Gamification with Mirror +

Team AlgoAllies

Our Team

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Problem Statement

- **Game-Banking Integration Strategy:** Create a strategic game within the banking app to boost user engagement, transactions, and RBI compliance.

- **Incentivized Interactivity:** Integrate in-game achievements with the banking app to incentivize active engagement and transactions on both platforms.

Problem Statement

- **Synergistic Rewards System:** Create a system where the banking app grants in-game rewards, boosting financial engagement and in-game spending.

- **Multiplayer Challenges and Social Engagement:** Add multiplayer challenges to the game, promoting social interaction and shared financial goals, and strengthening community bonds.

- **Positive Impact on Financial Journey:** Link game progress to responsible banking, creating a cycle of financial growth and well-being.

Introduction

- Our app combines the thrill of gaming and the wisdom of wealth building

- Financial education is crucial , by gamifying financial concepts we can offer an enjoyable way to reinforce financial education

- Our game simplifies banking concepts, Players gain confidence in dealing with banks and financial institutions in real life.

- The game's educational and gaming elements make it appealing to a wide age range, from younger players just starting their financial journey to adults looking to enhance their financial acumen.

Introduction

- Playing our wealth builder game provides players with the opportunity to apply financial principles in a risk-free virtual environment. They can experiment with investments, banking services, and business management, learning through hands-on experience.

- Our solution encompasses a wide range of financial activities, covering banking services, investments, business management, and real estate. This comprehensive approach ensures users receive a holistic financial education within a single platform.

Solution

- Users can access three distinct games: a quiz game, a memory cards game, and an Atari breakout game. The earnings from these games, in the form of virtual currency, collectively contribute to enhancing the user's financial understanding through our wealth builder game.

- Users progress through various levels in each game, encountering increasing difficulty to keep them engaged and challenged. Advancement unlocks new features, game modes, and customization options. In the wealth builder game, users progress by investing and managing their financial wealth.

- By playing these games, users earn virtual currency. They can then accumulate this virtual currency over time and utilize it within the wealth builder game to invest, save, and grow their virtual wealth.

Benefits to SIB

- Enabling players to redeem rewards from the currency they earn significantly enhances user engagement in the wealth builder game. Additionally, the simple and addictive nature of the added mini-games further contributes to this engagement.

- The game acts as a tool to promote financial literacy among SIB customers, fostering the likelihood of making sound financial decisions.

- An interactive gaming experience will enhance the bank's customer retention. People will prefer a bank that not only provides banking services but also offers an enjoyable experience for their financial journey.

Benefits to SIB

- Furthermore, our solution utilizes Machine Learning to analyze user gameplay. This analysis allows us to customize the advertising of SIB features based on predictions. For example, if a user regularly invests in FDs within the wealth builder game, there is a high probability that they will do the same in real life. Subsequently, we tailor our advertisements to enhance their real-life financial decisions.

Game Concept

- Users can play three specified mini-games to earn coins that they can invest in our wealth builder game. The wealth builder game simulates various real-life scenarios and includes structures such as banks, assets, real estate, restaurants, and vehicle showrooms, helping people learn to invest and manage their finances effectively.

- We plan to maintain a leaderboard based on the points earned in the wealth builder game. Top-ranking players on the leaderboard will receive rewards, such as vouchers from partnered companies.

- Additionally, we will introduce daily, weekly, and monthly quests with enticing rewards, along with a login bonus to increase user engagement.

Game Concept

- We've introduced a unique gaming pass for users, featuring level, player ID, and experience points information. This card serves identification purposes within the game.

- The app considers real-life market conditions, where the value of real estate increases over time while vehicles depreciate.

- The currency earned through the wealth builder game can be exchanged for real-life rewards and special benefits offered by SIB.

User Progression

- Players advance through various levels in the mini-games, encountering increasing difficulties and challenges. By accumulating XP, players can unlock new game modes and customization features.

- As users progress in the wealth builder game, they earn virtual currency that can be redeemed for real-life rewards, and a leaderboard is maintained for tracking their performance.

- Within our wealth builder game, a player's level can increase as they upgrade and enhance their virtual houses. The quality of the house determines the player's level, reflecting their proficiency in asset management and showcasing their progress in the game.

