Data Analyst – Marketing

Thank you for your interest in Pocket Gems! This document describes the homework assignment that we would like you to complete. The assignment is designed to help us understand how you think and work. You may use any programming language that you like (R, Python, Excel, TI-85, etc.). Be sure to include your code when you submit your work. Good luck, and have fun!

Objective

Use the data below to estimate the potential "Lifetime Value" (or total earning potential) of an average user in the fictional free-to-play game "Zombie Unicorn Slayer". The Lifetime Value of a user is how much revenue we estimate that the user will generate over his/her lifetime playing our game.

Data

We've provided you with three tables that may be useful in estimating Lifetime Value:

- **The Users** table has information about the install date, the geographic origin, and the device type of our fictional users (all of these users are using Apple devices). Each user appears once in the table and is tied to a unique player identifier.

- **The Sessions** table tracks the number of sessions a user logs each day. A user could appear multiple times in this table but only once per day

- **The User_Purchases** table tracks the sum and count of all in app purchases that a user makes in a day in the game. Revenue is measured in dollars. A user could appear multiple times in this table per day.

Model

Using as much data as you feel is relevant and meaningful, generate a prediction what the average LTV of a user is. The output of your analysis should be a model that determines the potential lifetime value of users in our game. Please describe your approach and provide details on the function/layout of the model.

Questions

- What is LTV (in $) of users in this game? What would you project LTV of these users to be if they continued to play the game beyond the observation period?

- What are the key assumptions that you are making? What are the weaknesses of these assumptions?

- Why might it be important to have an estimate of a user's LTV?

- How might the LTV of new users change as the game spends more time in the market?

- What additional data might you want to in order improve your estimates? How would you use it?

- Would you want to estimate this model for different groups of users rather than using all user data together for your estimate? If so, which groups of users would you want to model separately?

Suggested Time Investment: 5-8 hours. We understand that conducting this analysis fully would take much more time, but we would love to see what you can accomplish in a few hours.