🚀 SATTEBAAZ: IPL PREDICTION ARCADE 🚀

Team : CoolAlien

✨ 1. Overview

SatteBaaz is a Discord-based **prediction market** for live IPL matches. Instead of betting real money, users play with **virtual points** in a **YES/NO share-trading** system, wagering on events like **"Will Team X score ≥ Y runs in the next over?"**

🌐 2. Live Data Integration

- **Cricket API**: The bot fetches ball-by-ball data and current scores every over.
- **Win Probability Model**: Uses live score, required run rate, wickets in hand, and historical data to compute each team's instantaneous win percentage.

Auto-Generated Questions: At the end of every over, the bot posts a new market:

```
📊 Market (ID: 9)
    Q : "Will the team score ≥ 48 runs by 5.0 overs?"
                 1️⃣ Yes | 2️⃣ No
                 Price: 5.00 | 5.00
           Based on: 38 runs after 4.0 overs
```

💰 3. Points Economy

1. **Starting Balance**: Every user begins with **20 points**.
2. **Buying Shares**:
   - Each "share" represents a small stake on YES or NO.
   - Initial price for both sides = 5 points.
3. **Outcome & Payout**:
   - **Correct** → you receive your stake back **+ profit** proportional to the settlement price.
   - **Incorrect** → you forfeit your entire stake.
4. **Example Flow**:
   - Person A buys 1 YES share at 7 pts → invests 7 pts
   - Person B buys 1 NO share at 3 pts → invests 3 pts
   - If YES wins → A gets 10 pts (7 + 3 profit), B loses 3 pts
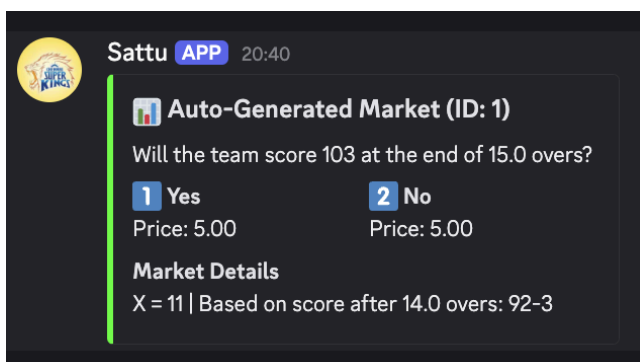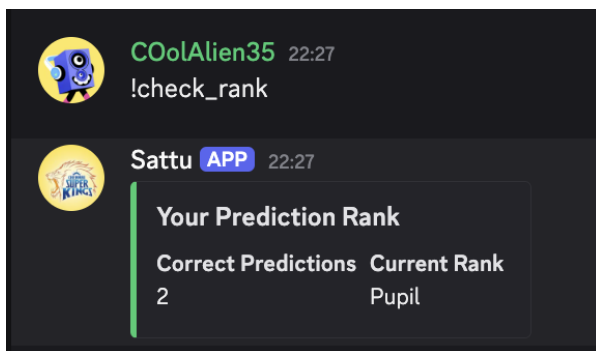

📊 4. Dynamic Pricing Mechanism

- **Supply & Demand**: The more shares purchased on one side, the **higher** its price grows, and the **lower** the opposite side becomes.
- **Win % Adjustment**: Baseline odds derive from the live win probability (e.g. 60% chance → YES starts at 6.0, NO at 4.0).
- The formula for the Pricing Mechanism is based on both the **Supply & Demand & Win % Adjustment.**

Continuous Updates: After each trade, prices are recalculated:

```
price_yes =
  base_price_yes × (1 + k × (volume_yes / total_volume - 0.5))
```

- where *k* controls price sensitivity.

🤖 5. Bot Features & User Commands

👑KINGKK007👑 22:09

!list_questions

Sattu `APP` 22:09

> 🟢 **Active Prediction Markets**
>
> Place your bets! Use `!market <question_id>` to see prices and details.
>
> ❓ **Q3: Will the team score more than or equal to 82 at the end of 9.0 overs?**
> **1** Yes | **2** No
> ⏰ 0h 6m remaining
>
> Use !buy <question_id> <option_number> <shares> to participate!