Tech Stack

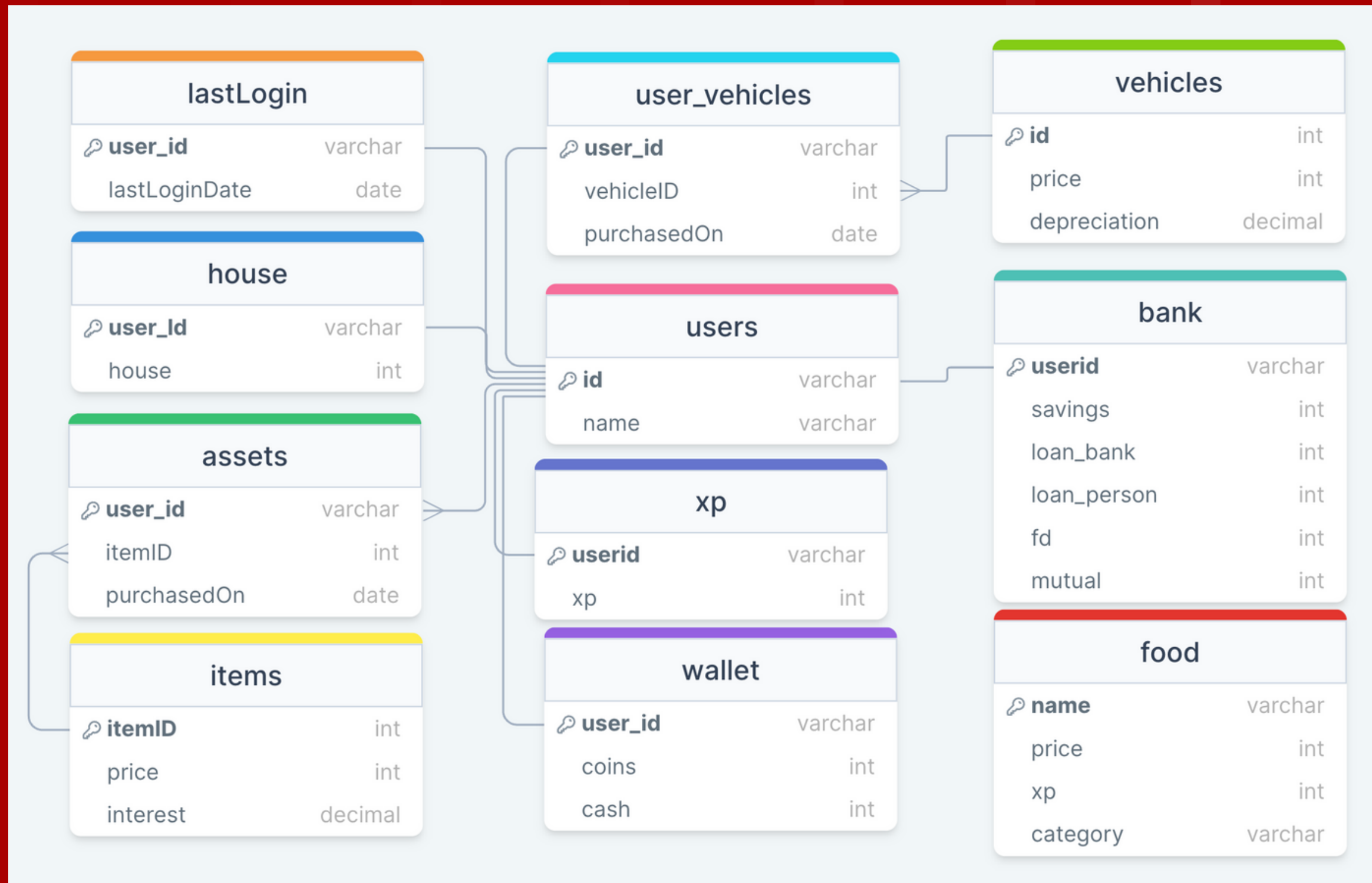Our SDK is built using JavaScript and features a REST API created with Express.js.

The MySQL Database is hosted on Planetscale, and the API is deployed on a VM via Render.

