**Feasibility Study**

ArenaX aims to provide an advanced booking system for a variety of sports and fitness facilities, offering an integrated solution for indoor games (carom, chess, table tennis), outdoor games (swimming, football, tennis), and fitness activities (gym). The system will enable registered users to manage their bookings, view past and future reservations, and organize schedules with a built-in calendar.

**Technical Feasibility**

* **Software Requirements**:
  + Frontend framework like HTML for structuring web pages, CSS for styling and responsive design, JavaScript is being used for a responsive and user-friendly interface.
  + Backend technologies like PHP is used to support complex booking and scheduling logic.
  + Database systems like MySQL for managing user and activity data and to store user profiles, bookings, payment history, membership details, and feedback.

**Operational Feasibility**

**Target Audience**

* **Primary Users:** Members of the ArenaX Club, including families, individuals, and fitness enthusiasts interested in recreational and fitness activities. The members who are a part of the membership plans according to their plans they can also book for guest users from outside who are not registered users.
* **Age Groups:** Activities are segregated by age appropriateness to ensure a safe and enjoyable experience for all users. Registration will be possible only from age 7 and above. For certain games also age restrictions have been applied for safety.
* **Geographic Scope:** ArenaX is initially localized for the community around ArenaX Club, with potential for regional expansion.
* **Ease of Access**: Responsive design for seamless use across devices (mobile, tablet, desktop) makes it possible for the registered users to register or login and make their booking from anywhere at any time. ArenaX provides a user-friendly interface for effortless navigation through booking, calendar features and payments for the registered users bookings.
* **Key Functionalities**:
  + **User Registration and Profiles**: Allows users to register, update personal details, and manage activity preferences.
  + **Activity Booking System**: It helps to reserve time slots for games and fitness facilities according to when each registered user finds fit. A dynamic calendar interface is provided where users can select activities based on availability and age restrictions. System checks to prevent conflicts in scheduling.
  + **Calendar Integration**: Simplify scheduling with a visual calendar interface which makes it easier for users to view their scheduling’s and update accordingly.
  + **User Accounts**: View booking history and schedules that have been already made and manage preferences, also viewing the payment history is available
  + **Membership System**: Three-tiered membership (Silver, Gold, Platinum) with unique privileges such as discounts, priority bookings, bookings that allow to book for guests based on their membership type the number of guests and finally access to exclusive events.
  + **Reminders and Notifications**: Users receive reminders about upcoming bookings through email one day in advance.
  + **Payments and History**: Payments can be made then and there for their bookings in order to confirm their schedule for a particular day and time. Detailed payment history will be available for users to track their transactions.
  + **Feedback**: The registered users can drop a feedback based on their experience in the club which will also help in the improvement of the club.
* **Admin Features**:
  + View daily schedules for all users.
  + Post events and announcements on the website.
  + Access and respond to user feedback.

**Economic Feasibility**

* The website operates as a small-scale service-oriented platform designed to provide value to users.
* It eliminates manual processes like on-site bookings and activity management, reducing operational overhead.
* ArenaX website uses open-source technologies which helps to minimize software costs.
* Users can manage bookings and payments online, reducing their dependency on on-site staff, the main objective here is to make it time saving.
* Features like reminders and accessible scheduling improve user satisfaction and retention which as an overall helps to increase user convenience.
* A direct feedback mechanism enables the club to address user concerns promptly, improving service quality.
* Low operating costs enable sustainable growth without heavy financial investment.
* All technologies used are open-source, reducing software costs.