

Teen Patti

Teen Patti (Hindi for Three Card Poker) is a well game known and played in the Indian sub-continent region. Essentially, every player is given a hand of 3 cards, and they bet whether they have the strongest hand. Strong hands are determined, based on the ranking of hands:

- **Three of kind (trio):** Three same cards, with three Aces being the highest and three 2s being the lowest.
- **Straight flush:** Three consecutive cards of the same suit.
- **Straight sequence:** Three consecutive cards, not from the same sequence.
- **Color flush:** Three cards from the same suit. Ties are resolved by the first high card. If all card values are same, then suits are ranked from Spades > Diamond > Heart > Clubs.
- **Pair:** Two cards of the same value. Pair with higher rank dominates. If a tie still exists, then the value of third card decides the winner. In the game is still tied, ranking of suits determines the winner (Spades > Diamond > Heart > Clubs).
- **High card:** First card with highest value determines the winner. If the game is tied, then ranking of card suit determines the winner (Spades > Diamond > Heart > Clubs).

Below are definitions for some of the varying rules for our implementation:

Entry Fee: Every player has to put in a minimum bet in order to join a game. This ensures that a player playing *tight* game also loses money every round.

Blinds: Blind players put up at least *half* the amount of the current level of bet by a seen player. We will not implement a *force blind* round after the ante.

Calling and raising: A player who has seen the cards can *call* by the minimum amount or *raise* the bet. A blind player will have to *call* or *match* half of the minimum calling amount. When a blind player *raises* the bet, every *seen* player has to *call* a minimum of the double the blind bet.

A Game: A game will be made up of 5 rounds.

Limiting: Tables will have a *spread-limit* for a total maximum bet on the table.

Side-show: A player can request the previous player for a (side-)show by putting up double the minimum bet amount and if accepted, they participate in a private *show* of hands. A blind player **cannot** request for side-show.

Show: When only two players are playing, any player can request for show of cards, by putting double the minimum bet amount.

Timeout: A player not playing for 30 seconds will be timed-out to a the minimum bet. After 3 such timeouts, the player will be removed from the table.

Stretch Goals

Number of players: While the game can be played with two players, the intent is to allow up to 8 players per table.

Increase interactivity: Increase the interaction between users apart from chats. Maybe the ability to gift *items* to other users on the table? Selecting an avatar while joining a table is another interesting functionality that we want to add.

Incorporate security tests: We intend to ensure security in our software and therefore, intend to have Static Application Security Testing (SAST) and Dynamic Application Security Testing (DAST).

Variations of Teen-Patti: Have different tables running different variations of Teen- Patti, namely, *Best-of-four* and *Community*.

Challenges for the game:

1. Developing a *structure* for storing information about players and game on the server is challenging as there is no database to keep track of it. Maintaining the game state for each table, with their chat history could require some smart designing on the Elixir side of things. Interestingly, we have to develop the ability to *side-show* - a private show of cards between two users.
2. Figure which is more interesting - Antes or Blinds: We want to keep the game interesting and at the same time have a good amount of interactivity from the users. We intend to take a call between having *forced-blinds* after the Antes for entry, or simply allowing users to continue play after the Antes. In our experience, *side-show* and blinds are the elements that keep the game lively, even without the *forced-blinds* round.