Our Demo Application is developed using the JavaScript framework Next.js and styled with Tailwind CSS, seamlessly integrating with our SDK.

Our application is built with modern technology that can automatically scale as needed.

The tech stack is designed to be modular, ensuring flexibility and easy maintenance.

Database Design

lastLogin
🔑 **user_id**	varchar
lastLoginDate	date

house
🔑 **user_Id**	varchar
house	int

assets
🔑 **user_id**	varchar
itemID	int
purchasedOn	date

items
🔑 **itemID**	int
price	int
interest	decimal

user_vehicles
🔑 **user_id**	varchar
vehicleID	int
purchasedOn	date

users
🔑 **id**	varchar
name	varchar

xp
🔑 userid	varchar
xp	int

wallet
🔑 **user_id**	varchar
coins	int
cash	int

vehicles
🔑 **id**	int
price	int
depreciation	decimal

bank
🔑 **userid**	varchar
savings	int
loan_bank	int
loan_person	int
fd	int
mutual	int

food
🔑 **name**	varchar
price	int
xp	int
category	varchar

SDK Features

Our SDK utilizes a MySQL database, serving as the central repository for all user data.

Key User Features:

- User Creation : Seamlessly create user accounts.

- Password-Free Login : Access the game without the need for passwords or PINs.

- SIB User-to-Game ID Mapping : Efficiently link SIB users to in-game IDs.

- Login Bonus Linked to House Level : Reward users with login bonuses based on their house level.

SDK Features

Users engage in an ever-evolving in-game economy, buying and selling assets and vehicles with daily value changes, directly impacting their coin balances.

Boost your coin balance through:
- Addictive mini games like Atai, Quiz Game, and Memory Cards.
- Smart investments in FD and Mutual Funds.
- Profitable sales of fund units.

Ways to Earn XP :
- Secure your leaderboard ranking with:
- XP-boosting food purchases.
- Competitive play in engaging mini games.

SDK Features

Two forms of in-game currency: Coins (primary) and Cash (earned through leaderboard ranking).

A level playing field on the leaderboard is maintained through monthly XP resets.

In summary, our SDK provides:
- A user-friendly experience with easy login and user management.
- A dynamic in-game economy, empowering users to earn and progress.
- A fair and competitive gaming environment with dual currency and monthly leaderboard resets.
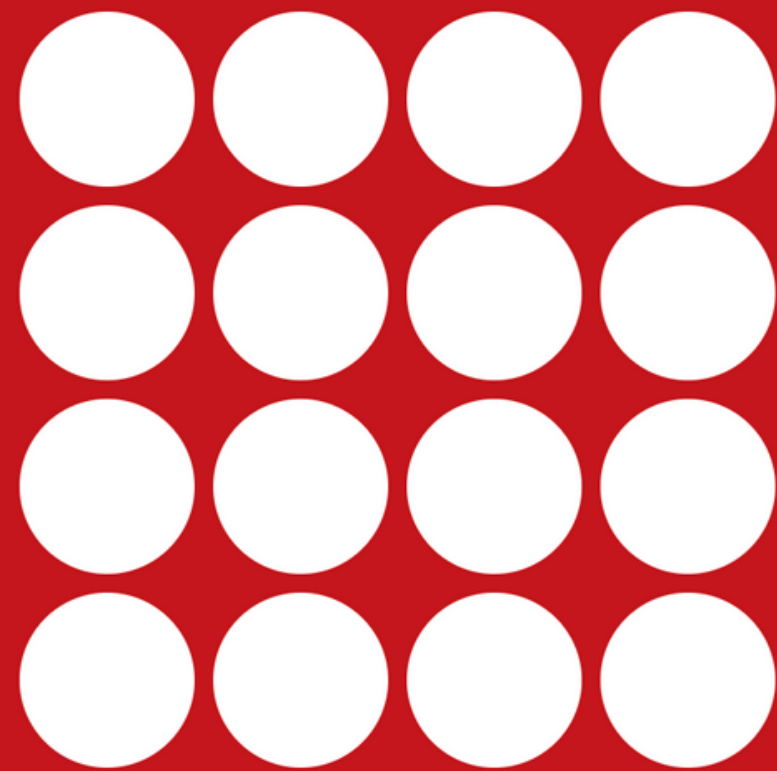
Demo Application

