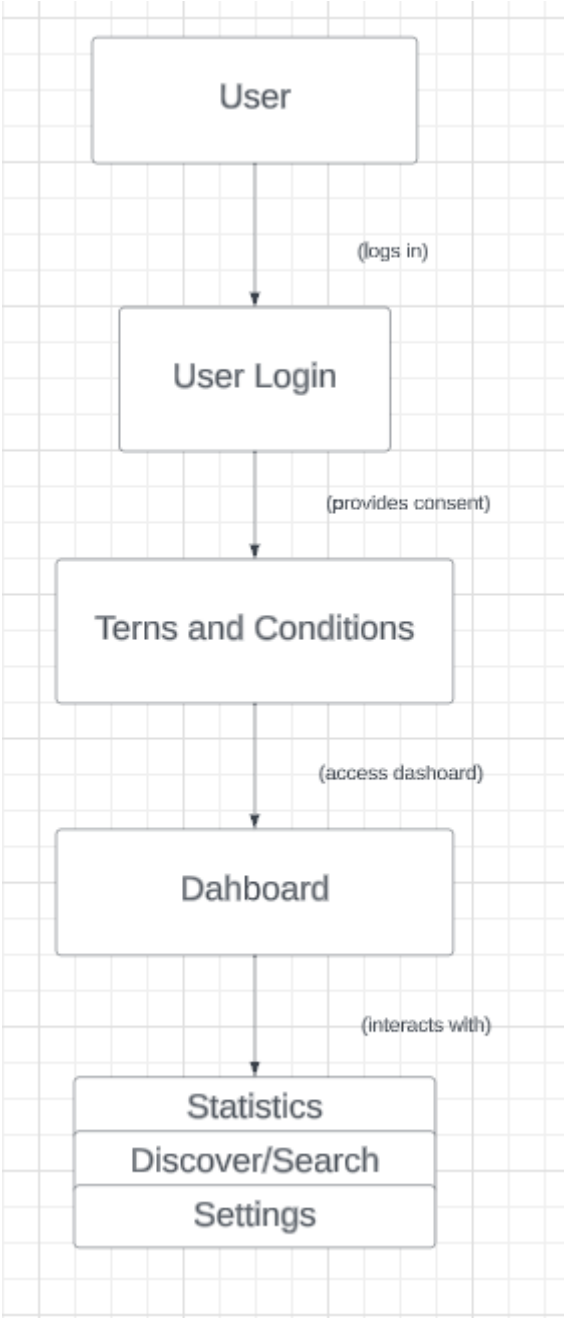
**Discover/Search**: Find recommendations based on the music that the user listens to and allow these to be added to their playlists

**Settings**: Provides options for changing the theme, sending feedback, accessing terms and privacy policies, and logging out.