👑KINGKK007👑 22:23

!help

Sattu `APP` 22:23

> ✨ **Prediction Market Bot Help** ✨
>
> Welcome to the Prediction Market! Place bets, climb the ranks, and become a Grandmaster! 🏆
>
> 👑 **Admin Commands**
> 🔷 `!create_question "Question?" "Option1" "Option2" <minutes>`
>   Create a new prediction market (Admin only)
> 🔷 `!resolve <question_id> <correct_option>`
>   Resolve a market and distribute winnings (Admin only)
>
> 🧑 **User Commands**
> 🔷 `!list_questions` — **See all open prediction questions**
> 🔷 `!market <question_id>` — View details of a specific question
> 🔷 `!buy <question_id> <option_number> <shares>` — Buy shares in a question
> 🔷 `!sell <question_id> <option_number> <shares>` — Sell your shares in a question
> 🔷 `!balance` — Show your coin balance, holdings, and stats
> 🔷 `!check_rank` — See your current rank and force a role update
>
> 🏆 **Ranking System**
> 🥇 **Ranking System:**
> · 🪧 **Newbie** *(0+ correct)* — Grey
> · 🟩 **Pupil** *(2+ correct)* — Green
> · 🟦 **Specialist** *(5+ correct)* — Light Blue
> · 🔵 **Expert** *(20+ correct)* — Dark Blue
> · 🟣 **Candidate Master** *(50+ correct)* — Purple
> · 🟡 **Master** *(100+ correct)* — Gold/Yellow
> · 🟧 **International Master** *(150+ correct)* — Orange/Yellow
> · 🟥 **Grandmaster** *(200+ correct)* — Red
>
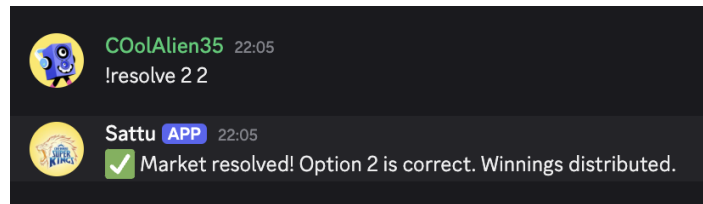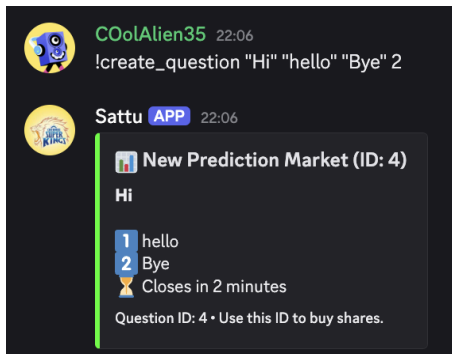> ⭐ Your rank upgrades automatically as you get more predictions correct!
> ⭐ Use `!check_rank` anytime to see your rank or force an update.
>
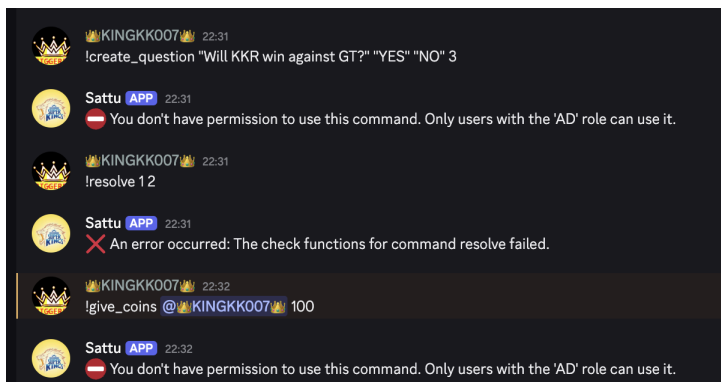> 📝 **Examples**
> **Quick Examples:**
> · `!create_question "Will CSK win today?" "Yes" "No" 60`
> · `!list_questions` (See all open questions)
> · `!buy 1 1 5` (Buy 5 shares of option 1 for question 1)
> · `!sell 1 2 3` (Sell 3 shares of option 2 for question 1)
> · `!resolve 1 2` (Declare option 2 as correct for question 1)
> · `!check_rank` (See or update your rank)
>
> Good luck! May the odds be ever in your favor. 🎲

👑 6. Admin Controls & Market Lifecycle

1. **!create_question "Q?" "Yes" "No" <minutes>**
   - Launches a new market with a countdown timer.
2. **!resolve <id> <correct_opt>**
   - Admin declares winner → bot automatically settles payouts, updates balances & stats.
3. **!give_coins**
   - Admin can give more points to any user.

🏅 7. Tiered Ranking System

Tracks **total correct predictions** and awards Codeforces-style tiers:

```
Newbie        (0+)
Pupil         (2+)
Specialist    (5+)
Expert        (20+)
Cand. Master  (50+)
Master        (100+)
```

```
IM          (150+)
GM          (200+)
```

- **Role Sync**: Use `!check_rank` to sync your Discord role with your new tier.

🛠️ 8. Data Storage & Tech Stack

- **Language**: Python with discord.py
- **Data Store**:
  - **CSV files** for each match: logs of trades, user balances, prediction outcomes
  - **In-memory dicts** for live market state

🎉 9. Why SatteBaaz Rocks

- **Real-time engagement** with every over
- **Skill & strategy**: learn to read the game, spot value in odds
- **Safe environment**: risk-free points simulate real markets
- **Community fun**: friendly competition & leaderboard bragging rights