[Demo Application](#)

Wallet

Cash :   100
Coins :   1500

Mini Games

Earn and Grow

Get Your Gaming Card Now
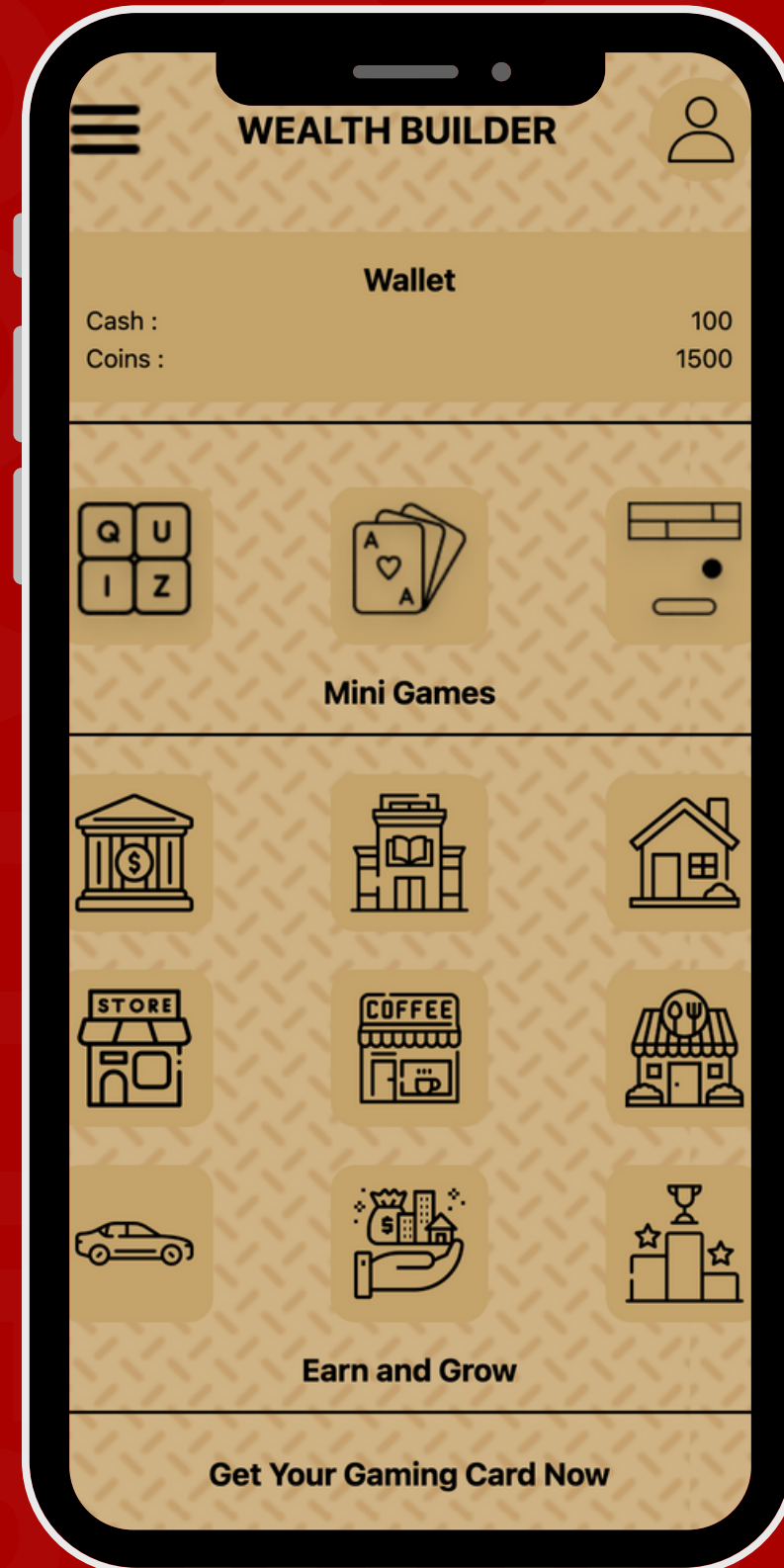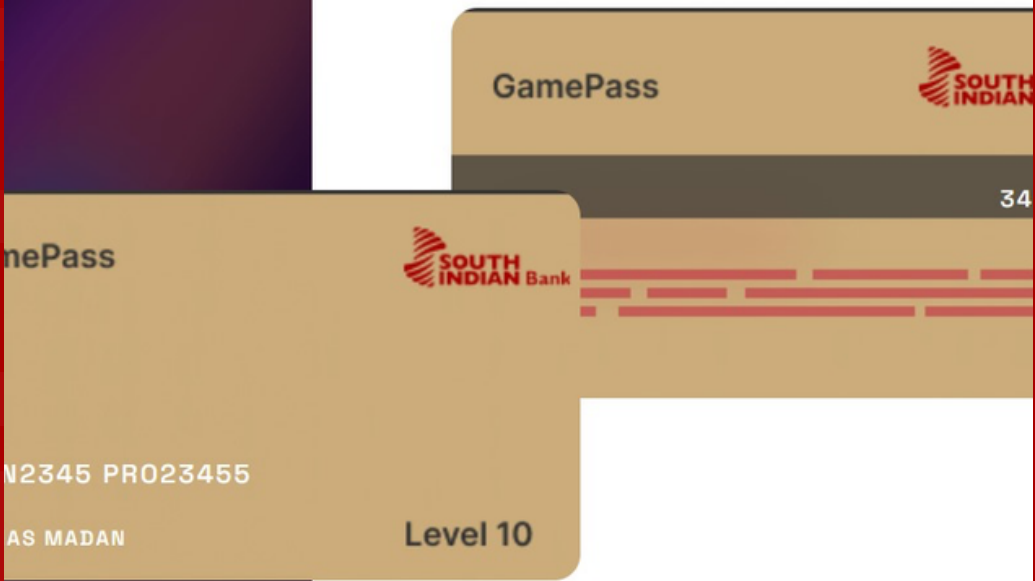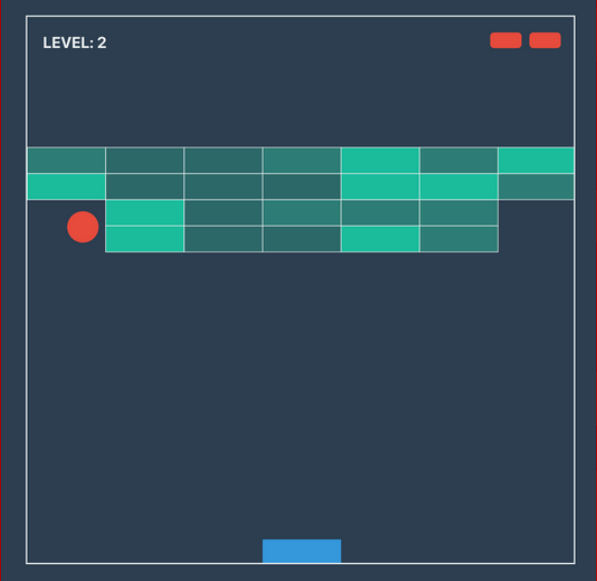
Demo Application