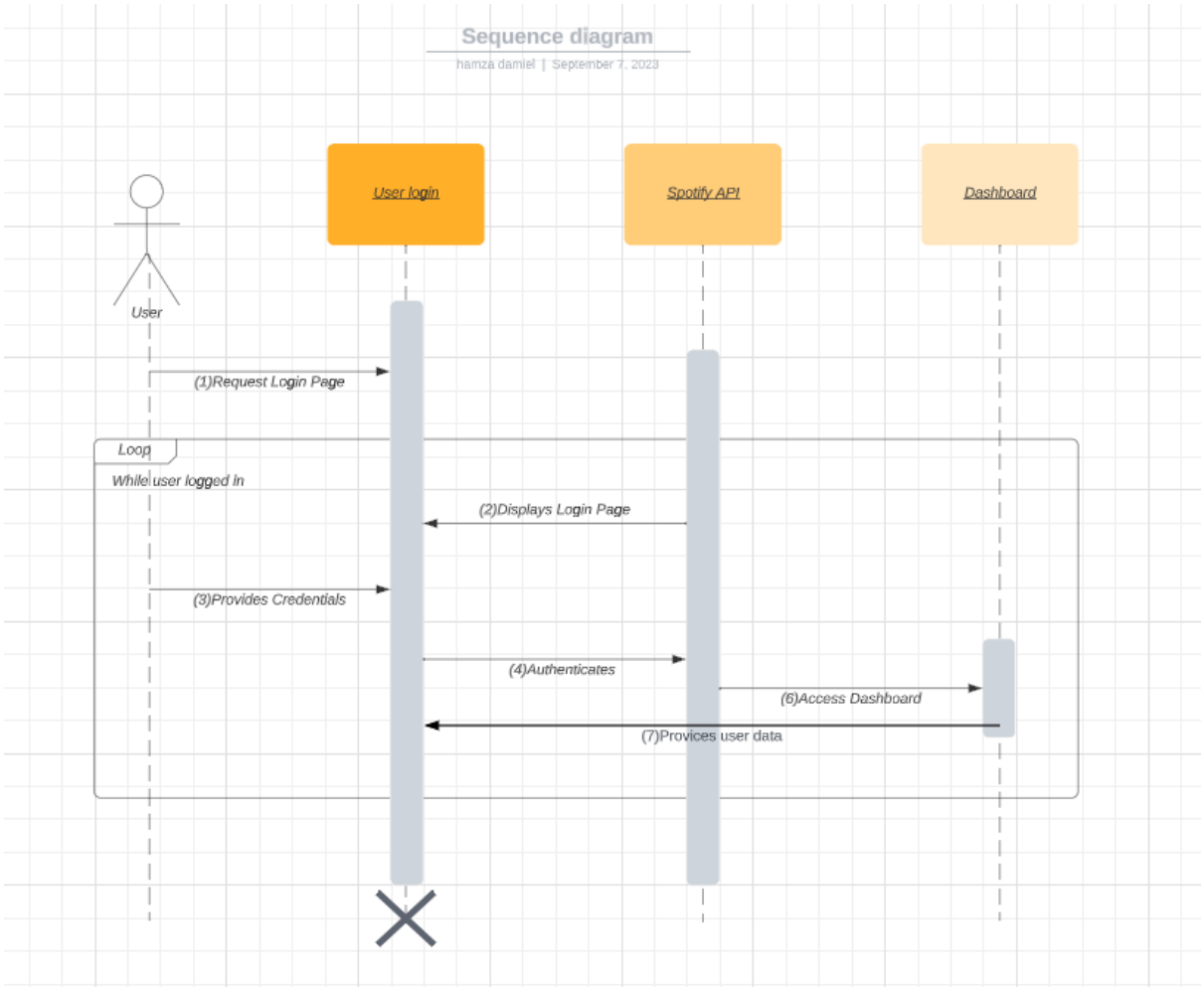
## Class Diagram



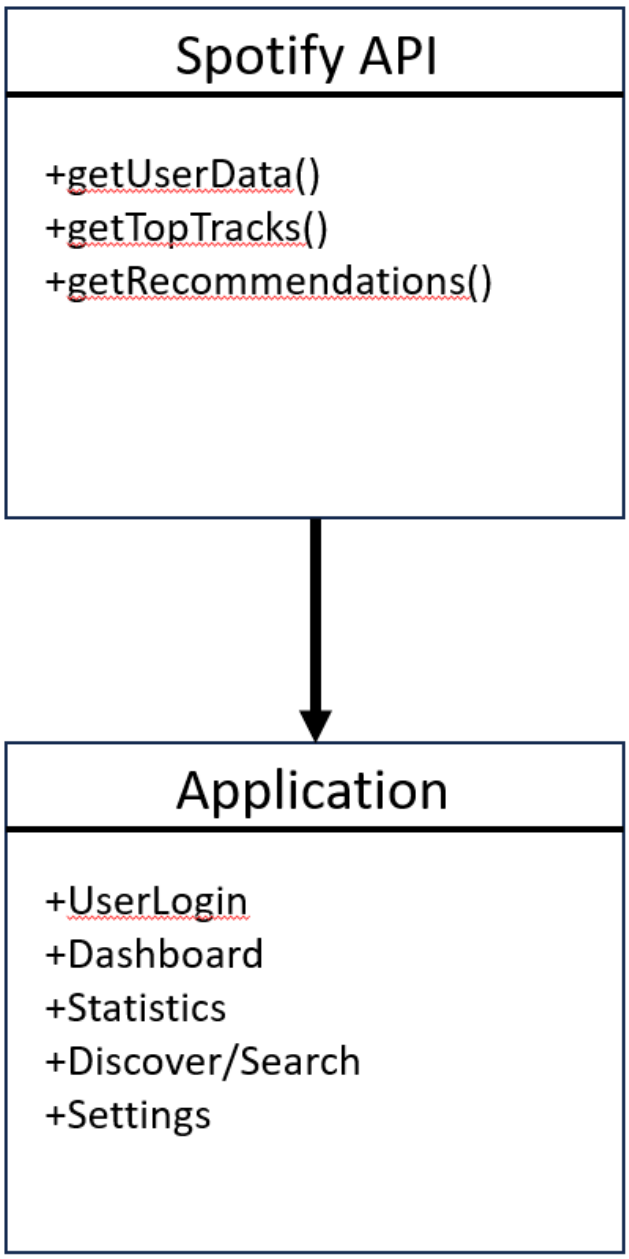
## Functional Diagram



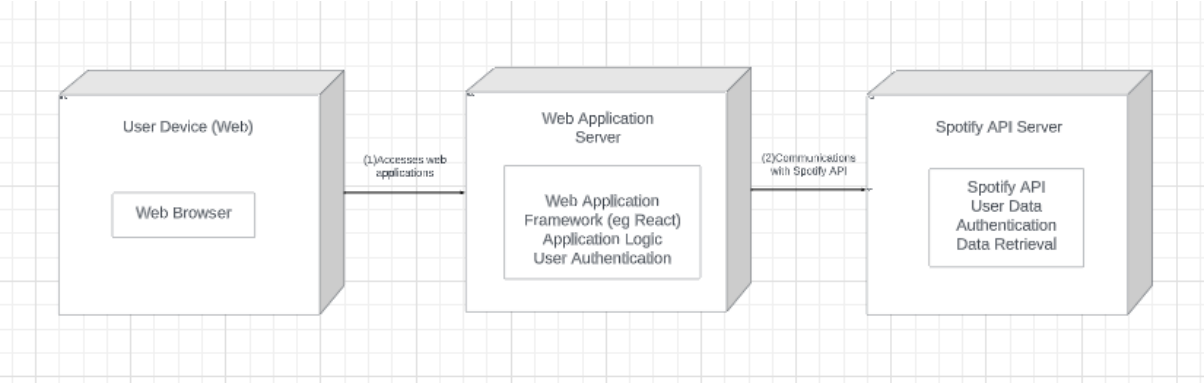
## Sequence Diagram



## Package Diagram



## Deployment Diagram




## Use Case