Voodoo - Game Data Analyst Test

Duration: 1 week
All of the following questions will be based on the game ***Multi Card Jam***. We recommend playing through at least 100 levels to get knowledge of the game

App Store: https://apps.apple.com/us/app/multi-card-jam/id667390679
Google Play: https://play.google.com/store/apps/details?id=com.NBS.multicardjam&hl=en&pli=1

Your deliverables should include:

- A **business-oriented document** (feel free to use any format or medium you're comfortable with).
- A **technical draft** (e.g., SQL queries, Python notebook, Google sheets) that clearly outlines your calculations, data exploration, and reasoning throughout the case.

Some advice for you:

- We expect ***charts*** in your document
- Please use ChatGPT (or equivalent) with care. Creativity is an essential part of this assignment

Part I: General questions

a) Based on your gameplay experience, propose a simple A/B test that could deliver a quick win. What metrics would you monitor to evaluate its success?

b) If you were asked to brainstorm ways to improve the game's long-term retention, and based on your experience playing it, what new feature or system would you propose adding to support this goal?

Part II: Tracking Plan – "Race" & "Tower Streak" LiveOps Event

As a game data analyst at Voodoo, you will be responsible for designing the various events tracked within the game. If you're not yet familiar with event tracking, please take the time to research and understand its principles and best practices.

Multi Card Jam includes two primary LiveOps events:

- **Tower Streak:** This 3-day event rewards players for maintaining a win streak. Rewards are given upon reaching specific milestones. The event ends without rewards if a player loses a single game. Unlocked at Level 60

- **Race:** This daily competition pits players against 4 others to see who can complete 30 levels fastest. The top three finishers receive coin rewards. Unlocked at level 90

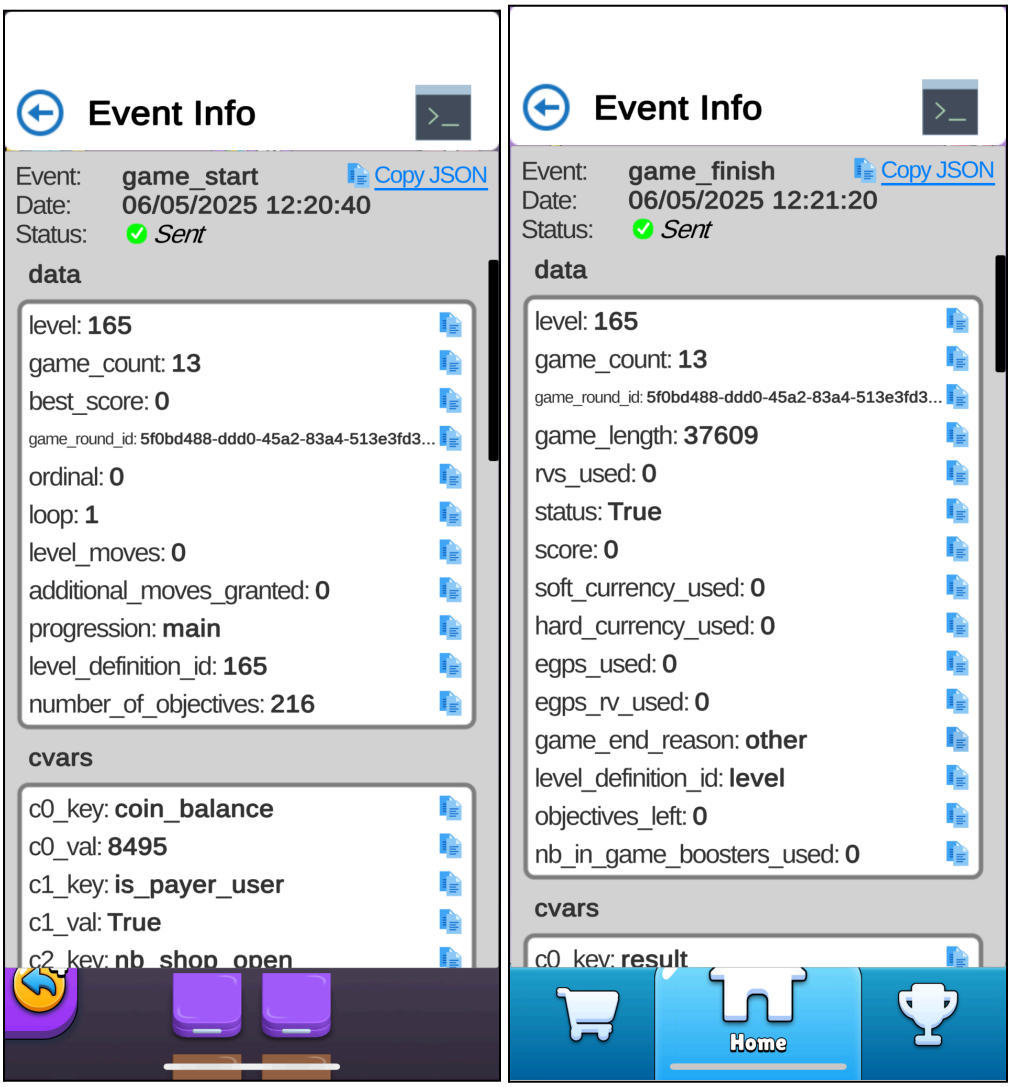
a) What are the objectives of the two events according to you ?

