

Technical Proposal

**Enhancement of the Interactive
and Ladder Game**

To

**Indian Council of Medical Re
New Delhi**

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1. INTRODUCTION

This proposal outlines the plan for the redevelopment of the **Interactive Ladder Game**. The objective is to enhance the user interface, introduce regional and language diversity, and integrate comprehensive analytics. The game will be released in six region-wise versions, reflecting the rich ecological and cultural diversities of India.

2. OBJECTIVES

- To enhance user experience through better graphics and interface design.
- To create region-wise versions.
- To support multi-language functionality.
- To track and analyse player statistics.
- To enable multi-user login and user-based data tracking.

3. SCOPE OF WORK

3.1 REGIONAL VERSIONS

Development of **6 versions** based on geography and ecology:

- **South** – Kerala, Karnataka, Maharashtra & Goa
- **North-East & East** – Odisha, Jharkhand, West Bengal
- **West** – Rajasthan, Gujarat
- **North** – Himachal Pradesh, Uttarakhand, Punjab, Jammu & Kashmir
- **Rest of India** – Madhya Pradesh, Chhattisgarh, Bihar, Assam, Nagaland, Arunachal Pradesh, Manipur, and Sikkim

- All UI texts and messages will be localized.

3.3 GAME ANALYTICS & STATISTICS

Each game session will record and aggregate:

- **Average moves** per player/game
- **Number of wins** per player
- **Player-based stats** (win-loss ratio, number of games played)
- **Login-based tracking** (username, login time)
- **Region & Language-based metrics**
- **Movement patterns** (e.g., how often snakes/ladders are used)
- **Session duration**
- **Cross-session aggregation** to find averages, trends, and correlations

A backend dashboard (admin-only) will visualize this data for reporting and analysis purposes.

3.4 USER LOGIN MANAGEMENT

- Support for **multiple login accounts**
- Secure registration and login module
- User profile storage including:
 - Name, region, language preference
 - Game history
 - Analytics dashboard (for personal stats)

4. TECHNICAL ARCHITECTURE

BACKEND

- **Technology:** Node.js with Express.js or Python with Django
- **Database:** MySQL for storing stats and user profiles
- **Authentication:** JWT or OAuth 2.0 based system or Token-based authentication
- **Analytics Engine:** Custom aggregation service using server-side processing

HOSTING

- Cloud-based deployment on AWS/Google /Azure
- CDN for fast content delivery
- Secure HTTPS communication

5. DELIVERABLES

- 6 region-specific playable versions of the Snake and Ladders game
- Language selection feature - Multilingual interface with switcher
- User login and profile system and game history
- Admin analytics dashboard
- Cloud hosted deployment
- User manual
- Training & support (if required)

6 ASSUMPTIONS

- All regional boards and content will follow standard game rules
- All languages used are assumed to be supported by standard encoding

- Background music/audio cues (if culturally specific)
 - Icons, art, Snake images
- The language translation will be provided by the client or vendor after initial machine translation.
- Hosting environment and credentials will be provided if dependent on client's infrastructure.
- Analytics will be stored and visualized using basic dashboard tools or third-party integration are not included in this scope. Additions will be added.
- Game rules and mechanics follow the traditional Snake and Ladder without complex gameplay modifications.
- Security requirements are standard (login auth, HTTPS, basic validation) unless otherwise specified.

7 INPUTS REQUIRED FROM CLIENT

To ensure successful and timely delivery, the following inputs are required from the client:

- Approval of game board design samples for each region.
- Approval of Game Rules and Visual Concepts for each region.
- Licensed images of intended Snakes on the game board.
- List of languages and their translations for UI components.
- Cultural content reference for region-specific themes (language, visuals, audio, etc.).
- Logo, branding, or sponsor content (if required in the UI).
- Hosting preference (cloud provider, server specifications, or self-hosted).

8. FUTURE ENHANCEMENTS (OPTIONAL)

- Multiplayer (online or LAN-based)
- Integration with educational content (for edutainment)
- Achievements and leader-board system