The Economy of Animal Crossing

Analyzing the Creation of Game Economics

Christian Graham, Andrew Lay, Imani Pelton, and Laura Smith

***Abstract*— The objective of this project is to analyze the economy of Animal Crossing to derive how it was created by its developers. We will then use that data to compare it to other games and find out if there is a correlation for making a balanced game economy. As students who enjoy both playing and creating games we're curious to find out how a big game developer has created a balanced game economy that many people enjoy to this day.**

I. INTRODUCTION

Animal Crossing is a video game created by Nintendo that released in March of 2020. It is a social simulation game in which the player moves to a remote island and has to pay off their house to the local storekeep, Tom Nook. It was a massively popular game in which players participated in the simulated economy of the game, and we'd like to analyze that economy to figure out how it was balanced so well. As students who enjoy playing games along with making them in our spare time, we'd like to analyze an important aspect of game making, which is balancing the difficulty to make it fun and enjoyable to play. We'd then like to analyze other games to see how an economy balanced like the Animal Crossing one would look like, as well as compare the Animal Crossing economy to other game economies. The first game we'll be comparing is Pokémon, a game in which the player lives in a world filled with strange animals with powers and your goal is to train them and create the strongest team. We'll be seeing what each item in Pokémon would be priced in the Animal Crossing world; these items will range from pokéballs to in game clothing items. Next we'll compare Minecraft, a game in which you are in a huge world and you must use the materials around you to help you survive against the enemies in the game. To figure out how Minecraft crafted its block rarity, we'll be comparing the rarity of building materials in the game to what that would mean cost-wise in the Animal Crossing economy. Next we'll look at The Sims 4, a life simulation game, very similar to Animal Crossing but it's more realistically themed. We'll compare its economy to that of Animal Crossing to see how each game balanced the rarity of their items. Another game we'll look at is Counter-Strike: Global Offensive (CS:GO), a first person tactical shooter game in which there is both an in game market and a market that uses real money in which designs for weapons and clothing are sold. We are curious to see how this market, which is partly based on real world money, stacks up against Animal Crossing. Lastly, we'll take a look at Roblox, a game marketed at children in which players both make games and play games made by other users. In the game players can by a myriad of items, and we'd like to see what they'd be worth in Animal Crossing to see how they'd compare.

II. THE DATA

To analyze the main game that we will be focusing on, we'll be using a data set from Kaggle, a website designed for the ML and AI community and is well known as a trusted source. This data set details every aspect of items and NPCs (non-player character) in animal crossing. For example, for each wearable accessory it lists the variations of each item, if it can be crafted or if it has to be bought, how much in game currency it is sold for, how much in game currency you can sell it for, and also where it can be sold. It details out each aspect of every item in this very way. It is a good data set to build our project off of and comb through to find the data we actually need. We will then comb through other games to gather data and build our own data sets for them to compare to the Animal Crossing data.

To gather the data for the other games we'll attempt to find online data sets, which we'll analyze to see if it will be useful or if we should collect the data ourselves. We'll collect the data ourselves through using APIs and data scrapers to collect a useful data set. The goal of comparing it to these other games is to test how good the game developers of Animal Crossing made the

economy of the game. We would like to explore if other games of various types and genres are similar at all to how Animal Crossing set up their economics, especially when it comes to games using real money in their shops.

III. RESPONSIBILITIES

We plan to begin by collecting all of the data while one member cleans and compiles the Animal Crossing data. In the process of collecting the data from the other games we may decide to not move forward with analyzing that game. Due to the higher probability of finding good data for Minecraft and The Sims, one person will take care of both, however join in helping with the Animal Crossing data later on. We will also have one person analyze the data for both games that use real world currency so that we are better able to see the similarites and differences of them. These responsibilites are for the beginning of the project and depending on which games we decide to keep for analysis, the games assigned to indiviuals to analyze may change.

Christian Graham
NetID: cgraha37, ghid: cgraha37

1) Try to find data sets for Pokémon
2) Clean the found data set for Pokémon
3) If data set isn't useful after cleaning, look into collecting the data
4) Analyze Animal Crossing bug and fish data to find out their rarity and how they are priced

Andrew Lay
NetID: alay10, ghid: alay10

1) Clean and compile useful data from Animal Crossing data set
2) Begin to compile data into graphs and tables
3) Analyze clothing and accessories data to find out their rarity and how they are priced
4) Analyze household object data to find out their rarity and how they are priced

Imani Pelton
NetID: ipelton, ghid: bepri

1) Try to find data sets for CS:GO items, focusing on gun skins that have real monetary value
2) Clean the data set for CS:GO
3) If no data set found, look into data collection for the game
4) Repeat steps 1-3 for Roblox items

Laura Smith
NetID: lsmit248, ghid: LSmith2174

1) Try to find data sets for Minecraft, focusing on block rarity
2) Clean the data found for Minecraft
3) Determine if the data is usable for this project, and if not look into methods of collecting data
4) Repeat steps 1-3 for the Sims 4

IV. TIMELINE

1) (9/28/23 - 10/12/23) Find data sets for the 5 games and determine their usability and if we should move forward with using each game. Begin the data cleaning and analysis of the Animal Crossing data.
2) (10/12/23 - 11/2/23) Finish analysis of Animal Crossing data and begin to compare it to the other games, each member is in charge of comparing the games they found data for, Andrew Lay will assist with Imani and Laura's games.
3) (11/2/23 - 11/16/23) Begin to compile together the data and assemble it visually through graphs and charts.
4) (11/16/23 - 11/30/23) Create the presentation and finalize conclusions and findings]
5) Practice presenting and iron out the creases until the presentation date.

V. CONCLUSION

We expect to figure out how different games deal with item rarity and pricing, which is a delicate balance in most games. We expect that the rarity for most objects within Animal Crossing and Pokémon to be lower than that of the other games, the highest rarity to be expected from the games with real money as their currency such as Roblox and CS: GO. We expect the Sims 4 to be the most similar, however the Sims 4's items rarity is most likely lower than that of Animal Crossing. We are curious to find out how the different genres and audiences of the games will affect the outcomes we find.