Moves - 0

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What is RuPay Debit Card?

Domestic debit card

Introduced by National Payments Corporation of India

Accepted at all ATMs & PoS machines

All of the above

LEVEL: 2

GamePass

SOUTH INDIAN

mePass

SOUTH INDIAN Bank

N2345 PRO23455

AS MADAN

Level 10

ALGO ALLIES

Integration with Mirror+

Our REST API empowers you to effortlessly connect your application with any tech stack, even within your website.

Key Advantages:

- **Effortless Integration:** Seamlessly incorporate our REST API into your systems.
- **Tech Stack Freedom:** Designed to work with various technologies, ensuring compatibility with your current stack.
- **Rapid Deployment:** Get your application up and running swiftly.

Integration with Mirror+

Boosted Development Speed
By opting for the REST API, you can streamline your development process and concentrate on your core project.

Ready for All Environments
Whether you're developing a website or any other software, our REST API flexibly adapts to your project's unique requirements.

Rewards and Incentives

- Referral Bonus: "Refer friends, get rewards."

- Cash: "Win virtual money playing games."

- Coupons: "Unlock discounts and deals."

- GamePass: "Gamer card to show your skills"

Rewards and Incentives

- **Coupons: "Unlock discounts and deals." -** The coupons available can vary widely and might include discounts on products, services, or even special offers from real-world businesses.

- **Cash: "Win virtual money playing games." -** Virtual money often represents a player's progress and accomplishments within the game. It can be used to unlock new levels, characters, items, or abilities, giving players a sense of achievement and progression.

Rewards and Incentives

- **Referral Bonus: "Refer friends, get rewards."** - Users earn rewards not just from playing games but also by competing to refer the most friends, which further enhances their engagement.

- **GamePass: "Gamer card to show your skills"** - Gamer's Cards provide players with a unique identity within the gaming world. They showcase a player's achievements and level, giving them recognition among their peers.

Leaderboard

- Leaderboards will be made on the basis of experience points that the user will earn by playing the wealth builder game. Users with more experience points will be placed on the top of the leaderboard.

- Users who rank high on the leaderboard will be given vouchers provided by partnered companies.

- High ranked users will also get virtual currencies and skill based rewards.

- Users on the top of leaderboard will be awarded in game cash which can then be exchanged for real life rewards

- To eliminate the early-comer advantage, the leaderboard resets monthly.

Notifications

Users will receive notifications about the following :
- Daily login to receive rewards.
- New features added to the games.
- To participate in tournaments, special challenges etc.

ML Model

- In our game, we've implemented an ML model to analyze in-game choices, offering insights into potential real-life decisions. This allows us to craft more effective advertising strategies by understanding player behavior and predicting potential real-world actions.

- For example, if a person invests heavily in mutual funds in-game, they are likely to gain a good understanding of the concept. This knowledge can assist us in targeting mutual funds-related advertisements to them, potentially creating opportunities for real-life investments.

- Studies have been conducted, confirming that a person's actions in real life may be influenced by the games they play. This assertion is supported by several research papers.
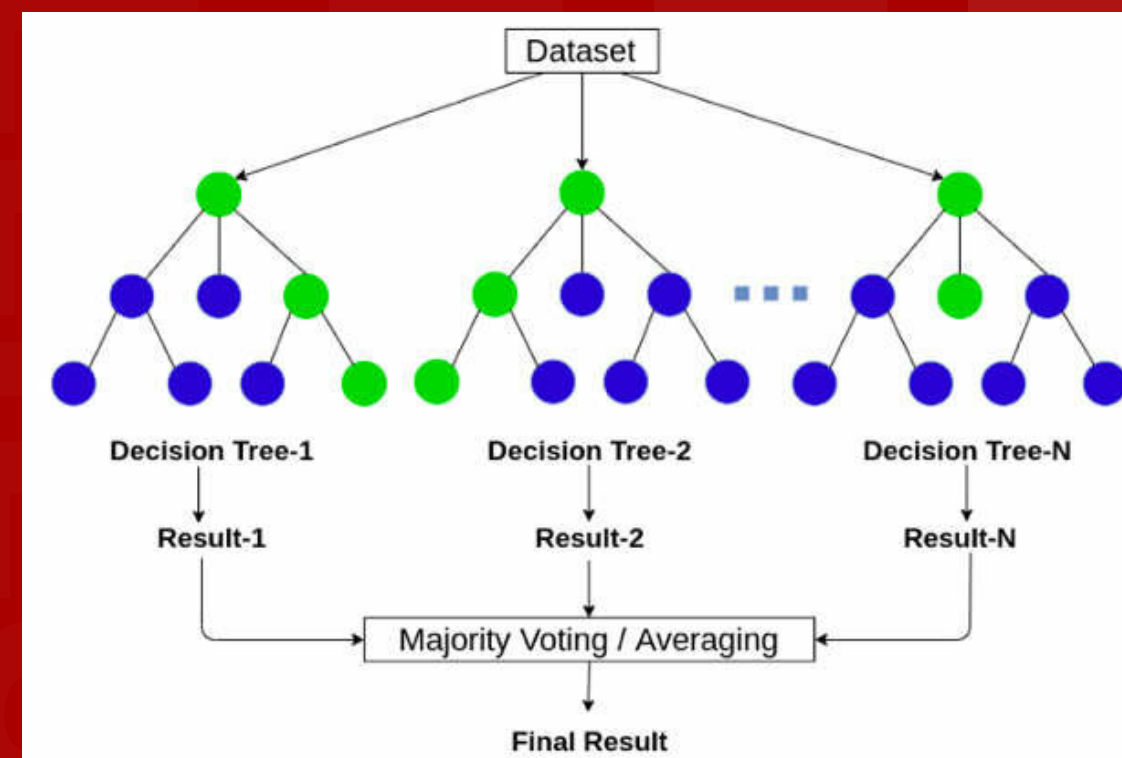
ML Model

