**TigerCard Application – Complete Overview**

**1. Introduction**

TigerCard is a multiplayer, turn-based card game designed for Android. The backend is developed using Spring Boot (Java) with Supabase for database management. The game revolves around strategic card selection, shuffling, passing, and winning conditions while maintaining an engaging gameplay experience.

The core mechanics of the game include customized card themes, a strategic win declaration system, and a multi-winner scoring mechanism. These features enhance the overall engagement and introduce a skill-based decision-making approach.

**2. Core Game Concept and Mechanics**

**2.1 Game Flow**

1. Players select four cards from a shuffled deck before the game starts.
2. The selected cards are hidden, shuffled, and placed in a shared pool.
3. Players take turns passing and receiving cards strategically.
4. A player wins when they collect a predefined set of cards but must manually declare their win.
5. The game continues even after a player wins, allowing others to achieve their own winning condition.
6. Players earn points based on the order in which they declare their win.

**2.2 Game Constraints and Rules**

1. Players choose from a predefined list of 15 card types.
2. All selected cards are shuffled into a single pool before distribution.
3. Players can pass and receive cards during their turn.
4. A player must manually declare their win after meeting the winning condition.
5. The game does not end after the first win; multiple players can win in the same round.
6. Players earn points based on the order of their win declaration.
7. Players do not earn points for in-game actions such as passing cards.
8. Player data and points are stored in Supabase, ensuring that scores are retained even if a player disconnects and rejoins the game.

**3. Technical Architecture**

**3.1 Technology Stack**

* **Frontend:** Java SDK (Android).
* **Backend:** Java (Spring Boot).
* **Database:** Supabase (PostgreSQL).
* **Hosting:** Supabase Cloud.
* **Real-Time Communication:** Supabase WebSocket and API.
* **Security:** JWT Authentication.
* **Build System:** Maven.

**3.2 System Design**

1. **Game Room Management**
   * Handles room creation, joining, and rejoining.
   * Maintains active game sessions.
2. **Card Management**
   * Manages card selection, shuffling, and distribution.
   * Stores all available card types and images.
3. **Turn-Based System**
   * Ensures smooth turn order and card passing.
   * Manages real-time communication between players.
4. **Win Detection and Points System**
   * Evaluates win conditions and assigns scores.
   * Updates leaderboard rankings dynamically.
5. **Database Support**
   * Stores and manages game state using Supabase.
   * Ensures persistence of player data, game rooms, and card states.

**4. Card System Overview**

**4.1 Card Attributes**

Each card consists of the following attributes:

* Unique identifier (ID).
* Card type (Movie, Cartoon, Hero, Heroine, Fantasy, or Special Effect).
* Card name (e.g., Bahubali, RRR, Shinchan, Tom & Jerry).
* Image URL for card representation.
* Theme to categorize the card (e.g., Telugu Movies, Cartoons).
* Power Level for special ability cards.

**4.2 Card Types and Themes**

1. **Telugu Movies**
   * Example cards: Bahubali, RRR, Pushpa.
2. **Cartoons**
   * Example cards: Doraemon, Shinchan, Tom & Jerry.
3. **Tollywood Heroes**
   * Example cards: Mahesh Babu, Prabhas, Jr. NTR.
4. **Tollywood Heroines**
   * Example cards: Samantha, Rashmika, Anushka.
5. **Fantasy**
   * Example cards: Tiger King, Black Panther, Mystic Wolf.
6. **Special Effect Cards**
   * Example cards: Double Chance, Swap Turn, Skip Turn.

**4.3 Special Effect Cards and Their Roles**

1. **Skip Turn** – Forces the next player to lose a turn.
2. **Swap Turn** – Allows a player to swap a card with another player.
3. **Double Chance** – Grants an extra turn to the player.

**5. Game API Design (Backend - Spring Boot)**

**5.1 API Endpoints**

1. POST /game/start – Creates a new game session.
2. GET /game/status/{id} – Retrieves the status of a game room.
3. POST /player/join – Adds a player to a game room.
4. POST /cards/shuffle – Shuffles and distributes the cards.
5. POST /player/pass-card – Passes a card to another player.
6. POST /player/declare-win – Allows a player to declare a win.

**6. Winning System and Points Allocation**

**6.1 How a Player Wins**

1. A player wins by collecting a predefined set of matching cards.
2. The game does not automatically detect a win; the player must manually declare it.

**6.2 Points Calculation**

1. First winner receives 1000 points.
2. Second winner receives 750 points.
3. Third winner receives 500 points.
4. Fourth winner receives 250 points.
5. If a player forgets to declare their win, they do not receive points.
6. The highest scorer does not automatically win; the game continues for all players.

**7. Patent Considerations and Unique Features**

**7.1 Innovative Features**

1. **Manual Win Declaration System**
   * Unlike most games that detect wins automatically, players must manually declare their win.
2. **Multiple Winners in a Single Game**
   * The game does not end after a single winner is determined.
   * Other players can still achieve their win conditions.
3. **Points-Based Victory System**
   * The final game ranking is based on accumulated points rather than a single win.
4. **Dynamic Card Selection and Passing Mechanism**
   * Players can pass and receive cards to influence game outcomes.
5. **Thematic Card Types and Customization**
   * Includes special effect cards that alter gameplay.
   * Uses well-known movie and cartoon themes for engagement.

**8. Conclusion**

TigerCard is a modern, strategic card game that integrates traditional turn-based gameplay with innovative mechanics such as manual win declaration, multi-winner scoring, and a dynamic card-passing system.

Developed using Spring Boot, Java, and Supabase, the game ensures real-time updates, secure data persistence, and a scalable multiplayer experience.

This document serves as a complete technical blueprint and patent-friendly overview, covering the core mechanics, rules, technology stack, and innovation areas of TigerCard.