We have multiple analytics events implemented in the game in order to build and maintain data pipelines. This allows us to build dashboards which help us monitor games and find product insights.

For example, we have ***game_start*** and ***game_finish*** events in our game:

- *game_start*: the event is sent whenever the user starts an attempt
- *game_finish*: the event is sent whenever the user finishes an attempt

In the screenshots below, we outline how those events are structured.



b) Which events would you suggest implementing to evaluate the performance of the LiveOps events? Please describe each event, including:
    - When the event should be triggered
    - What parameters it should include (specific parameters)

c) Based on these events, which key metrics would you compute to measure the features' performance?

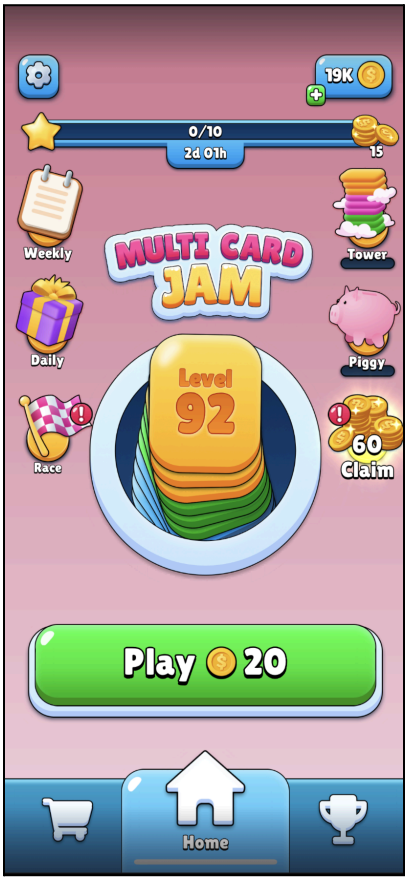
Part III: Analyzing an A/B test - "Pay to Play" test

This section requires analysis of the provided dataset here.

The data belongs to the "Pay to Play" test, where a casino-like mechanic was introduced. Players were required to bet 20 coins to initiate an attempt.

A successful attempt (level win) will lead to 40 coin rewards. A failed attempt (level loss) will result in loss of coins bet and one life. Also, a player can collect 60 coins every 4h for free in this cohort (see screen below). In the control group, an attempt has no upfront cost, and a successful attempt leads to 10 coins rewards whereas a failed one leads to losing one life.

The home screen UI structure of the feature cohort is illustrated in the screenshot below



Interpret the results of this A/B test and deliver **clear, data-backed insights** based on the dataset provided.

Please answer the following questions with clear analyses and data visualizations:

a) Why do you think the game team decided to run this experiment?

b) What would you define as the primary success metric for this test?

c) Is there a clear winner? Why or why not?

d) What are your business recommendations for the game manager based on your findings?

e) Do you have suggestions for future iterations or improvements?

APPENDIX

Each line of the dataset is a session started by a player

- **session_id**: Unique identifier for each player session
- **country**: Country of the player
- **first_app_launch_date**: Date when the player first launched the app
- **fs_revenue**: Revenue generated from full screen ads (interstitial ads)
- **fs_watched**: Number of Full screen ads watched
- **game_count**: Total number of games played by the player
- **iap_revenue**: Revenue generated from in-app purchases
- **iap_transactions**: Number of in-app purchase transactions
- **install_store**: store from which the game was installed
- **manufacturer**: Device manufacturer
- **model**: Device model
- **open_at**: Timestamp when the session started
- **platform**: Operating system of the device (e.g., iOS, Android)
- **ad_revenue**: Revenue generated from advertisements
- **rv_revenue**: Revenue generated from rewarded video ads
- **rv_watched**: Number of rewarded video ads watched
- **session_length**: Duration of the session
- **session_number**: Sequential number of the session for the player
- **user_id**: Unique identifier for the player
- **assigned_at**: Timestamp when the player was assigned to the A/B test
- **ab_test_name**: Name of the A/B test the player was assigned to
- **cohort_name**: Name of the cohort the player belongs to