- "The Influence of Video Game Competition and Violence on Aggressive Behavior: Which Characteristic Has the Greatest Influence?" by C. Ferguson and C. Rueda, published in Psychiatric Quarterly.

- "The Effects of Video Games on Aggressive Thoughts and Behaviors During Development" by C. A. Anderson and K. E. Dill, published in Psychological Science.

- "The Impact of Video Game Playing on Academic Performance at a Community College" by A. A. Cole, published in International Journal of Game-Based Learning.

ML Model

- A dummy dataset is fed to the ML Model, where the features comprise columns recording the user's actions, and the target values represent the probabilities of the user investing in mutual funds, taking a loan, and buying a fixed deposit.

- We analyze the features one by one to determine the probabilities of the target values.

- Advertisements can be targeted to the user based on the probabilities computed by the model.

ML Model

- The model we use is a standard Random Forest Regressor, an ensemble learning method employed for regression tasks.

- As we need to predict the probability of task performance, it inherently becomes a regression problem, making the Random Forest Regressor a suitable choice due to its strong accuracy and efficient computing speed.

ML Model

- The Random Forest Regressor is among the more fundamental regression models available.

- However, once this game is live and in the testing stage, we will have access to a dataset directly acquired from the users' actions.

- Based on this real dataset, we can re-evaluate and assess if other stronger regressors like **CatBoost**, **XGBoost**, **LightGBM**, or even stacking models perform better, enabling us to make appropriate changes to our model.

- With a real dataset, we will also be able to calculate the model's effectiveness on the training dataset, aiding us in making necessary improvements if needed.

Data Collection

- Data will be collected through the user's actions in the game. Other additional sensitive information, such as their real bank account number and bank balance, will NOT be considered by our app, as they are entirely redundant.

- Only a minimal connection between the individual and their game account is necessary to enable them to redeem in-game benefits. Apart from this, no information will be acquired from the SIB app whatsoever.

Data Security

- While the occurrence of a data breach is incredibly unlikely, it's essential to note that we do not store any sensitive information from the user's real life.

- Consequently, there is very little to no data that could be leveraged by a hacker to perform malicious activities.

- This approach ensures that users can play the game carefree, feeling secure about the information they share with the SIB app, as their sensitive personal data remains uncompromised within our system.

- This commitment to data security serves to instill a sense of confidence and safety among our users, fostering a more enjoyable and worry-free gaming experience.

Analysis

- The acquired data serves as a valuable resource for in-depth user analysis, allowing us to provide more accurate recommendations and targeted content advertising as the game expands and new features are added.

- This continual analysis helps us better understand user preferences, leading to a more personalized and engaging gaming experience

Future expansion

- In the future, we plan to introduce a towering Stock Market Tower within the game. This feature will offer players an immersive and realistic stock trading experience, allowing them to buy, sell, and invest in virtual stocks, bonds, and commodities, further enhancing their financial expertise.

- Our commitment to continuous advancements ensures an ever-evolving, enriching user experience in the realm of financial education and entertainment.

- We plan to regularly introduce updates, new games, and exciting features to keep users engaged and empowered on their financial journey.

RBI Guidelines

Passwordless User Accounts
User account passwords are not stored, enhancing data security and preventing unauthorized access.

Anonymity
The user information remains anonymous as no user data is collected.

Secure Hosting
Game data is hosted on PlanetScale, renowned for its exceptional security measures, making hacking attempts significantly challenging.

Thank You !