Game Story - Applied Analytics & Data Science Take-Home Challenge

Scenario

You have just joined Game Story. We have exported three months of anonymised data from our real-money skill game, "Solitaire Stash".

Your job is to:

- Surface a handful of actionable insights.
- Build a lightweight predictive model the product team can use.

Data Provided

Four CSV tables:

- players.csv: demographics and acquisition
- sessions.csv: gameplay sessions
- transactions.csv: deposits, withdrawals, entry fees, rewards
- tournaments.csv: tournament metadata

Tasks and Deliverables

Part A - Quick business slice

1. KPIs notebook or sheet showing:
   - Day-1 retention (percent)
   - 7-day cumulative ARPU (USD)
   - 30-day churn rate (percent)

2. Insight memo (one page max) answering:
   - What is the biggest monetisation opportunity for Q3?
   - Which cohort needs extra retention effort and why?

Part B - Predictive slice

Deposit Forecast – expected deposit amount for the next 30 days per player.

Provide:

- Notebook or script (Python or R) that loads the data, engineers features,
  compares at least two model types, and explains feature importance.
- A CSV called scores.csv containing player_id and your prediction.
- A one-page model card with goal, data window, metrics, caveats, and next steps.

Stack and Tooling

Use any stack you are productive with, for example:

- SQL + Metabase + Python (pandas, scikit-learn, lightGBM)
- BigQuery + Data Studio + Vertex AI
- Snowflake + Tableau + dbt + XGBoost

We should be able to reproduce or review your work in under 30 minutes.

Submission

When you are ready, send a GitHub repo link (or zip) containing:

- README.md with quick-start
- Your notebook/script plus requirements.txt or environment.yml
- The insight memo (Markdown, PDF, or slide)
- Screenshots or link to any visual-only dashboards

Good luck!